PUBLIC DRAFT

DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

CENTRAL AREA SPECIFIC PLAN

VOLUME II (APPENDICES)

JUNE 26, 2020

Prepared for:

City of Salinas
Community Development Department
65 West Alisal Street (Second Floor)
Salinas, CA 93901

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

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APPENDIX A – NOTICE OF PREPARATION/INITIAL STUDY & COMMENTS

PUBLIC DRAFT

INITIAL STUDY AND NOP

FOR THE

CITY OF SALINAS
CENTRAL AREA SPECIFIC PLAN (CASP)

SEPTEMBER 7, 2017

Prepared for:

City of Salinas
Community Development Department
65 W. Alisal Street
Salinas, CA 93901

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
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NOTICE OF PREPARATION

TO:	State Clearinghouse State Responsible Agencies State Trustee Agencies Other Public Agencies Interested Organizations	FROM:	Jill Miller, Senior Planner City of Salinas Community Development Department 65 West Alisal Street (Second Floor) Salinas, CA 93901 Telephone: (831) 758-7206 Fax: (831) 775-4258 Email: jill.miller@ci.salinas.ca.us

SUBJECT: Notice of Preparation – Salinas Central Area Specific Plan (CASP)

An Initial Study has been prepared for the proposed project and is attached to this Notice of Preparation (NOP). The Initial Study, which is incorporated herein by reference, contains a description of the proposed project, a map showing its location, and discussion of its probable environmental effects. Notably, the proposed project is one of statewide, regional, or areawide significance, making the project subject to the requirements of Public Resources Code section 21092.4. That statute provides that, for any such project, "the lead agency shall consult with transportation planning agencies and public agencies that have transportation facilities within their jurisdictions that could be affected by the project. Consultation shall be conducted in the same manner as for responsible agencies pursuant to [CEQA], and shall be for the purpose of the lead agency obtaining information concerning the project's effect on major local arterials, public transit, freeways, highways, overpasses, on-ramps, off-ramps, and rail transit service within the jurisdiction of a transportation planning agency or a public agency that is consulted by the lead agency." As used in section 21092.4, the term "As used in this section, 'transportation facilities' includes major local arterials and public transit within five miles of the project site and freeways, highways, overpasses, on-ramps, offramps, and rail transit service within 10 miles of the project site."

The Initial Study lists those issues that will require detailed analysis and technical studies that will need to be evaluated and/or prepared as part of the EIR. The EIR will consider potential environmental effects of the proposed project to determine the level of significance of the environmental effect, and will analyze these potential effects to the detail necessary to make a determination on the level of significance.

Those environmental issues that have been determined to be less than significant will have a discussion that is limited to a brief explanation of why those effects are not considered potentially significant. (See CEQA Guidelines, § 15128.) In addition, the EIR may also consider those environmental issues which are raised by responsible agencies, trustee agencies, and members of the public or related agencies during the NOP process.

We need to know the views of your agency or organization as to the scope and content of the environmental information germane to your agency's statutory responsibilities or of interest to your organization in connection with the proposed project. Specifically, we are requesting the following:

1. If you are a public agency, state whether your agency will be a responsible or trustee agency for the proposed project and list the permits or approvals from your agency that will be required for the project and its future actions;
2. Identify significant environmental effects and mitigation measures that you believe need to be explored in the EIR with supporting discussion of why you believe these effects may be significant;
3. Describe special studies and other information that you believe are necessary for the City of Salinas to analyze the significant environmental effects, alternatives, and mitigation measures you have identified;
4. For public agencies that provide infrastructure and public services, identify any facilities that must be provided (both on- and off-site) to provide services to the proposed project;
5. Indicate whether a member(s) from your agency would like to attend a scoping workshop/meeting for public agencies to discuss the scope and content of the EIR's environmental information;
6. Provide the name, title, and telephone number of the contact person from your agency or organization that we can contact regarding your comments.

Due to the time limits mandated by State law, your response must be sent and received by the City of Salinas by the following deadlines:

- For responsible agencies, transportation planning agencies, and public agencies that have transportation facilities within their jurisdictions that could be affected by the project, not later than 30 days after you receive this notice.
- For all other agencies and organizations, not later than 30 days following the publication of this Notice of Preparation. The 30-day review period ends on October 9, 2017.

If we do not receive a response from your agency or organization, we will presume that your agency or organization has no response to make.

Because the project is one of statewide, regional, or areawide significance, the City of Salinas as lead agency is required to conduct at least one scoping meeting for the proposed project. (CEQA Guidelines, § 15082, subd. (c)(1).) A public scoping meeting will be held during the public review period as follows:

1. September 27, 2017 at 2-4pm in the City of Salinas Rotunda (located at 200 Lincoln Avenue, Salinas, CA 93901).

Please send your response to Jill Miller – Senior Planner at the City of Salinas, 65 West Alisal Street, Salinas, CA 93901. If you have any questions, please contact Jill Miller – Senior Planner at (831) 758-7206 or via email at jill.miller@ci.salinas.ca.us. The Central Area Specific Plan and environmental documents are available for review at the above address.

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INITIAL STUDY CHECKLIST

PROJECT TITLE

Central Area Specific Plan (CASP)

LEAD AGENCY NAME AND ADDRESS

City of Salinas
Community Development Department
65 W. Alisal Street
Salinas, CA 93901

CONTACT PERSON AND PHONE NUMBER

Jill Miller, Senior Planner
Community Development Department
City of Salinas
65 West Alisal Street (Second Floor)
Salinas, CA 93901
Telephone: (831) 758-7407
Fax: (831) 775-4258
Email: jill.miller@ci.salinas.ca.us

PROJECT SPONSOR'S NAME AND ADDRESS

Hugh Bikle, Hugh Walker, Matt Lewis, and Ray Harrod
c/o Hugh Bikle, Thrust IV, Inc.
1540 Constitution Boulevard
Salinas, CA 93906
Tel: (831) 443-0417
Fax: (831) 443-6535

PROJECT ENTITLEMENTS

The City of Salinas will be the Lead Agency for the proposed Central Area Specific Plan (hereinafter referred to as proposed project, Specific Plan, or CASP), pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050. Actions that would be required from the City include, but are not limited to the following:

- Certification of the Environmental Impact Report (EIR) and adoption of the Mitigation Monitoring and Reporting Program (MMRP); and
- Approval of the proposed Central Area Specific Plan (CASP)

An application for rezoning of the Specific Plan Area from New Urbanism Interim (NI) with a Specific Plan Overlay to the zoning designations laid out in the CASP within the applicable Specific Plan Overlay District has not been filed at this time, but is required to be filed. A Development Agreement application, Tentative Parcel Map application, and Vesting Tentative Tract Map application would also need to be filed.

However, the EIR will analyze the total impacts of the CASP, including these applications yet unfiled, so that future filings will not require separate environmental analysis as long as the development proposed does not substantially deviate from the approved CASP.

INTRODUCTION

The proposed CASP will establish the land use planning and regulatory guidance, including the land use and zoning designations and policies, development regulations, and design standards, for the approximately 760-acre Specific Plan Area. The Specific Plan will serve as a bridge between the Salinas General Plan and individual development applications in the Specific Plan Area, applying—and adding greater specificity to—the goals, policies and concepts of the General Plan for that area. The Specific Plan provides a complete blueprint for development of the Specific Plan Area, including:

- A description of proposed land uses;
- Policies, regulations and standards to support the Specific Plan;
- Infrastructure needed to support the Specific Plan; and
- Implementation and administrative processes needed for plan development.

The Specific Plan has been crafted to be consistent with overall community goals as expressed in the General Plan, as well as more specific policies and implementation measures contained in other documents. The City of Salinas Zoning Code requirements will apply to development applications and property within the Specific Plan Area unless specifically superseded by the development regulations or design standards contained in the Specific Plan.

The Specific Plan will establish the overall land use concept and development framework for the Specific Plan Area. The specific planning process involves the following analyses: planning, environmental, financial, and engineering. The process also includes public comment and contribution; developing a document that will guide the future development of the Specific Plan Area; and subsequent implementation measures recommended by the Specific Plan. The contents of the Specific Plan reflect the physical characteristics of the Specific Plan Area, as well as the City's goals for land use change in general and for the Specific Plan Area in particular. The Specific Plan establishes and/or identifies:

- The context for the Specific Plan by describing New Urbanism and other design principles, purpose, relationship to and conformance with the General Plan policies, the preparation process, and the content of the Plan.
- The proposed land use plan, General Plan Land Use and Zoning Designations, development intensities, and organization of land uses used to meet the objectives of the Specific Plan.
- The use classifications and development regulations to implement the land uses contained in the Specific Plan which will create a New Urbanism style community.
- The standards that guide design and planning of residential and commercial development, as well as parks and other amenities.
- The location and classification of roadways and the circulation infrastructure needed to link the Specific Plan Area to the vicinity road network.
- Public services and a description of a framework for expansion of infrastructure systems.
- The plans for low impact development features and the supplemental storm water collection system that are being incorporated into the project to comply with the City's National Pollutant Discharge Elimination System (NPDES) Permit, Storm Water Development Standards (SWDS) and Storm Water Standard Plans (SWSP).

- The proposed financing plan, project phasing, public facility cost summaries, and funding sources.
- The project review process, actions, and approvals needed to implement and amend the Specific Plan.

ENVIRONMENTAL IMPACT REPORT (EIR) TIERING

Section 15063(c)(3)(D) of the CEQA Guidelines states that a purpose of an Initial Study is to assist in the preparation of an EIR, if one is required, by identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects. Earlier analyses may be used where, pursuant to tiering, an effect has been adequately analyzed in an earlier EIR or negative declaration (ND).

The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) have been used as tiering documents for some topics within this IS (as discussed further throughout this IS). These documents are available for review in-person at the City of Salinas Community Development Department (65 West Alisal Street, 2nd Floor).

PROJECT LOCATION AND SETTING

The City of Salinas is located in northern Monterey County, within the Salinas Valley between the Gabilan and Santa Lucia mountain ranges. Salinas is situated approximately 20 miles northeast of the city of Monterey, 60 miles south of San Jose, 101 miles south of San Francisco and 325 miles north of Los Angeles, as illustrated in **Figure 1**. Several regional transportation routes and terminals are located within or near Salinas, including U.S. Highway 101 (U.S. 101), State Routes 68 (SR 68) and 183 (SR 183), the Union Pacific Railroad lines and the Amtrak Station (ITC), and the Monterey Regional Airport in Monterey. Salinas Municipal Airport, a general aviation facility, is located in the southeastern portion of the city.

The majority of the Specific Plan Area is located within the Salinas incorporated city limits and urban service boundary. However, a portion of the northwestern corner of the Specific Plan Area has not yet been annexed by the City, as shown in **Figure 2**. The Specific Plan Area is bounded by Natividad Road on the west, East Boronda Road (also referred to as "Boronda Road") on the south, Old Stage Road and the future extension of Constitutional Boulevard on the east, and the future extension of Russell Road on the north. U.S. 101 and North Main Street are located to the west. Unincorporated land under the jurisdiction of the County of Monterey abuts the Specific Plan Area to the north. The City and County General Plan land use designations for the surrounding areas are illustrated in **Figure 3**.

ASSESSOR PARCEL NUMBERS (APNS), PROPERTY OWNERSHIP, AND ZONING

The Specific Plan Area includes approximately 20 parcels and many property owners. Three of these parcels are located within the City's Sphere of Influence and the CASP, but are not currently annexed by the City. The current zoning within the Specific Plan Area is New Urbanism Interim (NI) with a Specific Plan Overlay.

SPECIFIC PLAN AREA PHYSICAL CHARACTERISTICS

The Specific Plan Area is currently agricultural land, consisting of row crop agriculture (see **Figure 4**). Two creeks cross through the Specific Plan Area: Gabilan Creek in the west and Natividad Creek in the east.

Natividad Creek has three tributaries that connect onsite and continue south. There is a designated 100-year flood zone per Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) along Gabilan Creek and Natividad Creek. These areas are currently located in FEMA Flood Zones A and AE. The remainder of the Specific Plan Area is located in FEMA Flood Zone X (shaded and unshaded).

The bluffs vary from approximately five feet to 30 feet above the creek floodplains. The bluff's slopes range between 20:1 and 4:1 (horizontal to vertical). However, the actual creek banks do experience slopes steeper than 4:1 in some instances. A 25-foot-high terrace near the middle of the CASP divides the two drainage basins. The Specific Plan Area generally slopes from a northerly to southerly direction towards Boronda Road. The overall topographic relief is approximately 76 feet, with a maximum elevation of approximately 146 feet above sea level at the northeast corner on Old Stage Road, and a minimum elevation of approximately 70 feet above sea level at Natividad Creek in the Boronda Road crossing.

Figure 5 provides an aerial view of the Specific Plan Area. Much of the Specific Plan Area has been heavily disturbed from its natural conditions as a result of years of cultivation. None of the parcels have Williamson Act contracts or other encumbrances protecting agricultural activities. According to maps produced by the State of California Farmland Mapping and Monitoring Program (FMMP), the Specific Plan Area is considered prime farmland, farmland of statewide importance, unique farmland, and/or other land. The loss of farmland has been addressed as part of the Environmental Impact Report for the Salinas General Plan. The City Council adopted findings and a statement of overriding considerations. The Specific Plan Area is not within an adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Urban development consists of several residences throughout the Specific Plan Area, several storage barns, a Pacific Gas & Electric (PG&E) subs-station near the northern boundary, and a drainage ditch near the eastern boundary. Three PG&E transmission lines are also located in the center of the Specific Plan Area. As noted previously, Natividad Creek traverses the eastern portion of the Specific Plan Area from north to south, and Gablan Creek traverses the western portion of the Specific Plan Area from north to south.

Existing infrastructure is currently located along Boronda Road, Hemingway Drive, and Constitution Boulevard, including water, sewer, overhead electricity, storm drainage, and natural gas utilities. PG&E currently operates a 12 kV overhead power line along Old Stage Road and Williams Road. A 12 kV underground primary line exists along Boronda Road. PG&E also maintains 112 kV transmission lines and corresponding easements along the northwest side of Old Stage Road, westerly along the proposed Russell Road alignment, and southerly down the middle of the Specific Plan Area. PG&E plans to install a substation near the intersection of the proposed Russell Road alignment and the central north to south transmission lines.

Monterey-Salinas Transit (MST) currently provides limited transit service in the vicinity of the Specific Plan Area. Three transit routes currently pass by the Specific Plan Area – Routes 4, 72, and 955, which currently provide transit service between the Salinas Transit Center located in Downtown Salinas and the Northridge Mall located along North Main Street. This route passes the Specific Plan Area along Boronda Road between Independence Boulevard and Natividad Road; however, there are currently no bus stop locations along this segment of Boronda Road. The existing bus stops closest to the Specific Plan Area are located along Independence Boulevard near Nantucket Boulevard and along Boronda Road near San Juan Grade Road.

Ambient noise levels are currently low except immediately adjacent to the surrounding arterial roadways and from noise associated with farming operations.

There is dust generated by farming activities such as tilling, and emissions associated with farming activities such as tractors and other motorized farming equipment within the Specific Plan Area. The Specific Plan Area is located in a non-attainment zone for the North Central Coast Air Basin.

ADJACENT LAND USE

North: Land to the north of the Specific Plan Area is currently used primarily for agricultural production with some scattered residences along Old Stage Road. Further to the north is the unincorporated community of Natividad, near the corner of the intersection of Old Natividad Road and Old Stage Road. Scattered residences and other non-residential uses are located within Natividad. These land uses are all located in the unincorporated area of Monterey County.

East: Land to the east of the Specific Plan Area is currently used primarily for agriculture. Across Boronda Road directly to the east and southeast, is the East Area Specific Plan. The portion of the East Area Specific Plan which abuts the Specific Plan Area is primarily residential. Development of the East Area Specific Plan is expected to include up to 4,000 dwelling units and 22 acres of village center/commercial uses.

South: Across Boronda Road directly to the south, is the Harden Ranch Specific Plan. The portion of the Harden Ranch Specific Plan which abuts the Plan Area is primarily residential. Additionally, two schools, Everett Alvarez High School and John Steinbeck Elementary School, are located to the south of the Specific Plan Area.

West: Across Natividad Road directly to the west, is the West Area Specific Plan. The portion of the West Area Specific Plan which abuts the Plan Area is primarily residential. Most of the residences are of the type associated with low density residential uses, mainly single-family detached homes. The area directly to the west is residential consisting of low, medium and high density residential uses. The West Area Specific Plan designates this land for Supplemental Storm Water Detention / Retention, Neighborhood Parks, Neighborhood Edge Residential (NE), Neighborhood General 1 Residential (NG-1), and Neighborhood General 2 Residential (NG-2). Also located farther to the west is Santa Rita Elementary School (Santa Rita Union School District) which is zoned Public/Semipublic (PS).

The City and County General Plan land use designations for the areas to the south and north of the Specific Plan Area, respectively, are illustrated in **Figure 3**.

PLANNING BACKGROUND

SPHERE OF INFLUENCE AMENDMENT, PRE-ZONING AND ANNEXATION

In 1986, the City entered into the Boronda Memorandum of Understanding (MOU) with the County of Monterey. The intent of the MOU was to preserve the best agricultural land located to the south and west of Salinas, and to provide certain areas for future urban growth. This future growth was to be predominantly in a northeasterly direction, between San Juan Grade Road to the northwest and Williams Road to the southeast.

In 2006, the Boronda MOU was replaced by the Greater Salinas Area MOU adopted jointly by the City Council and County Board of Supervisors. The intent of the MOU was to preserve agricultural lands within Monterey County, provide future growth areas for Salinas and provide adequate financing for services and facilities for the City and the County's Greater Salinas Area Plan area. Subsequent to the adoption of the MOU, the City of Salinas began the process of amending its Sphere of Influence to include the Future Growth Areas (FGAs) which are located generally to the north and east of the City. The portion of the FGA which is located generally north of Boronda Road, west of Williams Road, east of San Juan Grade Road and south of Rogge Road and the future extension of Russell Road is referred to as the North of Boronda FGA. In December 2007, applications for an amendment to the City's Sphere of Influence (to include the FGAs) and Pre-Zoning and Annexation (for the majority of the North of Boronda FGA consisting of approximately 2,400 acres) were submitted to the Monterey County Local Agency Formation Commission (LAFCO) for consideration. A Supplemental EIR for the Salinas General Plan Final Program EIR (SCH#2007031055) was also submitted in conjunction with the subject applications. The applications were approved by LAFCO on May 19, 2008.

The North of Boronda FGA was formally annexed to the incorporated City of Salinas on September 8, 2008 and zoned New Urbanism Interim (NI) with a Specific Plan Overlay District. The North Boronda FGA is inclusive of the CASP. However, a portion of the northwest corn of the CASP includes any area currently located outside of the current City of Salinas city limits. This area would be annexed by the City as part of the proposed project.

SPECIFIC PLAN INITIATION

Policy LU-4 of the Salinas General Plan requires the preparation of Specific Plans prior to development of any portion of the FGAs (which includes the North of Boronda FGA and the proposed CASP). The adoption of the CASP by the City is authorized by the California Government Code, Title 7, Division 1, Chapter 3, Article VIII, Section 65450 through 65457. The Specific Plan is also subject to the requirements of Article VI, Division 15: Specific Plans of the Salinas Zoning Code.

For planning purposes, the North of Boronda FGA has been generally divided by the City into three separate proposed Specific Plan Areas – the West Area (WASP), the Central Area (CASP) and East Area (EASP). A fourth Specific Plan (consisting of approximately 20 acres) known as the Gateway Center Specific Plan (GCSP) was carved out of the proposed WASP to facilitate the development of a large commercial center.

The three Specific Plan Areas are shown in **Figure 3**. To date, applications for Specific Plans have been submitted to the City for the WASP and CASP. Infrastructure development and circulation improvements have been coordinated among the WASP, CASP, and EASP Areas through the overall planning process.

PLANNING PROCESS

A majority of the CASP property owners and developers have been involved with and worked in a collaborative fashion to develop the proposed CASP. The General Plan identifies the level of development that would be allowable within the FGA (including the North of Boronda FGA and the CASP). Given this fact, the General Plan land uses, densities, goals and policies, the number of total housing units and mixed use/commercial floor areas and other factors were the starting point for the CASP planning process.

The General Plan requires that new development in the FGA be based on New Urbanism as well as other design principles to promote walkability and the use of alternative modes of transportation, provide a variety of housing choices, ensure access to parks and open space, promote sustainability, etc. To ensure preservation of agricultural land and to achieve the other benefits of compact urban design, the General Plan mandates that new residential development have a minimum average density of nine dwelling units per net residential acre and that this density not be achieved through an exclusive mix of low and high density units. As a method of ensuring a variety of housing choices, the General Plan further requires that 15%-25% of the housing units fall within the density range of 16 to 24 units per net residential acre and 35% to 45% of the housing units fall within the density range of seven to 14 units per net residential developable acre. These factors were also addressed in the planning of the CASP.

The actual distribution of land uses within the CASP is dependent on opportunities and constraints in the Specific Plan Area and the relationship between the CASP and surrounding developed and developing areas. Based on the above-stated factors, conceptual land use diagrams were prepared with the intent of implementing the General Plan within the CASP. More detailed maps and project description materials were then prepared to incorporate the City's direction and City staff review of the conceptual diagrams. The overall level of development in the CASP has been planned to match the level and type of development for the area anticipated in the General Plan. It is intended that upon approval of the CASP, the document will clearly direct all aspects of the physical development of the Specific Plan Area.

PROJECT DESCRIPTION

The following provides a summary of the proposed project and its key components.

PROJECT GOALS AND OBJECTIVES

The principal objective of the proposed project is the approval and subsequent implementation of the proposed CASP and related entitlements. The applicable Specific Plan Overlay District has not been filed at this time, but is required to be filed. A Specific Plan Overlay district will also apply to each zoning districts.

The CASP includes goals, which are a description of some desired future condition, as a basis for objectives, policies, implementation measures, and other tools used for achieving the goals. The goals for the CASP are based on the Salinas General Plan, especially as it applies to the FGA and the principles of New Urbanism developed by the City. The design principles of Crime Prevention through Environmental Design (CPTED), Smart Growth and Green building/streets are also included to promote the creation of a vibrant, healthy, walkable, safe and sustainable community. The City's National Pollutant Discharge Elimination System (NPDES) Permit, Storm Water Development Standards (SWDA) and Storm Water Standard Plans (SWSP) are also addressed in the design.

The CASP provides the community vision, land use plan, development regulations, design guidelines, and implementation measures to ensure development that is consistent with the goals, objectives, principles, and policies of the General Plan. The guiding principles used in development of the CASP were based upon relevant General Plan framework goals and land use, development and design policies, including the following:

- Use of innovative and imaginative site planning techniques in order to develop a sense of place where the amenities, facilities, and features exhibit an overall high level of urban design and architectural integration;
- A lively mix of residential, shopping and community services within a clearly defined Village Center;
- A clear, gradual transition, block by block, between high density, active Village Center and the low-density edges of the plan area;
- An advantageous and sensitive use of natural resource features and open spaces;
- Quality and craftsmanship in the built environment;
- The emphasis on the pedestrian rather than automobile, including the provision of pedestrian amenities and decorative street lighting;
- Tree-lined streets with houses with porches and other features to promote "eyes on the street";
- A variety of land uses and housing types throughout the community; and
- An interconnected bike lane and pathway network that encourages residents to frequently walk and bicycle to the various uses and facilities in their community.

LAND USE CONCEPT

The CASP was designed using the principles of New Urbanism and Traditional Neighborhood Development (TND). TND, also known as village-style development, represents a comprehensive planning system that includes a variety of housing types and land uses in a defined area. The variety of uses in TND permits educational facilities, civic buildings and commercial establishments to be located within walking distance of private homes. The TND concept applies only at the scale of the neighborhood or town, and should not be confused with New Urbanism, which encompasses all scales of planning and development, from the individual building to the entire region. The New Urbanism movement began in the 1970s as a reaction to suburban sprawl. New Urbanism is based on principles of planning and architecture that work together to create human-scale, walkable communities. The heart of New Urbanism is in the proper design of neighborhoods, which can be defined by the following elements:

- *Traditional Neighborhood Structure.* There is a discernable "Village Center" which provides a quality public realm with public open space designed as civic art. The traditional neighborhood also contains a range of uses and densities within a five to 10-minute walk to the Village Center.
- *Transect.* The highest densities are found at the Village Center and densities progressively reduce, block by block towards the edge of the plan. This transect ends at the edges of the plan and at a series of restored creek habitats.
- *Walkability.* The majority of the dwellings are within a five-minute walk of the Village Center. The street design is pedestrian-friendly (buildings close to the street; porches, windows & doors overlooking the detached 5- foot wide sidewalks with 8- foot wide planter strips, and tree-lined streets; on street parking; hidden parking lots; garages facing landscaped alleys placed behind the homes with somewhat narrower, curved, slower speed streets.
- *Grid Street System.* An interconnected street network disperses traffic and eases walking within the neighborhood. There is a hierarchy of interconnected curved narrow streets, boulevards, and landscaped alleys. A high quality pedestrian access network and public realm makes walking more

pleasurable. The plan provides an interconnected street system to increase walkability and bicycle access. No Cul-De-Sacs or looped streets are allowed as they greatly increase the pedestrian and bicyclist travel distance.

- *Mixed Use and Variety of Uses.* A mix of shops, offices, multi-family (e.g. apartments), and other higher density housing types are centrally located in the Village Center districts, and within the Neighborhood General districts located at the northeast corner of Natividad Road and East Boronda Road. This allows for a variety of shops and services within walking distance of everyone's home.
- *Mixed Housing Types and Lot Sizes.* Within the neighborhoods between the Village Center, and the open spaces and plan's Plan area edges, a variety of housing types, lot sizes and prices are intermixed within each block in these neighborhoods. This will provide a variety of housing options and promotes diversity amongst residents.
- *Quality Architecture and Urban Design.* Neighborhood design places an emphasis on beauty, aesthetics, human comfort, and creating a sense of place with special placement of civic uses such as schools, libraries, fire stations and open space sites within the community. Human scale architecture and beautiful surroundings nourish the human spirit.
- *Increased Density.* The clustering of residences, shops, and services closer together for ease of walking enables a more efficient use of services and resources, and creates a more convenient, enjoyable place to live.
- *Smart Transportation.* The pedestrian-friendly site design encourages a greater use of bicycles and walking as daily transportation. The Plan area also makes public transportation more convenient and accessible by providing bus pullouts with benches and shelters in close walking distance of all homes, businesses, schools, parks and open spaces.
- *Sustainability.* Promoting a reduced environmental impact incorporating eco-friendly technologies such as Leadership in Energy and Environmental Design (LEED) and Green Building, energy efficiency, such as Light Emitting Diode (LED) lighting, renewable energy sources, onsite water cleansing utilizing parcel based post-construction Low Impact Development (LID), best management practices to the maximum extent practicable, reducing storm water runoff by maximizing site based infiltration and detention practices and minimizing managed turf areas, restoring the Natividad and Gabilan Creek corridors which run through the project site with a greatly improved and enhanced riparian habitat and promoting walking more and driving less, all are components of a new urbanism sustainable community.
- *Quality of Life.* Taken together, these elements add up to a higher quality of life and create a place that enriches, uplifts, and inspires the human spirit.

SPECIFIC PLAN OVERLAY DISTRICT

The Salinas General Plan requires the approval of Specific Plans in the FGA areas prior to development of any land within each area. The Development Regulations and Design Standards not established through the Specific Plan shall be those established in the applicable regulations of the City of Salinas Zoning Code. Where there is a conflict between the Specific Plan and the Zoning Code, the Specific Plan prevails.

GENERAL PLAN LAND USES

In accordance with the General Plan, the Specific Plans for the FGA will specify the ultimate distribution, location and intensity of land uses in the FGA in accordance with the total development capacities provided under the General Plan for these areas. The Land Use Designations shown for land located within the FGA boundaries on the General Plan Land Use and Circulation Policy Map are provided for generally illustrative purposes, provide no land use entitlements, and are subject to adjustment and refinement as part of the Specific Plan approval process.

The General Plan Land Use Designations for the proposed CASP include Mixed Use, Residential Low Density, Residential Medium Density, Residential High Density, Public/Semipublic, Open Space and Park. These designations are consistent with the existing General Plan Land Use Designations for the Specific Plan Area. Upon approval of the CASP, the location distribution and intensity of these General Plan Land Use Designations shall be in accordance with the CASP's proposed land use plan. These Designations and the proposed Zoning Districts are described further below.

LAND USE COMPONENTS

The CASP proposes housing in a variety of densities that correspond with residential land use designations included in the General Plan as shown below. The density distribution will be in accordance with General Plan requirements of 15%-25% of the housing units to fall within the density range of 16 to 24 units per net residential acre and 35% to 45% of the housing units to fall within the density range of seven to 14 units per net developable residential acre.

As previously indicated, the Specific Plan Area is currently zoned New Urbanism Interim (NI) with a Specific Plan Overlay district. In conjunction with the approval of the CASP, the Specific Plan Area is expected to include the following districts. The corresponding General Plan Land Use Designations are also indicated.

Proposed Zoning Districts	**Existing General Plan Land Use Designations**
Neighborhood Edge (NE)	Residential Low Density
Neighborhood General (NG)	Residential Medium Density
Village Center (VC)	Mixed Use and Residential High Density
Open Space (OS)	Open Space
Park (P)	Park
Public, Quasi Public (PS), & Religious Assembly	Public/Semipublic

Figure 6 provides a Specific Plan/Illustrative map of the Specific Plan Area. The Specific Plan Area is designed to provide a gradual transition from the surrounding (primarily rural) land uses and the Plan Area core. The average density of each block within the residential areas gradually increases from the Neighborhood Edge zone's low-density boundary through the Neighborhood General zone, to the higher density Village Center zone.

Schools

The CASP falls within two elementary school districts and one high school district: Santa Rita Union Elementary School District, Alisal Union Elementary School District and the Salinas Union High School

District. The developers for the CASP worked with all three School Districts to identify each School District's needs in terms of elementary and middle schools. Three proposed school sites were chosen within the Specific Plan Area: one elementary school site within the Santa Rita Union School District; one Elementary school site within the Alisal Union School District (grades K-6); and one middle school site within the Salinas High School District (grades 7-8).

The three school sites within the Specific Plan Area comprise approximately 48 acres of land. The CASP Land Use Plan incorporates a traditional neighborhood approach to school design with respect to walkability, building orientation, parking locations, and play field orientation. The Santa Rita School District site will be reserved for purchase by the school district for 5 years after the approval of the CASP. The other two school sites are owned by the applicable school districts.

PG&E Substation and California Water Service Company Sites

The CASP includes an existing PG&E substation site in the north central portion of the Specific Plan Area, near the future extensions of Russell Road and Hemingway Drive, as shown in **Figure 4**. The expanded PG&E substation site will comprise of approximately 4.52 net acres of land within the Specific Plan Area, plus a 2.43 net acre 50-foot wide landscaped buffer surrounding the facilities. Also located within the expanded PG&E substation parcel will be one of two required California Water Service Company (Cal Water) wells, storage, and water treatment facilities. The other Cal Water well, storage and water treatment facility is located just east of the proposed Alisal Elementary School site. Both well and water treatment parcels have a landscape buffer/screening with an eight-foot high decorative masonry wall which will fully enclose both Cal Water sites.

Public Library and Fire Station

The CASP Land Use Plan designates an approximately 2.0-acre site in the Village Center for an approximately 22,000 square foot library with on-site parking for 88 cars, and a 2.0 net acre site for a new Fire Station at the northeast corner of the Southerly Greenway Street and Natividad Road.

Park and Open Space Linkages

Approximately 150 acres of land within the CASP are dedicated to parks, open space and landscaped promenade (with a minimum 10-foot sidewalk) that transect the entire Specific Plan Area. The diversity of park types provides a full range of recreational areas and aesthetic green spaces to be enjoyed by the CASP residents and the surrounding communities. The design standards for the CASP parks and open spaces will be subject to the City's Park Standards, which are currently being updated. Included within the Specific Plan Area are a variety of park types and sizes, ranging from large open space areas along the creek corridors to small parks, neighborhood parks, play fields, tot lots and public garden areas.

The CASP features two existing creeks. One is an agricultural drainage ditch and seasonal creek (Natividad Creek) and the other is a partially natural year-round creek corridor (Gabilan Creek). A carefully planned park, open space, drainage, detention and retention system that improves the existing topographic and biologic features at both corridors will provide the CASP with a unique open space network for both passive natural areas and active recreation and outdoor education areas.

The proposed trail/open space system creates one of the binding elements of the CASP. The trail corridors along Natividad Creek and Gabilan Creek, together with the strategically located pedestrian/bicycle connections and the promenades transecting the Specific Plan Area, provide the opportunity to link all neighborhoods to the mixed-use Village Center, parks, schools and retail and employment areas throughout the CASP community. The trail system would allow for an extensive network of linkages to smaller neighborhood parks, pocket parks and green spaces throughout the Specific Plan Area as well as to the other FGAs to the east and west and to the existing neighborhoods to the south. In addition, the natural drainage tributaries of Natividad Creek and Gabilan Creek, shown in **Figure 4**, are envisioned to be preserved and enhanced as natural ecological and recreational elements in the CASP's diverse open space system. A walking/biking trail system with activity "nodes" for picnicking, sitting, exercising or other activities will traverse the creek corridors, and provide connectivity with existing trails.

Internal Neighborhood Parks and Green Spaces

The CASP will include a parks and open space network and greenbelt connections within all residential density categories. Developers, in addition to designing and building the public parks and opens spaces on their land will also provide for each individual medium and high density project will provide their own internal systems of green spaces, tot lots and courts, garden sitting/strolling areas, entry features and other landscape elements according to the City's and this CASP's landscape design regulations and guidelines. Because each of the parks and green spaces within neighborhoods will be located and designed as visual and functional focal points within the neighborhood, the parks and open space systems will greatly enhance the visual nature, quality of life, and housing marketability.

Community centers, neighborhood recreation buildings, and other appropriate park-oriented structures are permitted and encouraged within the Specific Plan Area where practical. Design regulations, standards, and descriptions for these park types are included in the CASP and the City's Park Standards and Parks Master Plan Update.

Focal Parks

The CASP will incorporate sightlines, viewsheds and focal points throughout the community and neighborhoods. Elements such as connecting road alignments, open space corridors, park locations, park shapes and the geometrics of the Specific Plan Area physical layout would be orchestrated to reinforce a "sense of place" and pedestrian "connectivity" within this new community. The three focal park elements of the open space system are the Village Green, the Natividad and Gabilan Creek corridors, and the Southerly Greenway Promenade.

INFRASTRUCTURE, PUBLIC SERVICES, AND UTILITIES

Circulation Network

The WASP circulation system will include a roadway network, a pedestrian and bicycle network, and public transit. The CASP emphasizes ensuring connectivity between uses and on creating a safe and efficient circulation system that complies with City of Salinas policies. These design principles put an emphasis on facilitating increased daily pedestrian and bicycle trips by connecting residences in a safe and convenient grid system to public transit, public facilities, parks and neighborhoods, and to retail and employment opportunities. The proposed traditional neighborhood grid street layout provides for shorter walking/bicycling distances than the “modern” walled neighborhoods with limited access points.

The circulation system is designed to link with existing city and regional transit, street, bike and pedestrian systems, as well as the other planned developments for the other FGAs, the East Area and West Area Specific Plan Areas.

The proposed vehicular circulation plan aims to slow traffic within the neighborhoods while still allowing convenient and safe access to the new neighborhoods, as well as good linkages between the new neighborhood and the existing City. City street standards adopted for use in development of the FGA will be the basis for street development standards in the CASP. However, the CASP also emphasizes facilitating increased daily pedestrian trips by connecting residential neighborhoods to public facilities such as schools and parks, and to employment areas. As such, the street standards for the FGA will be supplemented in the Specific Plan with wide sidewalks, landscaped parkways, and other pedestrian-friendly circulation features.

The overriding concept of the “walkable neighborhood” suggests that the safe movement of pedestrians is critical. Visitors, workers and residents may arrive in the neighborhood by vehicles, but they quickly enter the realm of the pedestrian, who moves no more than four miles per hour. Although the street design focus must be on the pedestrian and bike, many types of transportation are accommodated and brought into balance within the proposed neighborhood streetscape. Limited lane widths, two-way traffic, on-street parking, tighter curb radii, narrow street crossings (bulb outs), speed tables (flat-topped speed bumps for traffic calming), small scale roundabouts, added stop signs, ample sidewalks, wide landscaped parks strips, and the promenade with homes and businesses facing the street, and minimizing driveways in front (which interrupt the sidewalk and result in cars parked in the front setback). These are all key elements of a walkable, pedestrian-first strategy. These standards will be established in the right-of-way’s of the Specific Plan Area in order to balance out its use by drivers, bicyclists and pedestrians. In the transition between Village Center and Neighborhood Edge, the ingredients of the street design vary by location to generate a quality of place and a character that varies from place to place within the neighborhood.

Public Transit

The primary public transit provider serving Salinas is Monterey-Salinas Transit (MST). The MST operates regionally from five key transit centers: the Monterey Transit Plaza, Salinas Transit Center, Watsonville Transit Center, Edgewater Transit Exchange in Seaside/Sand City, and Marina Transit Exchange. Each of these centers operates on a time-transfer "pulse" schedule providing easy connections and quick transfers to multiple routings.

MST currently provides limited transit service in the vicinity of the Specific Plan Area. MST would continue to provide transit opportunities near the Specific Plan Area; however, as noted above, transit access to the Specific Plan Area is currently limited and indirect, because of lack of development in the area. The high density apartment and retail components of the CASP and other nearby planned development of the FGA (including the East Area Specific Plan Area) would lead to an increased demand for transit in the Specific Plan Area.

Pedestrian Circulation

The CASP endeavors to encourage a walkable community by providing accessible and safe movement of pedestrians within the Specific Plan Area with access to the surrounding neighborhoods. Sidewalks will be provided along both sides of all internal streets, but not alleyways. Walkways through commercial areas will also extend the path of travel from sidewalks to access on-site destinations. ADA accessibility should be maintained through pedestrian path of travel and connections. Design of the Village Center will accommodate pedestrian circulation with 15-foot wide sidewalks and safe access routes to all proposed parking areas. Pedestrians will be able to access all buildings and uses within the Specific Plan Area. Sidewalks will be a minimum of five feet wide in residential areas and eight feet wide along school and park frontages.

The CASP will have a fully landscaped greenway (The Promenade) running along the entire length of the Southerly Greenway Street (from east to west). The Promenade will have a 12 to 14-foot wide Class I concrete pedestrian/bicycle route connecting the East and West Future Growth Areas through the Specific Plan Area.

Bicycle Circulation

The existing bicycle network in Salinas consists of Class I, II and III bikeways, which cover significant portions of north, south and east Salinas. A Class I bike path currently exists adjacent to Natividad Creek and under the PG&E tower lines adjacent to Hemingway Drive. As part of the proposed project, this Class I bike path is planned to be extended into the Specific Plan Area. Class II bike lanes currently exist and are planned to be extended around the Specific Plan Area on East Boronda Road, Constitution Boulevard, Independence Boulevard, Hemingway Drive, Natividad Road, Russell Road, and Old Stage Roads.

The CASP would encourage the use of alternative modes of transportation by incorporating bicycle and pedestrian friendly designs through an integrated system of roads, footpaths and bikeways. At buildout, bike lanes in the east-west direction are planned to be provided along both sides of the future Russell Road, Old Stage Road, and on the north side of the Southerly Greenway Promenade and along the north side of East Boronda Road. In the north-south direction, bike lanes are planned to be provided along Natividad Road, both creeks, and Constitution Boulevard.

Storm Drainage

The CASP storm water drainage system will need to meet a number of requirements from the City of Salinas, the County of Monterey, the State of California, and the federal government (including but not limited to the requirements contained within the City of Salinas Stormwater Development Standards, the City of Salinas Stormwater Program (SSWP), the National Pollution Discharge Elimination System (NPDES), and the applicable Storm Water Pollution Prevention Plans (SWPPP)). The requirements include Low Impact Development (LID) requirements, water quality treatment requirements, and hydro-modification mitigation requirements. In addition, the approach to mitigating storm water impacts will utilize site/parcel- based Post Construction Best Management Practices (PCBMPs) to the maximum extent practicable (MEP) to maximize infiltration and groundwater recharge, filter any storm water runoff to meet water quality requirements, reduce the cost of “grey” infrastructure in favor of “green” infrastructure and mitigate both the post-project peak storm water runoff rates and the post-project storm water runoff volumes, in order to not have a negative impact on any downstream facility.

The storm water conveyance and retention system would include an integrated network of open waterways and drains, pervious pavement, underground storm drain pipes, land along the creek corridors retention and detention basins and water quality basins, plus a wide range of PCBMPs and LID features.

Water Supply

Two privately owned public utility companies provide domestic water service to the City of Salinas: Alisal Water Corporation (ALCO) and Cal Water. The current division of service areas splits the CASP in half approximately along the PG&E towerline with ALCO serving the eastern half and Cal Water serving the western half. Both ALCO and Cal Water have produced or are currently in the process of producing Water Supply Assessments (WSA) per the requirements of Senate Bill 610 (Stats. 2001, ch. 643) (Wat Code, § 10910 et seq; see also CEQA Guidelines, § 15155).

Cal Water is a water utility that has been providing water service in the area since 1962. A single distribution system provides services to the City of Salinas and Bolsa Knolls while small hydraulically-isolated distribution systems provide services to the other communities. Cal Water issued a "Can and Will Serve" letter on October 31, 2014 indicating that they will provide water service to the proposed Specific Plan Area. Two Cal Water wells are planned be installed within the Specific Plan Area. The proposed system will tie into Cal Water's existing system on Russell Road, Rogge Road, Natividad Road, and East Boronda Road. Cal Water would serve the western half of the Specific Plan Area with 12-inch diameter and 16-inch diameter main trunk lines and 8-inch diameter distribution lines branching off the trunk lines and serving individual streets.

ALCO is a local water utility that has been providing water service since 1932. ALCO draws all of its water from the Salinas Valley Groundwater Basin; more specifically the East Side Aquifer. ALCO issued a "Can and Will Serve" letter on February 10, 2014 indicating that they will provide water service to the proposed Plan Area with their planned system upgrades. ALCO would serve the eastern half of the Specific Plan Area with 18-inch and 30-inch diameter main trunk lines and 12-inch diameter distribution lines branching off the trunk lines to serve the individual streets.

Water conservation will include utilizing site/parcel-based PC-BMPs to enhance storm water infiltration to the maximum extent practicable. This will enhance groundwater recharge and in turn, future available supply of potable water. Extensive use of native and naturalizing species is proposed where appropriate to reduce water demands. The CASP will implement a Water Conservation program requiring the use of low-flow toilets and shower heads, demand controlled irrigation systems, and other measures as required by the City. All landscaping and irrigation in the CASP will comply with the City's Water Conservation Ordinance, Water Efficient Landscape Ordinance and other requirements.

Sanitary Sewer System

The City of Salinas provides its residents with sewer collection facilities and maintenance. The Monterey Regional Water Pollution Control Agency (MRWPCA) provides regional wastewater conveyance, treatment, disposal, and wastewater recycling services to customers in northern Monterey County including the City of Salinas. The CASP sewer system will connect to the existing City of Salinas sewer infrastructure and will ultimately connect to the MRWPCA's system. The MRWPCA serves the City with the Salinas Pump Station and the Salinas interceptor.

The sewer system for the Specific Plan Area will consist of 8-inch to 12-inch pipes, designed in accordance with the City of Salinas design standards at the time of final design. The sewer mains will be public streets and private alleys with public service easements. The sewer mains will connect to the existing City of Salinas sewer system at two locations: the 10-inch sewer in Independence Boulevard, and the 18-inch sewer near Constitution Boulevard.

The sewer collection and conveyance system would entail a minimum of four creek crossings; one for Gabilan Creek and three for Natividad Creek and its tributaries. These creek crossings could require the use of siphons. The technical memorandum prepared by CDM Consultants suggests directing approximately 1.1 MGD of flow to the existing 24-inch sewer in McKinnon Drive (CDM Consultants 2007). This would require the construction of approximately 6,000 linear feet (LF) of offsite sewer pipe in Boronda Road from McKinnon Drive to Natividad Road and trigger the need for a pump station and 2,000 LF of force main in Boronda Road from Independence Boulevard to Natividad Road. Final design of the sewer system collection and conveyance system will be determined by the City, in coordination with CDM Consultants, based on potential impacts and a cost/benefit analysis.

Monterey Salinas Transit (MST)

MST would provide transit service to the CASP from bus stops located within the Specific Plan and along its perimeter. The current bus stops closest to the Specific Plan Area are located along Independence Boulevard near Nantucket Boulevard and along Boronda Road near San Juan Grade Road.

Electricity and Natural Gas

Pacific Gas and Electric Company (PG& E) provides electrical services to the City of Salinas and will provide this service to the Specific Plan Area. PG&E indicates that sufficient primary line power service exists in proximity to the Specific Plan Area. A 12kV underground primary line exists along Boronda Road that may be extended into the Specific Plan Area.

Existing PG&E transmission towers and corresponding easement extend through the center of the Specific Plan Area north of Hemingway Drive. They also border the Specific Plan Area along the north (future Russell Road) and along Old Stage Road. The proposed land uses will not disturb or impede access to any transmission tower. Also, structures will not be allowed underneath or within the swing zone of the transmission lines.

PG&E also provides natural gas service for the City and will provide gas service to the site. PG&E will need to extend their existing gas service from existing lines located on Boronda Road into the Specific Plan Area.

Telecommunications

Extension of existing underground networks adjacent to the Specific Plan Area (e.g. to the south) will be required to provide cable television, internet and telecommunication service to the Specific Plan Area. Dark fiber conduit will be installed at a minimum along and within all arterial streets within or fronting the Specific Plan Area.

Solid Waste Management and Recycling

Solid Waste generated within the Specific Plan Area is collected by Republic Services of Salinas and delivered to the Salinas Valley Solid Waste Authority (SVSWA) Transfer Station that then transports the collected refuse to the Johnson Canyon Landfill which SVSWA owns and operates by contract. It is estimated that the landfill has 30 years of disposal capacity to meet the need of current jurisdiction served by the landfill. SVSWA has proposed a comprehensive approach to providing for solid waste disposal needs of its member jurisdictions for approximately 70 years which includes increased waste division and materials recovery as well as the application of advanced technologies for processing solid waste. In addition to providing sufficient long-term capacity, the SVSWA facility improvements would increase the ability of SVSWA's member jurisdictions to achieve their Assembly Bill (AB) 939 diversion mandates.

PHASING

The Specific Plan Area is owned by approximately multiple entities. Almost all of these ownerships border one or more existing public streets that contain, or are planned to contain, most of the utility infrastructure necessary to support development. The CASP is designed such that each current institutional or individual owner may develop their property independent of development by other property owners. Agreement may be needed between two or more property owners to facilitate independent development by permitting any developing ownership to obtain from adjoining ownerships the access and easements necessary for roadways or utilities to support development of their individual property.

The public schools and public facilities will be constructed based on projections of the need for these facilities as the Specific Plan Area and surrounding area develop; the middle school site is expected to be developed first. Similarly, the Village Center will be constructed based on local and regional market demand for such retail and commercial services.

In general, phasing of residential development within these individual ownerships is projected to proceed from the surrounding arterial and collector streets toward the center of the Specific Plan Area. However, exceptions to this can occur for the development of a school or library, initiation of a community park, or development of a specific residential property. In such instances roads and utility infrastructure would be extended into the Specific Plan Area to serve those projects.

Each phase of the development will be graded and all erosion control measures will be required to be installed in accordance with a Storm Water Pollution Prevent Plan (SWPPP). Infrastructure improvements required for each phase will include but are not limited to all frontage improvements, storm drainage, sanitary sewer, water line, dry utilities (i.e. gas, electric, telecommunications, etc.) and other improvements as determined by the City to serve the needs of the subject phase and/or comply with the Mitigation Monitoring and Reporting Program (MMRP). The phasing of the small and neighborhood parks and certain public improvements could also be subject to a Development Agreement.

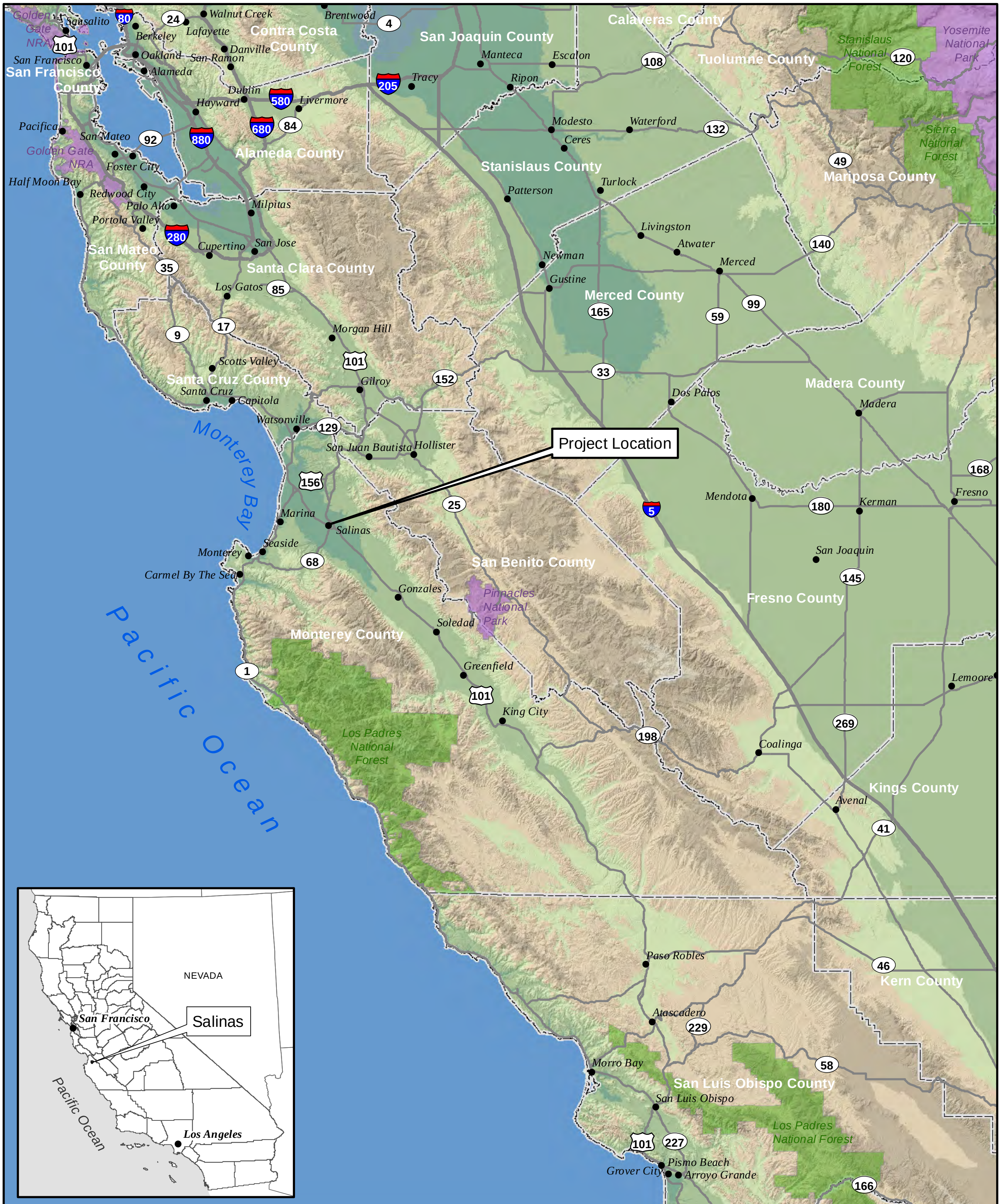
APPROVALS REQUIRED (E.G., PERMITS, ETC.)

The City of Salinas will be the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of the California Environmental Quality Act (CEQA), Section 15050. Actions that would be required from the City as lead agency include, but are not limited to the following:

- Certification of the Environmental Impact Report (EIR) and adoption of the MMRP.
- Approval of the proposed CASP.
- Rezoning of the Specific Plan area from New Urbanism Interim (NI) with a Specific Plan Overlay to Neighborhood Edge (NE)/Low Density Residential, Neighborhood General/Medium Density Residential), Village Center (VC), Public/Semipublic (PS), Parks (P) and Open Space (OS). A Specific Plan Overlay District is also applicable to each Zoning District.
- Tentative Parcel Map.
- Vesting Tentative Tract Map.
- Development Agreement.

Other governmental agencies serving as responsible or trustee agencies as defined by CEQA that may require approval include, but are not limited to, the following:

- Cal Water Service Company (Cal Water)
- Alisal Water Corporation (ALCO)
- Monterey County Local Agency Formation Commission (LAFCO)
- Transportation Agency for Monterey County (TAMC)
- Monterey-Salinas Transit (MST)
- Monterey Bay Air Resources District (MBARD)
- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (CALTRANS) - District 5
- California Public Utilities Commission (CPUC)
- Regional Water Quality Control Board (RWQCB) - Central Coast Region
- United States Army Corps of Engineers (USACE)



CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN

Figure 1: Regional Location Map

N

0 5 10

Miles

Sources: California Spatial Information Library; National Park Service. Map date: January 10, 2017.

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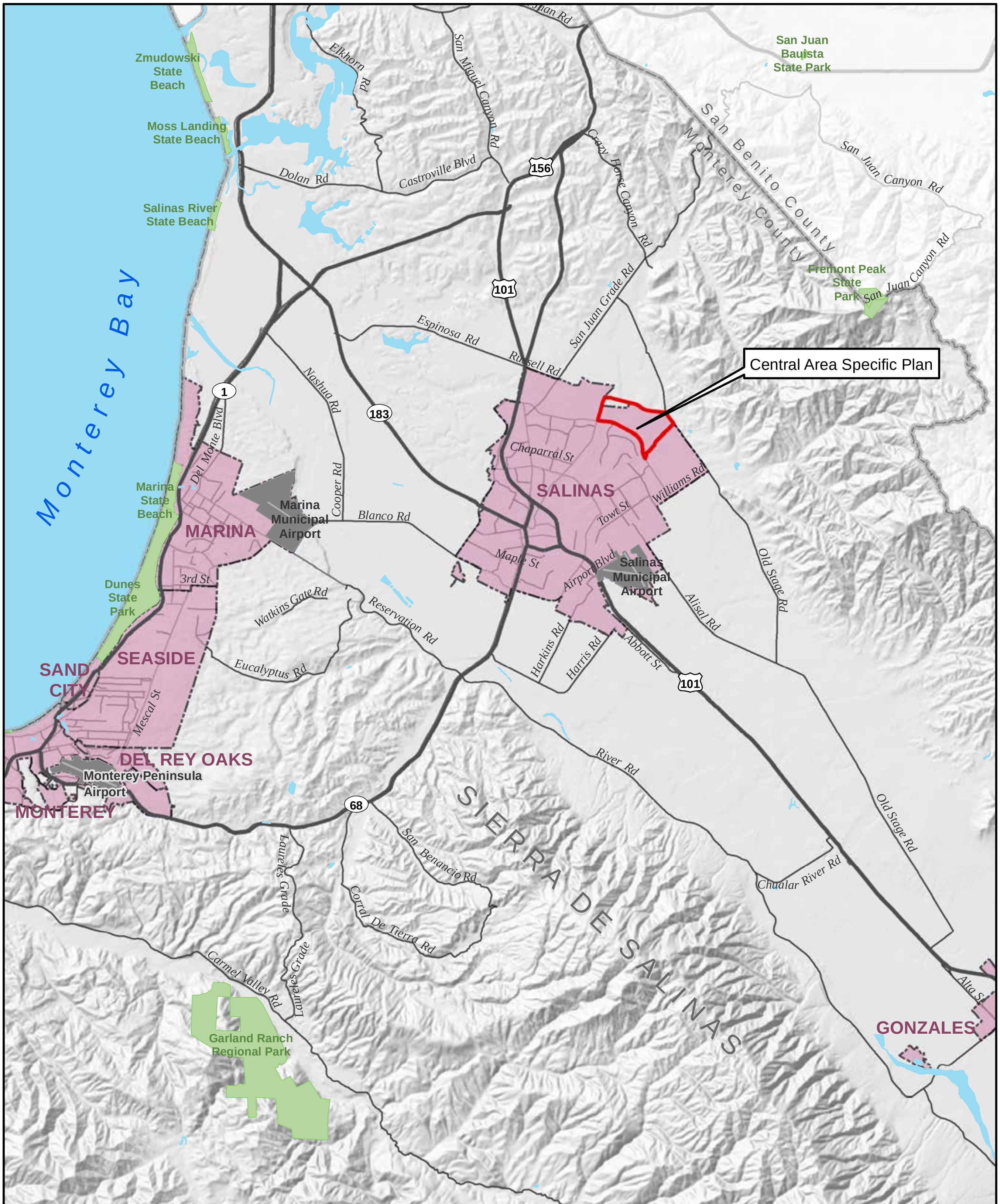

CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN

Figure 2: Vicinity Map

Legend

Central Area Specific Plan Boundary

N

0 1 2

Miles

Sources: California Spatial Information Library; ESRI StreetMap North America; Monterey County GIS. Map date: August 30, 2017.

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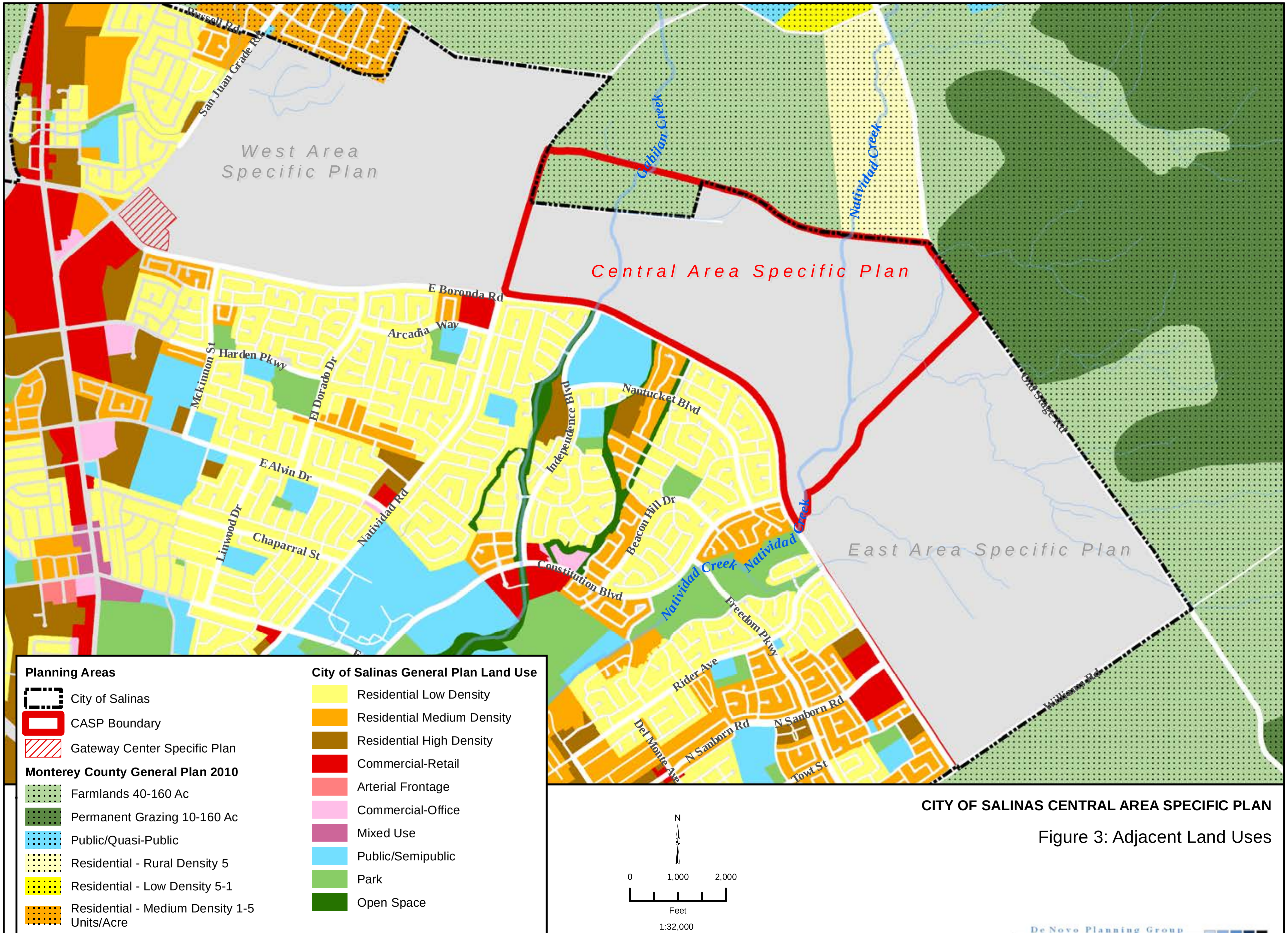

Sources: Monterey County GIS; City of Salinas. Map date: August 30, 2017.

CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN

Figure 3: Adjacent Land Uses

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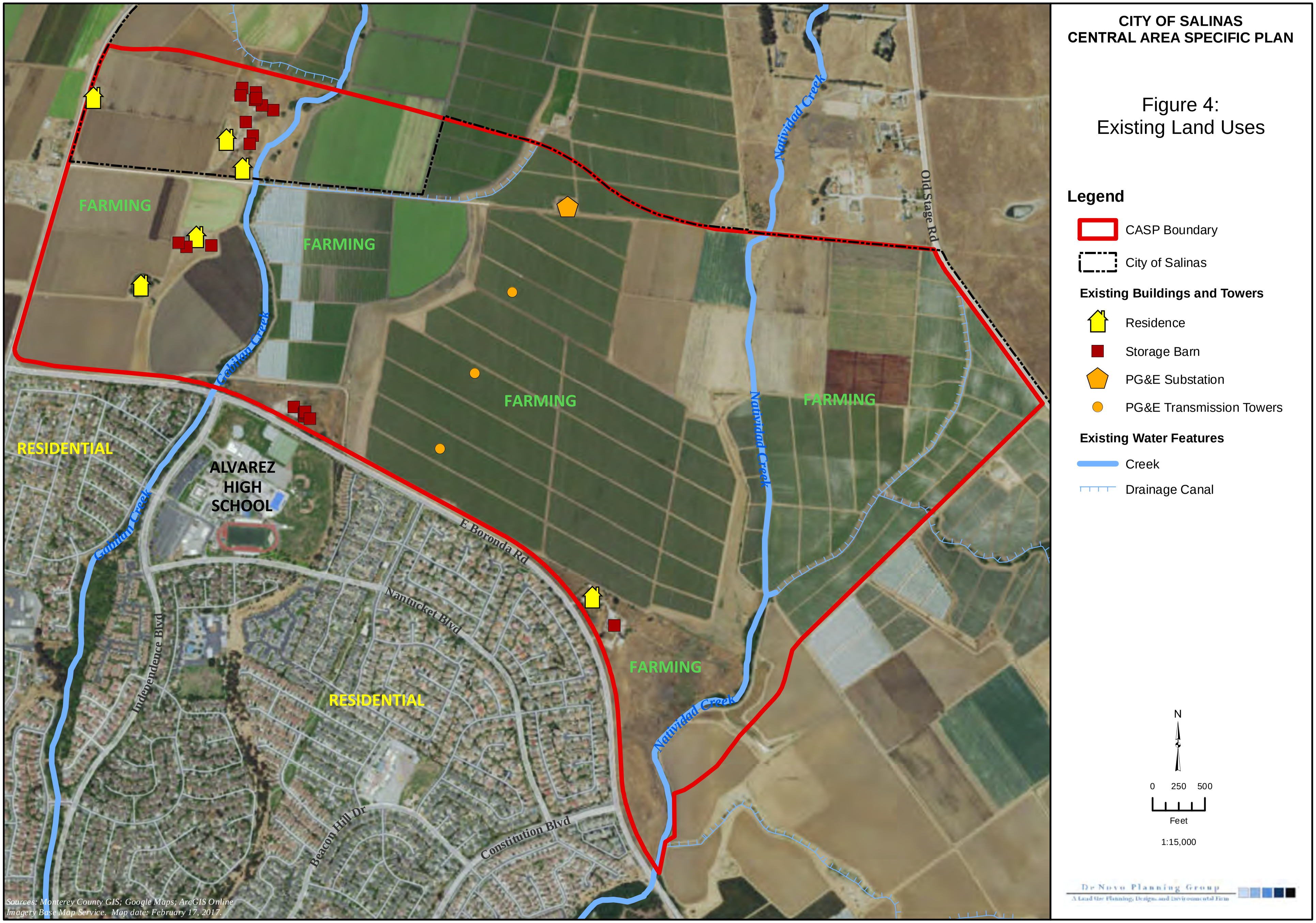
CITY OF SALINAS
CENTRAL AREA SPECIFIC PLAN
Figure 4:
Existing Land Uses
Legend
CASP Boundary
City of Salinas
Existing Buildings and Towers
Residence
Storage Barn
PG&E Substation
PG&E Transmission Towers
Existing Water Features
Creek
Drainage Canal
N
0 250 500
Feet
1:15,000
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FARMING
FARMING
FARMING
FARMING
FARMING
RESIDENTIAL
RESIDENTIAL
ALVAREZ
HIGH
SCHOOL
Old Stage Rd
Natividad Creek
Natividad Creek
Natividad Creek
Gabilan Creek
Gabilan Creek
E Boronda Rd
Nantucket Blvd
Independence Blvd
Beacon Hill Dr
Constitution Blvd
Sources: Monterey County GIS; Google Maps; ArcGIS Online
Imagery Base Map Service. Map date: February 17, 2017.

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CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN

Figure 5: Aerial View

Legend

CASP Boundary

City of Salinas

N

0 500 1,000

Feet

1:20,000

Sources: Monterey County GIS; ArcGIS Online Imagery Base Map Service. Map date: February 16, 2017.

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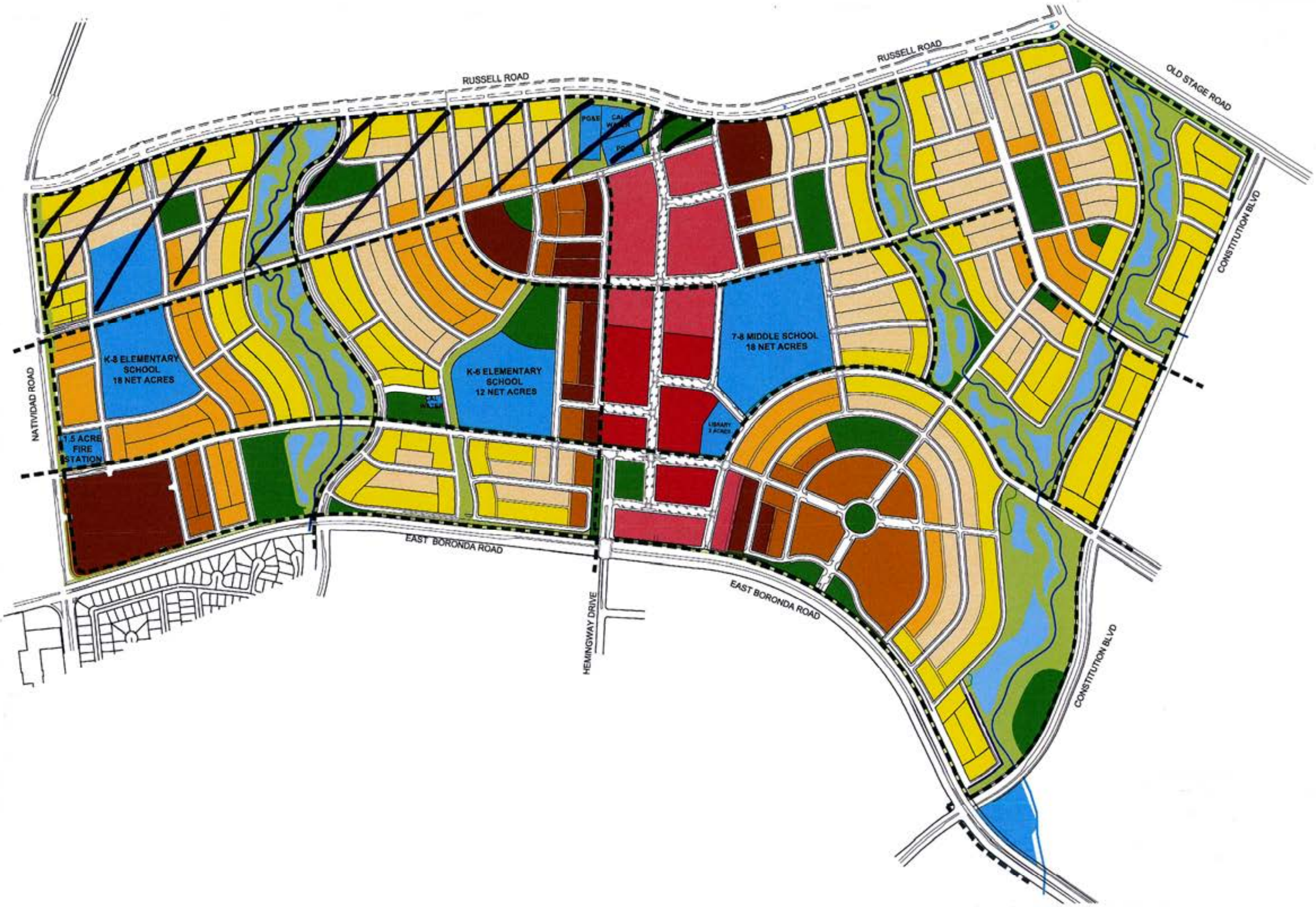

CITY OF SALINAS
CENTRAL AREA SPECIFIC PLAN

Figure 6.
Specific Plan/
Illustrative Map

Legend

- Village Center - B
- Village Center - A
- Neighborhood General - C
- Neighborhood General - B
- Neighborhood General - A
- Neighborhood Edge - B
- Neighborhood Edge - A
- Public, Quasi Public, Religious Assembly
- Parks
- Open Space/Paths
- Pedestrian Paths
- County (shown for conceptual planning purposes only)

N

0 250 500
Feet
1:16,000

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Sources: City of Salinas. Map date: September 7, 2017.

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics	X	Agriculture and Forestry Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources		Geology/Soils
X	Greenhouse Gasses	X	Hazards and Hazardous Materials	X	Hydrology/Water Quality
	Land Use and Planning		Mineral Resources	X	Noise
X	Population and Housing	X	Public Services		Recreation
X	Transportation/Traffic	X	Utilities/Service Systems	X	Tribal Cultural Resources
X	Mandatory Findings of Significance				

DETERMINATION

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
X	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed, or is within the scope of, in an earlier higher tier or programmatic document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program Environmental Impact Report (EIR), or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration (ND). Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of (§ 15168) or adequately analyzed (§ 15152) in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:

   a) The significance criteria or threshold, if any, used to evaluate each question; and

   b) The mitigation measure identified, if any, to reduce the impact to less than significance.

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ENVIRONMENTAL CHECKLIST

This section of the Initial Study (IS) incorporates the most current Appendix "G" Environmental Checklist Form, contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 18 environmental topic areas.

I. AESTHETICS

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Have a substantial adverse effect on a scenic vista?		*x*		
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		*x*		
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		*x*		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		*x*		

RESPONSES TO CHECKLIST QUESTIONS

Responses a) - d): Visual resources are generally classified into two categories: scenic views and scenic resources. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines that can be seen from a range of viewpoints, often along a roadway or other corridor. Scenic resources are specific features of a viewshed such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) identified several scenic elements including the following:

- Citywide Aesthetics
- Gateways
- Views from Highway 101
- Urban/Agricultural Edges
- Architectural Resources

Of the scenic elements provided above, the proposed project does not affect gateway areas to the City or views from Highway 101. These two topics are not discussed further, and will not be discussed in the EIR, but the other three scenic elements are discussed below.

Citywide Aesthetics: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that General Plan buildout would allow development to occur in both vacant and underdeveloped portions of the community, and that the introduction/expansion of urban uses into these areas has the potential to interrupt views of natural features, open space, the hillsides, and agricultural resources, reducing the aesthetic value of these resources. Additionally, new development in the City was found to increase the amount of light and glare in the community, particularly in areas planned for nonresidential development, such as retail and general commercial. It was found that future development under the General Plan has the potential to change the visual character of the City.

To minimize and mitigate the impacts on Citywide aesthetics, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following five mitigation measures: Mitigation Measure A1 requires the City to implement the City's Gateway Guidelines; Mitigation Measure A2 requires the City to strengthen and require compliance with the City's Design Guidelines; Mitigation Measure A3 requires the City to improve the Lighting Ordinance; Mitigation Measure A4 requires the City to implement landscaping requirements for all proposed projects; and Mitigation Measure A5 requires the City to review all discretionary projects for aesthetics impacts. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of Mitigation Measures A1 through A5, the potential citywide aesthetics impact would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that aesthetic impacts associated with the FGAs, which includes the CASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Urban/Agricultural Edges: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that General Plan buildout will allow development to occur on and adjacent to land used for agricultural operations. The expansion of development into these areas may modify certain areas of the community that currently have distinct urban/agricultural edges.

To minimize and mitigate the impacts on Urban/Agricultural Edges, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following six mitigation measures: Mitigation Measure A1 requires the City to implement the City's Gateway Guidelines.; Mitigation Measure A2 requires the City to strengthen and require compliance with the City's Design Guidelines; Mitigation Measure A5 requires the City to review all discretionary projects for aesthetics impacts; Mitigation Measure A6 requires the City to encourage the maintenance and provision of buffers between urban and agricultural uses; Mitigation Measure A7 requires the City to continue to implement the Boronda Memorandum of Understanding, which directs growth away from the most productive farmland in the Salinas Planning Area; and Mitigation Measure A8 requires the City to encourage City-centered growth through infill projects and incentives. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of these mitigation measures, the potential urban/agricultural edge impacts would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that aesthetic impacts associated with the Future Growth Areas (FGAs), which includes the Specific Plan Area, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

Any future development under the General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Architectural Resources: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted new development and rehabilitation projects may impact significant architectural resources in the community in two primary ways: 1) new development and rehabilitation projects may be proposed that would be architecturally and stylistically incompatible with existing architectural resources, detracting from the existing resources' aesthetic value and contributing to visual discontinuity in neighborhoods that have a concentration of significant architectural resources; and 2) new development and rehabilitation projects may be proposed that would result in the removal of significant architectural resources or that would modify the structure so that the aesthetic value of the structure is destroyed.

To minimize and mitigate the impacts on Urban/Agricultural Edges, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following three mitigation measures: Mitigation Measure A5 requires the City to review all discretionary projects for aesthetics impacts; Mitigation Measure A9 requires the City to expand participation in the California Main Street Program; and Mitigation Measure A10 requires the City to consider implementing a historic/architectural preservation program. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of these mitigation measures, the potential urban/agricultural edge impacts would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that aesthetic impacts associated with the FGAs, which includes the CASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

II. AGRICULTURE AND FOREST RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	x			
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				x
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				x
d) Result in the loss of forest land or conversion of forest land to non-forest use?				x
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), e): The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that General Plan buildout would result in the conversion of 3,525 acres designated for agriculture to urban uses. Much of the conversion of the agricultural land within the City limits would be for urban uses and parks. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) also indicates that General Plan buildout would result in agricultural activity in proximity to residential and other urban uses, which may result in conflicts between the uses. It is noted that agricultural activity can cause nuisances related to air quality and noise that may disturb surrounding development. Urban activities may also negatively affect nearby agricultural uses, as increased vandalism often occurs and the introduction of domestic animals may disturb certain agricultural activities.

The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that the City would work to preserve important agricultural lands located to the south and west of the City and within the Salinas Planning Area, and as part of the General Plan process, the community of Salinas indicated that land designated for future growth outside the City limits should be minimized to protect the valuable agricultural resources. The FGAs were established in the north of Salinas, north of Boronda Road, and east of the Salinas Municipal Airport, which are all located away from the best agricultural lands in the south and west. The proposed project is located within the North of Boronda Road Future Growth Area, which is one of the areas specifically identified for future growth. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) notes that a significant impact associated with the conversion of agricultural land in the Future Growth Areas (FGAs) to residential and other urban uses and potential compatibility issues are anticipated.

To minimize and mitigate the impacts from the conversion of agricultural land in the FGAs and potential compatibility issues, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following five mitigation measures: Mitigation Measure AG1 requires the City to continue to cooperate with the County of Monterey to implement the Greater Salinas Area Memorandum of Understanding (GSA-MOU), which directs City growth to occur generally to the north and east away from the most productive farmland; Mitigation Measure AG2 requires the City to give priority to redevelopment and infill projects that reduce development pressure on agricultural lands; and Mitigation Measure AG3 requires implementation of the "Right-to-Farm" Ordinance. This includes noticing residential development within 1,000 feet of an established agricultural operation that residents in the area may experience inconveniences and discomfort associated with the normal farming and grazing activities, such as noise and dust. The Notice specifically states that a variety of activities may occur that may be incompatible with the proposed development and that an established agricultural operation in full compliance with applicable laws, shall not be considered a nuisance due to changes in the surrounding area. The Notice also states that a person's right to recover under a nuisance claim against these activities may be restricted; and Mitigation Measure AG4 requires the City to encourage the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and nonagricultural land uses.

The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of Mitigation Measures AG1 through AG4, the impacts on potential compatibility issues would be reduced to a **less than significant** level; however, while the impacts on agricultural conversion would be reduced to the extent feasible, a **significant and unavoidable** impact would remain related to the loss of important farmland. Mitigation AG5 specifically addressed Agricultural Land Conservation Easement Program, which states that the City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank. Additionally, in 2006, the City Council adopted Resolution No. 19422, approving the Agricultural Land Preservation Program. The resolution adopted a per acre mitigation fee for agricultural lands currently designated by the California Department of Conservation's Farmland Mapping Program as "Prime" or "of Statewide Importance."

The City of Salinas certified the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002), adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the Salinas General Plan.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that agricultural impacts associated with the FGAs, which includes the CASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). The conversion of prime agricultural land is an impact within the scope of the programmatic analysis in the Final EIR and Final Supplemental EIR for the General Plan (see CEQA Guidelines section 15168, subdivision (c)). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Responses b): The Specific Plan Area is currently zoned New Urbanism Interim (NI); therefore, there are no conflicts with land zoned as farmland. The Specific Plan Area is not under a Williamson Act contract; therefore, there are no conflicts with Williamson Act contracts. These topics do not warrant additional analysis and will not be addressed further in the EIR. Implementation of the proposed project would have **no impact** relative to this environmental topic.

Responses c), d): The Specific Plan Area is currently zoned New Urbanism Interim (NI), and used exclusively for row crop/agricultural production; therefore, there are no conflicts with land zoned as forest land, timberland, or timber land production. The Specific Plan Area does not have any forest resources; therefore, there would be no loss of forest land or conversion of forest land to non-forest use. These topics do not warrant additional analysis and will not be addressed further in the EIR. Implementation of the proposed project would have **no impact** relative to these environmental topics.

III. AIR QUALITY

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?	x			
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	x			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	x			
d) Expose sensitive receptors to substantial pollutant concentrations?	x			
e) Create objectionable odors affecting a substantial number of people?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), c), d), e): Based on the current air quality conditions in the air basin, it has been determined that the potential impacts on air quality caused by the proposed project will require a detailed analysis in the EIR. Consequently, the lead agency will examine each of the five environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on air quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an air quality analysis that presents the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts on air quality. The project may result in short-term construction-related emissions and long-term operational emissions, primarily attributable to emissions from vehicle trips and from energy consumption by the residential and commercial uses. The Specific Plan Area is located within the jurisdiction of the Monterey Bay Air Resources District (MBARD). We will consult with the MBARD regarding the project's potential to cause impacts, and the applicability of the MBARD's Rules and Regulations. The air quality analysis will include the following:

- A description of regional and local air quality as well meteorological conditions that could affect air pollutant dispersal or transport in the vicinity of the CASP. Applicable air quality regulatory framework, standards, and significance thresholds will be discussed.
- Short-term (i.e., construction) increases in regional criteria air pollutants will be quantitatively assessed. The California Air Resources Board (ARB)-approved California Emissions Estimator

Model (CalEEMod) computer model will be used to estimate regional mobile source and particulate matter emissions associated with the construction of the proposed project.

- Long-term (operational) increases in regional criteria air pollutants will be quantitatively assessed for area source, mobile sources, and stationary sources. The ARB-approved CalEEMod computer model will be used to estimate emissions associated with the proposed project. Exposure to odorous or toxic air contaminants will be assessed through a screening method as recommended by the MBARD.
- Local mobile-source (carbon monoxide) (CO) concentrations will be assessed through a CO screening method as recommended by the MBARD. Mobile source CO concentrations will be modeled for signalized intersections expected to operate at unacceptable levels of service. If the screening method indicates that modeling is necessary, upon review of the traffic analysis, CO concentrations will be modeled using the Caltrans-approved CALINE4 computer model.

IV. BIOLOGICAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	x			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	x			
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	x			
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	x			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	x			
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), c), d), e), f): Based on the documented special status species, sensitive natural communities, wetlands, waters of the US, and other biological resources in the region, it has been determined that the potential impacts on biological resources as a result of the proposed project will require a detailed analysis. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on biological resources. At this point a definitive impact conclusion for each of these environmental topics will not be made; rather, all impacts are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will provide a summary of local biological resources, including descriptions and mapping of plant communities, the associated plant and wildlife species, special status species, and sensitive biological resources known to occur, or with the potential to occur in the project vicinity. This section will discuss the methodology, thresholds of significance, and a summary of local biological resources (terrestrial and aquatic), including descriptions and mapping of plant communities, the associated plant and wildlife species, and sensitive biological resources known to occur based on past or present observations, or with the potential to occur in the project vicinity based on habitat conditions. The information in this section will be based on field investigation(s), biological database searches, including a search of the California Natural Diversity Database (CNDDB), the California Native Plant Society's Electronic Inventory, the California Wildlife-Habitat Relationships database, an inventory of rare and endangered plants (California Department of Fish & Wildlife, 2017), and the United States Fish and Wildlife Service's list of special-status species with potential to occur in the region. The analysis will conclude with a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented in order to reduce impacts on biological resources and to ensure compliance with the Federal and State regulations.

V. CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	x			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	x			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	x			
d) Disturb any human remains, including those interred outside of formal cemeteries?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), c), d): Based on known historical and archaeological resources in the region, and the potential for undocumented underground cultural resources in the region, it has been determined that the potential impacts on cultural resources caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the four environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on cultural resources. At this point, a definitive impact conclusion for each of these environmental topics will not be made; rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a historical and prehistorical overview of the area, the potential for surface and subsurface cultural resources to be found in the area, the types of cultural resources that may be expected to be found, a review of existing regulations and policies that protect cultural resources, an impact analysis, and mitigation that should be implemented with each improvement project. The Northwest Information Center of the California Historical Resources Information System (CHRIS) and the Native American Heritage Commission (NAHC) will be contacted for file checks to identify known cultural, archaeological, and historic resources and sacred lands in the Specific Plan Area. Tribal consultation and consultation with local historical groups pursuant to SB 18 (Stats. 2002, ch. 905) and AB 52 (Stats. 2014, ch. 532) will occur as part of this work effort. The EIR section will provide an analysis including thresholds of significance, impact discussion, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with cultural resources.

VI. GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.		x		
ii) Strong seismic ground shaking?		x		
iii) Seismic-related ground failure, including liquefaction?		x		
iv) Landslides?			x	
b) Result in substantial soil erosion or the loss of topsoil?		x		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		x		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		x		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				x

RESPONSES TO CHECKLIST QUESTIONS

Responses a-i), a-ii), a-iii), c): The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicate that there are no Alquist-Priolo Earthquake Fault Zones within the City of Salinas. The analysis cites a high risk of seismic activity and other geologic hazards associated with earthquakes in Salinas due to the region being seismically active; however, the analysis also indicates that there are no active faults within the Salinas Planning Area.

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. According to the *Web Soils Survey* (Natural Resources Conservation Service 2017), the soils in the Specific Plan Area have a high sand content in the soils. Given the high sandy soils, combined with the region being seismically active, the potential for liquefaction is present within the Specific Plan Area.

To minimize and mitigate the risks associated with seismicity, *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following six mitigation measures: Mitigation Measure GS1 requires the City to assess development proposals for potential hazards pursuant to the California Environmental Quality Act (CEQA), requiring mitigation measures to mitigate all identified public safety hazards; Mitigation Measure GS2 requires the City to use open space easements, buffers, and other techniques when necessary to avoid public safety hazards; Mitigation Measure GS3 requires the City to implement the most recent geologic, seismic, and structural guidelines; Mitigation Measure GS4 requires the City during the review of development proposals involving grading, unstable soils, and other hazardous conditions, to require surveys of soils and geologic conditions be performed by a state licensed engineering geologist or civil engineer, where appropriate. Based on the results of the survey, design measures will be incorporated into projects to minimize geologic hazards; Mitigation Measure GS5 requires the City to implement the City's Multi-hazard Emergency Plan; and Mitigation Measure GS6 requires the City to coordinate with local agencies and organizations to provide emergency preparedness education and educational materials to its residents and businesses.

The City of Salinas requires a final geotechnical evaluation to be performed at a design level to ensure that the foundations, structures, roadway sections, sidewalks, and other improvements can accommodate the specific soils and anticipated seismic activity. The final geotechnical evaluation would include design recommendations to ensure that the combination of seismicity and soil conditions do not pose a threat to the health and safety of people or structures. In addition, all new construction in the City of Salinas is required to comply with the California Building Standards Code, which contains criteria and standards designed to reduce risks associated with seismicity to acceptable levels. In order to apply this code to site development, the City of Salinas requires that new construction be in accordance with building, grading and erosion control ordinances and include inspections during construction to ensure that design standards are met. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) found that the General Plan goals, policies, and implementation programs, in combination with the Alquist-Priolo Act, California Building Standards Code, and City of Salinas requirements, would reduce potential impacts associated with surface fault rupture, seismic shaking, and seismic ground failure, to a **less than significant** level.

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Responses a-iv): The overall topographic relief of the Specific Plan Area is approximately 76 feet, with a maximum elevation of approximately 146 feet above sea level at the northeast corner on Old Stage Road, and a minimum elevation of approximately 70 feet above sea level in Natividad Creek at the Boronda Road crossing. Two creeks cross through the Specific Plan Area: Gabilan Creek to the west and Natividad Creek to the east. The greatest elevation changes within the Specific Plan Area occur along these creeks. However, the Specific Plan Area would have no slopes located outside of the planned Open Space and/or Park land uses that could be subject to significant landslide. Therefore, the potential for landslides to cause substantial adverse effects to people or structure in the Specific Plan Area is highly unlikely. Implementation of the proposed project would have a **less than significant** relative to this topic, does not warrant additional analysis and will not be addressed further in the EIR.

Response b): The Specific Plan Area has a relatively low risk of landslides (a form of erosion). However, slopes adjacent to the Gabilan Creek and Natividad Creek are higher, and could undergo erosion under certain conditions. Additionally, all new development would require some land clearing, mass grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of a substantial amount of nonrenewable topsoil and could adversely affect water quality in nearby surface waters.

The Regional Water Quality Control Board (RWQCB) requires a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each project that disturbs an area one acre or larger. The SWPPPs include project specific best management measures that are designed to control drainage and erosion. Further, new construction in the Specific Plan Area would be required to comply with the City's National Pollutant Discharge Elimination System (NPDES) Permit requirements, the City's Storm Water Development Standards (SWDS), and City Public Works Standards, all of which are intended to reduce potential erosion impacts to a **less than significant** level.

To minimize the impacts on soil erosion and the loss of topsoil, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that development within the General Plan would potentially result in substantial soil and topsoil erosion from wind or water. The *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) provided mitigation for this impact that includes complying with MBARD guidelines to reduce emissions of fugitive dust and PM_{10} emissions. The *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) also identified that mitigation for this impact could also include performing geotechnical evaluations specific to the design of facilities to ensure that buildings and infrastructure is built safely. Site specific geotechnical evaluations will provide site specific design measures such as the soil compaction requirements, foundation designs, engineering fill requirements, and more specific design measures for each individual facility that is constructed.

Any future development under the proposed project would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan*

Final Program EIR (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Response d): Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of certain varieties of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections. The *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) identified that mitigation for this impact could include performing site-specific geotechnical evaluations to determine whether expansive soils would be a hazard.

The City of Salinas requires a final geotechnical evaluation to be performed at a design-level to ensure that the foundations, structures, roadway sections, sidewalks, and other improvements can accommodate the specific soils, including expansive soils. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Responses e): The proposed project would not result in the construction or installation of septic tanks or alternative waste water disposal systems. Instead, the proposed project would be served by wastewater collection, conveyance, treatment, disposal, and recycling services through the City of Salinas and Monterey Regional Water Pollution Control Agency (MRWPCA). The sewer system for the CASP would consist of 8-inch to 12-inch pipes, designed in accordance with the City of Salinas design standards at the time of final design. The sewer mains will be located in public streets and private alleys with public service easements. The sewer mains will connect to the existing City of Salinas sewer system at two locations: the 10-inch sewer in Independence Boulevard, and the 18-inch sewer near Constitution Boulevard.

Implementation of the proposed project would have **no impact** relative to this topic, does not warrant additional analysis and will not be addressed further in the EIR.

VII. GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	x			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Implementation of the proposed project could generate greenhouse gases (GHGs) from a variety of sources, including but not limited to vehicle trips, electricity consumption, water use, and solid waste generation. It has been determined that the potential impacts from GHG emissions by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from GHG emissions. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a GHG emissions analysis pursuant to the requirements of the California Governor's Executive Order S-3-05 and The Global Warming Solutions Act of 2006 (AB 32). The analysis will follow the California Air Pollution Control Officers Association (CAPCOA) white paper methodology and recommendations presented in "Climate Change and CEQA", which was prepared in coordination with the California Air Resources Board (CARB) and the Governor's Office of Planning and Research (OPR) as a common platform for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA. Also, a greenhouse emissions analysis using the Monterey Bay Air Resources District *CEQA Air Quality Guidelines* will be performed. These analyses will consider a regional approach toward determining whether GHG emissions are significant, and will present mitigation measures to reduce impacts. The discussion and analysis will include quantification of GHGs generated by the project using the California Emissions Estimator Model (CalEEMod) computer model as well as a qualitative discussion of the project's consistency with any applicable state and local plans to reduce the impacts of climate change.

The EIR will provide an analysis including the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with GHG emissions.

VIII. HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			x	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			x	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			x	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	x			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				x
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				x
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			x	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			x	

RESPONSES TO CHECKLIST QUESTIONS

Responses a-c): The proposed project includes the approval and subsequent implementation of an approximately 760-acre Specific Plan Area that includes residential, mixed use commercial, public facilities, parks, and open space which include supplemental storm water detention/retention basins. These uses are not expected to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Additionally, these uses are not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. While the proposed project includes three schools within the boundary of the Specific Plan Area, the land uses are not expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Implementation of the proposed project would have a **less then significant** impact relative to these topics.

Responses d): The EIR will include a hazards analysis with a screening-level of Phase II Environmental Site Assessment (ESA) (limited soil sampling). The hazards analysis will include a review of existing ESAs and any other relevant studies for the Specific Plan Area to obtain a historical record of environmental conditions. The analysis will also include a review of recent records and aerial photographs. A site reconnaissance will be performed to observe the Specific Plan Area and potential areas of interest. Public agencies will be interviewed to gather information on the current and historical use of the properties. If environmental conditions are identified, mitigation measures, as applicable, will be identified to address the environmental conditions.

This section will provide an analysis including the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with hazards and hazardous materials. At this point a definitive impact conclusion for this environmental topic will not be made, rather it is considered ***potentially significant*** until a detailed analysis is prepared in the environmental impact report.

Responses e-f): The proposed project is not located in the vicinity of an airport or private airstrip; therefore, it would not result in a safety hazard related to air traffic for people residing or working in the Specific Plan Area. Implementation of the proposed project would have **no impact** relative to this environmental topic.

Responses g): The City has adopted a Multi-hazard Emergency Plan, which serves as extensions of the California Emergency Plan and the Emergency Resource Management Plan. The purpose of the Multi-hazard Emergency Plan is to respond to emergency situations with a coordinated system of emergency service providers and facilities. The Emergency Operations Center (EOC) in Salinas serves as the center of the City's emergency operations. The Plan also addresses evacuation and movement of people in the event of an emergency. The proposed project does not impair implementation of or physically interfere with the Multi-hazard Emergency Plan. Implementation of the proposed project would have a **less than significant** impact relative to this environmental topic.

Responses h): The proposed project is not located in an area that is considered a high risk for wildfires. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Implementation of the proposed project would have a **less than significant** impact relative to this environmental topic.

IX. HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	x			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	x			
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	x			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	x			
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	x			
f) Otherwise substantially degrade water quality?	x			
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	x			
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	x			
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	x			
j) Inundation by seiche, tsunami, or mudflow?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-j): Flood hazards can result from intense rain, snowmelt, cloudbursts, or a combination of all three, or from failure of a water impoundment structure, such as a dam. Floods from rainstorms generally occur in this climate zone between November and April and are characterized by high peak flows of moderate duration. Human activities have an effect on water quality when chemicals, heavy metals, hydrocarbons (auto emissions and car crank case oil), and other materials are transported with storm water into drainage systems. Construction activities can increase sediment runoff, including concrete waste and other pollutants.

It has been determined that the potential impacts on hydrology and water quality caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the 10 environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on hydrology and water quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will present the existing Federal Emergency Management Agency (FEMA) flood zones and risk of flooding in the Specific Plan Area and general vicinity as well as summarize onsite hydrology and hydraulic calculations under existing and proposed conditions. The EIR will also evaluate the potential construction and operational impacts of the proposed project on water quality. This section will describe the surface drainage patterns of the Specific Plan Area and adjoining areas, and identify surface water quality in the Specific Plan Area based on existing and available data. This section will also identify 303D-listed impaired water bodies in the vicinity of the Specific Plan Area. Conformity of the proposed project to water quality regulations and the Specific Plan Area's potential to be inundated by seiche, tsunami, or mudflow, will also be discussed. Mitigation measures will be developed to incorporate BMPs, consistent with the requirements of the City of Salinas SWDS and Salinas NPDES permit with the CCRWQCB to reduce the potential for site runoff.

This section will provide an analysis including the methodology, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with hydrology and water quality.

X. LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?			x	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		x		
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				x

RESPONSES TO CHECKLIST QUESTIONS

Response a): Residential units are currently located within the Specific Plan Area (see **Figure 4**). These residential units would to be demolished during the development of the proposed project. However, the number of residential units within the Specific Plan Area is very small in comparison to the overall size of the Specific Plan Area. Additionally, development of the Specific Plan Area would facilitate physical access to and between nearby established communities, including the residential areas located to the south of the Specific Plan Area. Buildout of the proposed project would also provide access to the proposed developments that are planned to be located to the east and west of the proposed project Specific Plan Area (the other proposed developments of the North Boronda FGA, including the proposed West Area Specific Plan Area). Therefore, the proposed project would have a limited potential to divide an established community. Implementation of the proposed project would have a **less than significant** impact relative to this environmental topic.

Response b): The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that General Plan Land Use Plan assists in creating a balance between jobs and housing units within the City, and that a variety of land uses within the City of Salinas creates an important balance between the generation of public revenues and the provision of public services and facilities. Achieving and maintaining a balance of land uses ensures fiscal stability and also creates a desirable community in which people can live, shop, work, and recreate.

New Urbanism principles, a component of the General Plan Land Use Element, were used to design a land use plan that is compact and pedestrian-friendly, with a mixture of uses surrounding activity centers/neighborhood focal points in the CASP. Higher density residential uses are proposed around retail, recreation, and public uses and all of these core activity centers are proposed to be connected with pedestrian, bicycle, and transit systems.

The parcels located within the City's Sphere of Influence, but outside of the current City boundary, would be annexed to the City as part of the proposed project. The Specific Plan Area would be consistent with the expected intensity of development within the Specific Plan Area under General Plan buildout conditions as analyzed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that the General Plan may impact the related land use plans and policies that have been adopted to avoid or mitigate an environmental effect. The Salinas Zoning Code, Salinas Redevelopment Plan, Greater Salinas Area Plan, Salinas Municipal Airport Master Plan, Monterey County Airport Land Use Plan, and Greater Salinas Area Memorandum of Understanding, are specifically mentioned. Of these documents, the proposed project does not affect an existing Specific Plan, the Salinas Municipal Airport Master Plan, or the Monterey County Airport Land Use Plan, and the Salinas Redevelopment Plan is no longer in effect. These plans/policies/regulations are not discussed further, but the other three (i.e. the Salinas Zoning Code; the Greater Salinas Area Plan; and the Greater Salinas Area Memorandum of Understanding) are discussed below.

Salinas Zoning Code: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that implementation of the General Plan will change existing General Plan land use designations for certain parcels within the City and that existing zoning designations for those parcels may not be consistent with the new land use designations. A significant impact associated with the Zoning Code may occur where zoning on specific parcels is inconsistent with new General Plan land use designations for those parcels.

To minimize and mitigate the potential impacts, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented Mitigation Measure LU1, which requires the City to review and update the Zoning Code and Subdivision Ordinance to ensure consistency with the General Plan and to help implement the General Plan policies and New Urbanism principles. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of the mitigation measure, the impact would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that impacts associated with the FGAs, which includes the CASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). Mitigation AG5 specifically addressed Agricultural Land Conservation Easement Program, which states that the City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank. Additionally, in 2006, the City Council adopted Resolution No. 19422, approving the Agricultural Land Preservation Program. The resolution adopted a per acre mitigation fee for agricultural lands currently designated by the California Department of Conservation's Farmland Mapping Program as "Prime" or "of Statewide Importance." The City certified this EIR and approved annexation of the North of Boronda Future Growth Area, which includes the Specific Plan Area.

The Specific Plan Area is currently zoned New Urbanism Interim (NI) with a Specific Plan Overlay. The proposed project includes a rezone to the zones as provided within the CASP. The purpose of the rezone is to ensure consistency between the proposed General Plan Land Use Designations and Zoning. With the approval of the rezoning application, the Specific Plan would be consistent with the Salinas Zoning Code.

Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Greater Salinas Area Plan: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that implementation of General Plan will result in development outside the existing City limits, into the Greater Salinas Planning Area. Development occurring outside of the City limits is subject to the Greater Salinas Area Plan. The Greater Salinas Area Plan is a part of the Monterey County General Plan, and was first published in 1986. It was most recently updated in January 1996. The implementation of the City of Salinas General Plan may conflict with the Greater Salinas Area Plan, resulting in a significant impact.

To minimize and mitigate the potential impacts, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented Mitigation Measure LU2, which requires the City to be consistent with a portion of Draft Policy LU 3.4 of the Monterey County Draft General Plan, and to cooperate with LAFCO and the County of Monterey to direct growth outside the City limits to the Future Growth Area, on lands that are served or are planned to be served, with a full range of urban services, such as public water and sewer, an extensive road network, public transit, safety and emergency response services, parks, trails, and open space. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of this mitigation measure, the impact would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that impacts associated with the FGAs, which include the CASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). The City certified this EIR and approved annexation of the North of Boronda Future Growth Area, which includes the CASP.

The project as proposed is consistent with the Greater Salinas Area Plan. All development under the proposed project would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Greater Salinas Area Memorandum of Understanding (GSA-MOU): The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that implementation of General Plan will result in the eventual annexation of additional land to the City in order to accommodate future growth, and that annexed land will be converted from agricultural use to urban use.

To minimize and mitigate the potential impacts, the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) presented the following two mitigation measures: Mitigation Measure LU5 requires the City to continue to cooperate with the County of Monterey to implement the GSA-MOU, which directs that City growth generally to the north and east away from the most productive farmland; and Mitigation Measure LU6 requires the City to encourage City-centered growth and give priority to redevelopment and infill projects that reduce development pressure on agricultural lands. The City will also establish an incentive program to promote these projects, such as priority permit processing and density bonuses for such developments. The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of this mitigation measure, the impact would be reduced to a **less than significant** level.

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that impacts associated with the FGAs, which include the Specific Plan Area, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). The City certified this EIR and approved annexation of the North of Boronda FGA, which includes the CASP.

The project as proposed is consistent with the GSA-MOU. All development under the proposed project would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

Responses c): The Specific Plan Area is not within an area governed by an adopted habitat conservation plan or natural community conservation plan; therefore, there are no conflicts with a habitat conservation plan or natural community conservation plan. Implementation of the proposed project would have **no impact** relative to this environmental topic.

XI. MINERAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				x
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				x

RESPONSES TO CHECKLIST QUESTIONS

Response a-b): There is a quarry located in the northeastern portion of the Salinas Planning Area near the FGA, but outside of the Specific Plan Area. The quarry is designated by the State Division of Mines and Geology as an Aggregate Resource Area and has been mined for Dolomite deposits for many years. Mining activities are ongoing at this quarry facility, and are anticipated to continue for at least fifty (50) years. The proposed project does not conflict with the mining activities at this quarry and there are no other designated mineral resources or mining activities proximate to the Specific Plan Area. Furthermore, it was determined in the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) that development of the Future Growth Area, including the Specific Plan Area, would not have a significant impact on mineral resources or mining activities. As such, implementation of the proposed project would have **no impact** on mineral resources. This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

XII. NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	x			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	x			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	x			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	x			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	x			
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b), c), d), e), f): Based on existing and projected noise levels along roadways, and noise associated with construction projects, it has been determined that the potential impacts from noise caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the six environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact from noise. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a noise analysis. The noise analysis will identify the noise level standards contained in Monterey County and City of Salinas General Plan Noise Elements which are applicable to this project, as well as any germane, State, and Federal standards. Transportation, stationary, and community noise sources will be evaluated. Continuous (24-hour) and short-term noise measurements will be performed in the Specific Plan Area and in the project vicinity in order to quantify existing ambient noise levels from existing community noise sources. The noise study will provide an estimate of existing traffic noise levels adjacent to the Specific Plan Area roadways through application of accepted traffic noise prediction methodologies. Any significant noise sources other than local traffic within the Specific Plan Area will be identified and quantified through additional noise level measurements. The noise study will identify all significant noise impacts due to and upon development of the proposed project. The noise study will determine the land use compatibility of proposed commercial uses and facilities associated with public infrastructure, as it may affect existing noise sensitive receptors in the Specific Plan Area and in the immediate vicinity. An assessment of construction noise and vibration impacts and potential mitigation measures will also be provided. The study will present appropriate and practical recommendations for noise control aimed at reducing any noise impacts.

The EIR will include thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with noise.

XIII. POPULATION AND HOUSING

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	x			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				x
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				x

RESPONSES TO CHECKLIST QUESTIONS

Response a): It is anticipated that Specific Plan Area will have approximately 11,635 residents at project build-out (City of Salinas 2013). This level of development is consistent with the expected intensity of development within the Specific Plan Area under General Plan buildout conditions as analyzed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). The EIR will provide an analysis of the potential growth inducing impacts caused by the proposed project.

Response b,) c): The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that the General Plan would not result in the displacement of substantial numbers of existing housing units or persons since the majority of the FGA designated for future development consist of vacant, agricultural, or redevelopment of nonresidential land. Additionally, any individual units that require removal would be offset by the increase in housing by the development of approximately 18,397 dwelling units at General Plan buildout.

The proposed project would necessitate the removal of existing houses within the Specific Plan Area; however, any individual units that require removal would be offset by the increase in housing by the development of the additional dwelling units at Specific Plan buildout. As such, the proposed project would not displace substantial numbers of existing housing or people. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This EIR will utilize the earlier analysis of this topic provided in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) pursuant to the tiering requirements of CEQA. The EIR will address this topic in light of the previous impact conclusions in those certified EIRs, and will identify if there are any new impacts or mitigation measures to be considered. This topic will be addressed in a section of the EIR that focuses on topics that have a tiered analysis.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	x			
ii) Police protection?	x			
iii) Schools?	x			
iv) Parks?	x			
v) Other public facilities?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a) i-v): Implementation of the proposed project would result in increased demand for police and fire protection in the Specific Plan Area. The project may also increase demand for local schools, parks and other public facilities. It has been determined that the potential impacts from increased demands on public services caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the five environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant physical impact associated the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts to public services. A detailed analysis with adequate mitigation measures will be prepared in the EIR. This analysis will include the examination of public facilities impact fees as well as police, library and park fees.

During the preparation of the EIR, the public service providers will be consulted in order to determine existing service levels in the CASP. This would include documentation regarding existing staff levels, equipment and facilities, current service capacity, existing service boundaries, and planned service expansions. Master plans from such public service providers and City policies, programs, and standards associated with the provision of public services will be presented in the EIR.

The EIR will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with public services.

XV. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			x	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			x	

RESPONSES TO CHECKLIST QUESTIONS

Response a-b): The future residents and employees of the CASP are expected to increase demand for park and recreational facilities, some of which may increase the use of existing regional parks or other recreational facilities. However, much of the demand for park and recreational facilities will be met by the construction of new parks and recreational facilities within the boundary of the Specific Plan area. The new demand is not anticipated to cause substantial physical deterioration of existing facilities. The impacts from construction of new facilities will be analyzed within the context of each environmental topic of the EIR as part of the overall land use plan.

XVI. TRANSPORTATION AND TRAFFIC

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	x			
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	x			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				x
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	x			
e) Result in inadequate emergency access?	x			
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b, d-f): Based on existing and projected traffic volume levels along roadways, it has been determined that the potential traffic impacts anticipated as a result of the proposed project will require a detailed analysis in the EIR. As such, the City of Salinas will examine each of the five environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact from traffic. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is conducted in the EIR.

The EIR will include a Traffic Impact Analysis (TIA) to address the impacts of the CASP on the surrounding transportation system including the roadways, transit service, pedestrian facilities, and bicycle facilities. An analysis of vehicle miles travelled (VMT) associated with the proposed project is also under consideration to be included within the TIA. The TIA will be conducted to address compliance with the City's General Plan and other requirements under CEQA. It will be prepared following applicable guidelines of the City of Salinas, Monterey County, and Caltrans. The EIR will describe existing and future traffic conditions and will identify the trips that will be generated by the project and the projected distribution of those trips on the roadway system. The EIR will also analyze traffic impacts associated with the project under existing and cumulative conditions. Potential impacts associated with site access, on-site circulation, and parking will be addressed in the EIR. Lastly, the EIR will provide an analysis of overall vehicle miles travelled (VMT) associated with the proposed project.

The TIA will include an evaluation of existing conditions, future conditions, cumulative conditions, cumulative plus project conditions, access and circulation, and project alternatives. Future conditions will be evaluated with the use of a travel model being developed by City traffic staff and AMBAG. Significant impacts will be identified in accordance with the established criteria, and mitigation measures will be identified to lessen the significance of impacts.

The EIR will provide an analysis including the thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with transportation/traffic.

Responses c): The proposed project is not located in the vicinity of an airport or airstrip; therefore, it would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Implementation of the proposed project would have **no impact** relative to this environmental topic.

XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	x			
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	x			

BACKGROUND

Assembly Bill 52 (AB 52) requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. The City of Salinas has received requests from three California Native American tribes to be informed through formal notification of proposed projects in the City's geographic area.

RESPONSES TO CHECKLIST QUESTIONS

Responses ai-aii): Based on known historical and archaeological resources in the region, and the potential for undocumented underground tribal cultural resources in the region, it has been determined that the potential impacts on tribal cultural resources caused by the proposed project will require consultation with tribal leaders in accordance with AB 52 and a detailed analysis in the EIR. The lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on tribal cultural resources. Refer to the *Cultural Resources* section of this IS/MND. At this point, a definitive impact conclusion for each of these environmental topics will not be made; rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

XVIII. UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	x			
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	x			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	x			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	x			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	x			
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	x			
g) Comply with federal, state, and local statutes and regulations related to solid waste?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-g): Implementation of the proposed project would result in increased demands for utilities to serve the project. As such, the City of Salinas will examine each of the seven environmental issues listed in the checklist above in the EIR and will decide whether the proposed project has the potential to have a significant impact on utilities and service systems. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will analyze wastewater, water, and storm drainage infrastructure, as well as other utilities (i.e., solid waste, gas, electric, etc.), that are needed to serve the proposed project. The wastewater assessment will include a discussion of the proposed collection and conveyance system, treatment methods and capacity at the treatment plants, disposal location(s) and methods, and the potential for recycled water use for irrigation. The EIR will analyze the impacts associated with on-site and off-site construction of the conveyance system, including temporary impacts associated with the construction phase. The proposed infrastructure which will likely include a system of gravity pipes, pump station(s) (only as absolutely required), and a forcemain(s), will be presented. The EIR will provide a discussion of the wastewater treatment plants that are within proximity to the Specific Plan Area, including current demand and capacity at these plants. The analysis will discuss the disposal methods and location, including environmental impacts and permit requirements associated with disposal of treated wastewater. The EIR will also address the potential for the use of recycled water for irrigation to the extent allowed by the City's Waste Discharge Permit issued by the Monterey Regional Water Pollution Control Agency (MRWPCA).

The storm drainage assessment will include a discussion of the proposed drainage collection system including impacts associated with on-site and off-site construction of the storm drainage system, including temporary impacts associated with the construction phase. The EIR will identify permit requirements and mitigations needed to minimize and/or avoid impacts. The proposed infrastructure will be presented. This will likely include a system of gravity pipes, storage basin(s), pump station(s) (only as absolutely required), and forcemain(s). This section will include a consistency review of the storm drainage system with the City's Storm Water Master Plan (SWMP) and an analysis of the potential for storm drainage impacts.

The EIR will include an assessment of project water demand and supply. Water Supply Assessments are being prepared by both Cal Water and ALCO, for both of their respective service areas within the Specific Plan Area. In addition, information from the 2007 Final Supplement for the Salinas General Plan Final Program EIR and Cal Water's 2015 or later Urban Water Management Plan (UWMP) will be used in determining the available water supplies to meet the demands under normal, single-dry, and multiple-dry year conditions. The EIR will identify whether the City has sufficient supplies and supply reliability to meet the water demand associated with the proposed project.

The EIR will also address solid waste collection and disposal services for the proposed project. This will include an assessment of the existing capacity and project demands. The assessment will identify whether there is sufficient capacity to meet the project demands.

The EIR will provide thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts associated with utilities and service systems.

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species or eliminate important examples of the major periods of California history or prehistory?	x			
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	x			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	x			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-c): It has been determined that the potential for the proposed project to: degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; eliminate important examples of the major periods of California history or prehistory; create cumulatively considerable impacts; or adversely affect human beings will require more detailed analysis in an EIR. As such, the City of Salinas will examine each of these environmental issues in the EIR and will decide whether the proposed project has the potential to have significant impacts on these environmental issues. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

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REPORT PREPARERS

This document was prepared by De Novo Planning Group under the direction of the City of Salinas. De Novo Planning Group staff participating in document preparation included the following:

- Steve McMurtry, *Principal Planner*;
- Ben Ritchie, *Principal Planner*;
- Beth Thompson, *Principal Planner*;
- Josh Smith, *Associate Planner; and*
- Elise Carroll, *Associate Planner.*

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Ohlone/Costanoan-Esselen Nation

Previously acknowledged as
The San Carlos Band of
Mission Indians
The Monterey Band
And also known as
O.C.E.N. or Esselen Nation
P.O. Box 1301
Monterey, CA 93942

www.ohlonecostanoanesselennation.org.

April 22, 2017

Neal Neuenschwander
Staff Archaeologist
Peak & Associates, Inc.
3161 Godman Ave.
Chico, CA 95973

Re: City of Salinas, Central Area Specific Plan (CASP) Study

Saleki Atsa,

Ohlone/Costanoan-Esselen Nation is an historically documented previously recognized tribe. OCEN is the legal tribal government representative for over 600 enrolled members of Esselen, Carmeleno, Monterey Band, Rumsen, Chalon, Soledad Mission, San Carlos Mission and/or Costanoan Mission Indian descent of Monterey County. Though other indigenous people may have lived in the area, the area is the indigenous homeland of our people. Included with this letter please find a territorial map by Taylor 1856; Levy 1973; and Milliken 1990, indentifying Tribal areas.

Ohlone/Costanoan-Esselen Nation objects to all excavation in known cultural lands, even when they are described as previously disturbed, and of no significant archaeological value. Please be advised that it is our first priority that our ancestor's remains be protected and undisturbed. We desire that all sacred burial items be left with our ancestors on site or as culturally determined by OCEN. All cultural items returned to Ohlone/Costanoan-Esselen Nation. We ask for the respect that is afforded all of our current day deceased, by no other word these burial sites are cemeteries, respect for our ancestors as you would expect respect for your deceased family members in today's cemeteries. **Our definition of respect is no disturbance.**

OCEN's Tribal leadership desires to be provided with archaeological reports/surveys, including subsurface testing, and presence/absence testing. OCEN request to be included in mitigation and recovery programs, reburial of any of our ancestral remains, placement of all cultural items, and that a Native American Monitor of Ohlone/Costanoan-Esselen Nation, approved by the OCEN Tribal Council be used within our aboriginal territory.

OCEN **requests consultation on <u>all projects</u> affecting our aboriginal homelands, <u>which include all ground disturbance</u>** (not limited to ground disturbance). It is our request to consult with Lead Agencies on projects to establish a procedure, 1. provide OCEN with all reports, 2. establish procedure for disturbance of unknown sites, 3. procedure for known sites, etc.

Please feel free to contact me at (408) 629-5189 and we can make an appointment to begin the consultation process. Nimasianexelpasaleki. Thank you for your attention to this matter.

Sincerely and Respectfully Yours,

Louise J. Miranda Ramirez

Louise J. Miranda Ramirez, Chairperson
Ohlone/Costanoan-Esselen Nation
(408) 629-5189

Cc: OCEN Tribal Council

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

April 5, 2017

Louise Miranda-Ramirez, Chairperson
Ohlone/Coastanoan-Esselen Nation
P.O. Box 1301
Monterey, CA 93942

Subject: City of Salinas, Central Area Specific Plan (CASP) Study

Dear Honorable Chairperson Miranda-Ramirez,

The Town of Salinas has identified a 760 acre area in the eastern portion of the community as the Central Area Specific Plan (CASP) project. The CASP project will establish the land use and zoning designations and policies, development regulations and design standards. The CASP project will serve as a bridge between the Salinas General Plan and individual development applications within the CASP area. The City of Salinas has asked us, as part of the De Novo Planning Group Environmental Impact Report team, to contact individuals and organizations listed with the Native American Heritage Commission on their behalf who may wish to engage in consultation with the Town.

Government Code Sections 65352 and 65352.3 (SB 18)
The California Government Code establishes responsibilities for local governments to contact, provide notice to, refer plans to, and consult with tribes.. The following list briefly identifies the contact and notification responsibilities of local governments, in sequential order of their occurrence.

Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code §65352.3).

Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45 day comment period (Government Code §65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.

Local governments must send notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code §65092).

Summary

You are invited to provide information regarding sites, traditional cultural properties, values, or other resources considerations within the CASP Study Area and are invited to recommend mitigation measures so that this information may be incorporated into the planning phase of the project. Please note that this is not a request or solicitation for paid consultation services.

A USGS topographic map with the CASP Plan Study Area delineated is attached with this letter. If you wish to consult with the Town of Salinas during the CASP study process, please don't hesitate to contact Neal Neuenschwander, Staff Archeologist, Peak & Associates, Inc., 3161 Godman Avenue, Chico, CA 95973, (530) 342-2800, peakinc@yahoo.com and we will forward your request to the Town of Salinas. Thank you for your time reviewing this letter and attached map.

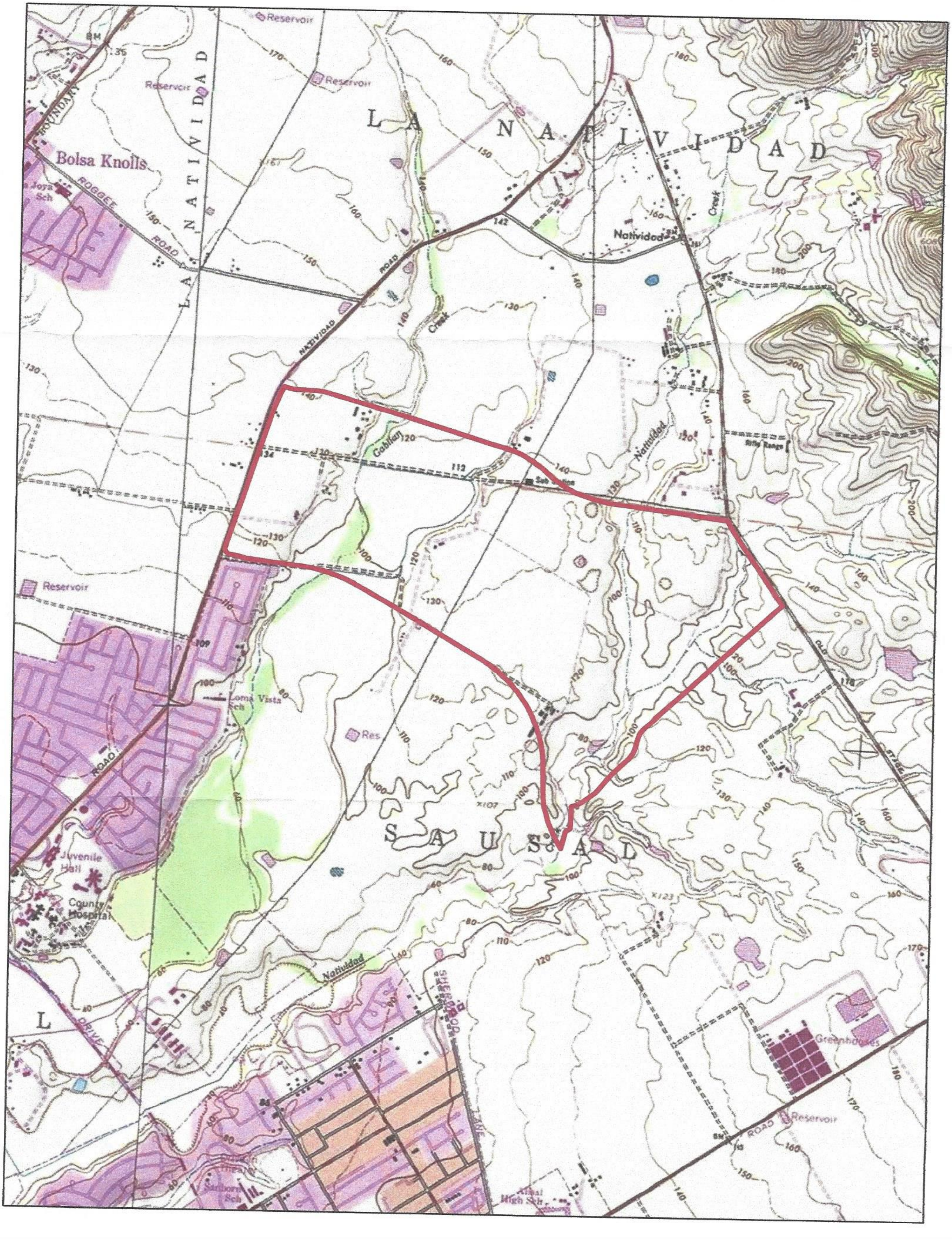
Sincerely,

Neal Neuenschwander

Neal Neuenschwander

Staff Archeologist

Enclosure: Topographic map, Central Area Specific Plan (CASP) Study Area



LA NATIVIDAD
Bolsa Knolls
Reservoir
Natividad
Creek
Gabilan
Sausal
Loma Vista Sch
Juvenile Hall
County Hospital
Greenhouses
Rifle Range
Res
NATIVIDAD ROAD
ROGGEE ROAD
Alisal High Sch
Sanborn Sch

September 25, 2017

Jill Miller, Senior Planner
City of Salinas
Community Development Department
65 West Alisal Street (Second Floor)
Salinas, CA 93901

RE: MST Comments Regarding the NOP for the Salinas Central Area Specific Plan and EIR

Dear Ms. Miller:

Monterey-Salinas Transit appreciates the opportunity to comment on the Notice of Preparation and Initial Study for the Salinas Central Area Specific Plan (CASP) dated September 7, 2017. MST provides the following comments to help address transit-related items while the EIR is being prepared.

On page 4 of the Initial Study, the last paragraph identifies routes 4, 72, and 955 as passing by the Specific Plan area. Please correct these numbers as MST line 4 serves Carmel Rancho-Carmel and MST does not operate any line 955. Lines operating on Boranda Road between Independence and Natividad are 45, 72, and 95.

On page 13, under *Public Transit*, first paragraph, please change Edgewater Transit Exchange to Sand City Station. On the next paragraph, please note that MST may provide transit service to the area should funding become available to serve the new development. Should the developer desire transit service, funding and transit supportive infrastructure must be in place before transit service is provided.

On page 16, under Monterey-Salinas Transit (MST), it is presumptive to conclude that "MST would provide transit service to the CASP from bus stops located within the Specific Plan and along its perimeter" without identifying the funding source to support it. During the EIR preparation, MST recommends that the project proponent identify a funding mechanism to pay for the additional service identified in the CASP. Without a funding source, MST would be required to take away service from another route to provide service to this new development.

Lastly, MST recommends that the EIR demonstrate how the transit components within the CASP connect with the planned transit routing and stops in the West Area Specific Plan. MST worked with the West Area Specific Plan developer and planned future infrastructure and transit service in a thoughtful way.

In order to help developers plan for better transit services, MST prepared a Designing for Transit manual which is available on our website at: https://mst.org/wp-content/media/DesigningForTransit-web.pdf. Although the document is from 2006, the principals remain the same for addressing ADA bus stop standards as well as bus turning radii and adequate street width.

Should you have any questions about MST's comments, please feel free to contact me at 831.264.5874 or email at lrheinheimer@mst.org.

Sincerely,

Lisa Rheinheimer
Director of Planning and Marketing

ALISAL WATER CORPORATION

A California Corporation
dba ALCO WATER SERVICE

Thomas R. Adcock
President
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Salinas, CA 93905
(831) 424 - 0611 Fax

October 6, 2017

Jill Miller, Senior Planner
City of Salinas
65 West Alisal Street
Salinas, CA 93901

SENT VIA UNITED STATES MAIL AND VIA EMAIL TO jill.miller@ci.salinas.ca.us

RE: Response of Alisal Water Corporation, dba Alco Water Service ("Alco") to City of Salinas' September 8, 2017 *Notice of Preparation – Salinas Central Area Specific Plan (CASP)* and De Novo Planning Group's September 7, 2017 *Public Draft Initial Study and NOP For The City of Salinas Central Area Specific Plan (CASP)*

Dear Ms. Miller,

Alco Water Service ("Alco") has received the City of Salinas' *Notice Of Preparation ("NOP") for the Salinas Central Area Specific Plan ("CASP")* dated September 8, 2017 and the *Public Draft Initial Study and NOP for the City of Salinas Central Area Specific Plan ("CASP")* dated September 7, 2017, the latter of which was prepared by the De Novo Planning Group for the City of Salinas.

Alco is a privately owned public utility that began serving water in 1932 in an unincorporated area commonly referred to as the Alisal. This area was annexed to the City of Salinas in the early 1960's. Alco is governed by the California Public Utilities Commission ("CPUC"), which is the State regulatory agency responsible for establishing certificated service areas for investor-owned public water utilities such as Alco. The CPUC issued a certificate of public convenience and necessity authorizing Alco to provide public utility water service in Monterey County and specifically, in and around the Eastern portion of the City of Salinas, including portions of the Central Area Specific Plan ("CASP") Area.

The CPUC regulates water rates and quality of service and also retains authority over water quality. Water quality is regulated by the State Water Resources Control Board Division of Drinking Water ("SWRCB Division") and the Monterey County Health Department Environmental Health Division ("MCHD-EHD").

Via its Resolution No. W-4630 ("Res. W-4630") dated April 12, 2007, and further reaffirmed by its Decision 09-04-035 (D.0905034) dated April 16, 2009, the CPUC authorized Alco to add territory to its certificated service area, including portions of the CASP Future Growth Area, all of the Eastern Future Growth Area and additional unincorporated areas. In D.0904035, the CPUC determined that Alco could adequately provide water service to the future growth areas and authorized Alco to do so, specifically stating, "It is in the public interest for Alco to be allowed to serve additional customers in its newly filed service territory". Additionally, Alco has a water supply permit from SWRCB to act as a public water supplier in Monterey County, specifically in the Eastern portion of the City of Salinas, including portions of the CASP Area.

Due to the CPUC's determination and authorization to Alco to provide service to portions of the CASP Area, Alco has already installed both a 30-inch and an 18-inch water main in a dedicated easement from the Southern portion of the CASP Area (East Boronda Road) to the Northern limit of the CASP Area, running parallel to the PG&E transmission towers easement.

The facilities necessary to provide water service for the CASP Area will include, but are not limited to, in-tract water distribution system designed as per Alco's standards and specifications deigned to meet the CPUC's General Order 103-A and Salinas' fire flow requirements, additional booster pumping stations and storage facilities.

For in-tract facilities, in the CASP Area developments, the Developer(s) or the Developer(s)'s agent(s) must comply with all of Alco's rules and regulations governing the provision of such water service, including but not limited to Alco's Tariff Rule No. 15 and any order, decision, resolution, rule, regulation, direction, demand, or requirement of the CPUC, including but not limited to the requirements of the CPUC's GO 103-A. Developers must enter into a Rule No. 15 Main Extension Contracts which requires Developers to pay for all the water system facility improvements necessary to provide water service to their projects including water system engineering and construction, inspection, pipes, valves, booster pumping facilities, wells, treatment, reservoirs and all necessary appurtenances that supply water to their development. In addition, the Developers are required to provide suitable land, easements and rights-of-way to install water system facilities including but not limited to wells, booster stations, pipelines and/or reservoirs at locations acceptable to the utility. In this manner of Developer's financing of facilities, it is assured that all of their proposed projects will have the facilities to be supplied with water.

In summary, portions of the CASP Area are already within Alco's CPUC certificated service area and Alco can and will provide water service in the CASP Area provided that the Developer(s) or the Developer(s)'s agent(s) comply with all orders, decisions, resolutions, rules, regulations, directions, demands, or requirements of the CPUC and Alco's tariffs applicable to the provision of water service to the CASP Area developments. The water service provided by Alco in the CASP Area will meet all State, Federal and CPUC standards for water quality and quantity. Alco's standards and specifications will require that the water system facilities in the CASP Area will meet all fire protection requirements of the City of Salinas Fire Department and CPUC GO 103-A at the time of construction.

Thank you for the opportunity to provide Alco's response to the City's NOP. Please keep Alco informed of the planning process for the CASP Area. I, Thomas R. Adcock, am the President of Alco Water Service and I am the primary contact person for all matters relating to the CASP Area. I can be reached at Alco's office at the contact information provided in the letterhead of this correspondence as well as via email at tom@alcowater.com.

Sincerely,

Thomas R. Adcock
President

TRA/ams

LAFCO *of Monterey County*

LOCAL AGENCY FORMATION COMMISSION OF MONTEREY COUNTY

132 W. Gabilan Street, #102
Salinas, CA 93901

P. O. Box 1369
Salinas, CA 93902

Voice: 831-754-5838
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www.monterey.lafco.ca.gov

October 9, 2017

Jill Miller, Senior Planner
Community Development Department
City of Salinas
65 West Alisal Street
Salinas, California 93901

RE: Notice of Preparation – Salinas Central Area Specific Plan (CASP)

Dear Ms. Miller:

Thank you for this opportunity to comment on the Notice of Preparation for a draft Environmental Impact Report for the Salinas Central Area Specific Plan. In order to comply with the deadline for commenting on the Notice of Preparation, I am providing the following comments in draft form. This letter is subject to review and authorization at the next regular meeting of the Local Agency Formation Commission on October 23. 2017.

LAFCO's statutory authority is derived from the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56000, et seq.). Among LAFCO's purposes are: Discouraging urban sprawl, preserving open space and prime agricultural lands, efficiently providing government services, and encouraging the orderly formation and development of local agencies based upon local conditions and circumstances (Government Code Section 56301). The Cortese-Knox-Hertzberg Act identifies factors that must be considered, and determinations that must be made, as part of LAFCO's review of annexation proposals.

Under the California Environmental Quality Act (CEQA), LAFCO is a Responsible Agency for this proposal, and will have regulatory authority for the proposed annexation application. It is in this role that LAFCO is commenting on the Notice of Preparation.

Most of the proposed 760-acre future development area was annexed to the City on May 19, 2008 following a collaborative effort which also resulted in a sphere of influence expansion and a new Memorandum of Understanding between the City and the County of Monterey. However, a portion of the northwest corner of the CASP includes three parcels (totaling 50 acres) currently outside of the existing city limits but within the City's Sphere of Influence, as designated by the Local Agency Formation Commission of Monterey County (LAFCO). Development of currently unincorporated areas would be subject to LAFCO's approval of annexation at a future date.

1. <u>Annexation of the Settrini Property within the City's Sphere of Influence</u>

The September 2002 Salinas General Plan included the designation of an area to the northeast of the City as a "Future Growth Area" for urban development. A portion of this area now forms the CASP. At that time, the area was outside the City's sphere and jurisdictional boundary and required annexation prior to any city development. In the late 2000s, the City submitted an application to LAFCO requesting two actions: (1) sphere of influence expansion of approximately 3,350 acres and (2) annexation of approximately 2,400 acres within this proposed sphere of influence boundary. The portion of the sphere amendment area that was not included within the annexation area, referred to as the "Remainder Areas," totaled approximately 950 acres and encompassed two non-contiguous sub-areas. One of the remainder areas is known as the "Settrini" property, which includes 3 parcels totaling 50 acres, and is currently located in the CASP. The second area is located northeast of the Salinas Municipal Airport and not part of the CASP. As part of the May 19, 2008 sphere resolution, the City acknowledged that additional studies, including but not limited to ones relating to water supply, traffic, and wastewater treatment, needs to be completed prior to the annexation of areas not annexed back in 2008.

If the CASP is approved, LAFCO anticipates at a future date a request to consider approval of the Settrini property annexation, in accordance with the Cortese-Knox-Hertzberg Act and local LAFCO policies. The full text of LAFCO's adopted Policies is available on LAFCO's web site: http://www.monterey.lafco.ca.gov/

As a CEQA Responsible Agency, LAFCO plans to use the City's environmental document to fulfill CEQA clearance for the annexation, and to support the evaluation of the proposal's consistency with the applicable LAFCO laws and policies, including adopted "Preservation of Open-Space and Agricultural Lands" and "Housing and Jobs" policies, among others. LAFCO requests that the draft EIR currently being prepared include an analysis of the CASP's conformance to the full range of LAFCO's adopted policies and related State laws to the extent possible, recognizing that "plan-level" review may only provide for generally limited conformance analysis. LAFCO staff can provide examples of similar analyses from other recent proposals.

A more detailed, site-specific, and updated analysis to LAFCO laws and policies should also be anticipated as a required part of subsequent, project-level CEQA documents when future proposals are brought forward to LAFCO. Provision of this information in current and future CEQA documents will help ensure that the Commission will have adequate information to act in its role as a CEQA Responsible Agency, when the future annexation proposal for the area within the CASP is submitted to LAFCO.

2. <u>Conformance to the Adopted 2006 Greater Salinas Area Memorandum of Understanding (MOU)</u>

Please include in the draft EIR an analysis of the CASP's consistency with the adopted 2006 City-County MOU. The intent of the MOU was in part to preserve agricultural lands within Monterey County, provide future growth areas for Salinas and offer adequate financing for services and facilities for the City and the County's Greater Salinas Area Plan territory.

We appreciate this opportunity to provide comments on the Notice of Preparation, subject to Commission authorization on October 23. Please continue to keep us informed throughout your process. I would be happy to meet with you and your staff for more detailed discussions.

Sincerely,

Kate McKenna

Kate McKenna, AICP
Executive Officer

MONTEREY COUNTY

WATER RESOURCES AGENCY

PO BOX 930
SALINAS , CA 93902
(831)755-4860
FAX (831) 424-7935

DAVID E. CHARDAVOYNE
GENERAL MANAGER

MONTEREY COUNTY WATER RESOURCES AGENCY
1947

STREET ADDRESS
1441 Schilling Place North Building
SALINAS, CA 93901

Oct 9 2017

In Reply to:
Public Draft **City of Salinas CASP IS/NOP**

Response to: **Jill Miller, Senior Planner**
jill.miller@ci.salinas.ca.us
City of Salinas
65 West Alisal Street
Salinas, CA 93901

Dear Ms. Miller:

PUBLIC DRAFT, **CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN (CASP) IS/NOP**

The Monterey County Water Resources Agency (MCWRA) has received the public draft of the above document. The MCWRA is a public agency who manages, protects, stores, and conserves water resources in Monterey County for beneficial and environmental use, while minimizing damage from flooding to create a safe and sustainable water supply. The purpose of this letter is to make you aware that there are significant environmental effects and mitigation measures which should be explored in the EIR which include flood hazards; the control of flood and storm waters, and the protection of the beneficial use of water. To advise on these matters, the MCWRA has prepared the following comments:

<u>POTENTIAL SIGNIFICANT IMPACTS: HYDROLOGY AND WATER QUALITY</u>

The CASP will result in zoning to allow the build out of 760 acres of currently undeveloped land. The build out will include 630 acres of neighborhood development and approximately 150 acres dedicated to parks, open space, etc.

Storm Drainage:

- The project area lies entirely within the City of Salinas' Future Growth Area,157 square-mile Reclamation Ditch and the MCWRA's Zone 9 Benefit Assessment Zone. The MCWRA operates and maintains most portions of the Reclamation Ditch system, including tributaries, and five pump stations. The Reclamation Ditch conveys storm water and provides critical flood protection for unincorporated Monterey County and the City of Salinas. The *Reclamation Ditch Watershed Impact Fee Program / Nexus Analysis Summary Report*, prepared for the MCWRA by Schaaf & Wheeler, dated April 2011, states "the system currently does not meet the public's demand for flood control to protect lives and property". This project will result in additional storm water runoff and flood flows to the Reclamation

Ditch system which, apparently, will receive all additional storm water from the City of Salinas' CASP. It is unclear how the increased storm water runoff and flood flows from the conversion of approximately 630 acres of agricultural lands to nearly 100% impervious, will be mitigated as proposed. The EIR should include a detailed stormwater and flood control analysis to determine if buildout as result of the CASP would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-site or offsite; and/or, create or contribute runoff water which would exceed the capacity of the existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. This additional information is required before we can support or further comment on the CASP.

Water Supply:

- Groundwater resources in the project area are in overdraft. This overdraft condition is a result of an imbalance between recharge and groundwater pumping in the Salinas Valley Groundwater Basin. Water demand for the resulting CASP zoning should be evaluated in the EIR. The EIR should include a detailed water demand analysis to determine if buildout as a result of the CASP would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the locate groundwater table level. This additional information is required before we can support or further comment on the CASP.

The MCWRA appreciates the opportunity to comment on the City of Salinas's CASP. If you have any questions, please contact me at bodensteinerjm@co.monterey.ca.us or (831) 755-4970.

Sincerely,

ORIGINAL SIGNED BY:

Jennifer Bodensteiner, Associate Hydrologist
Floodplain Management and Land Use Review
Hydrology Division

TAMC
TRANSPORTATION AGENCY
FOR MONTEREY COUNTY

55-B Plaza Circle, Salinas, CA 93901-2902 • Tel: (831) 775-0903 • Website: www.tamcmonterey.org

October 9, 2017

Jill Miller
Senior Planner
City of Salinas, Community Development Department
65 West Alisal Street, Salinas, CA 93901

SUBJECT: Comments on the Notice of Preparation for the Central Area Specific Plan (CASP)

Dear Ms. Miller:

The Transportation Agency for Monterey County is the Regional Transportation Planning and Congestion Management Agency for Monterey County. Agency staff has reviewed the Notice of Preparation for the Central Area Specific Plan (CASP) and offers the following comments:

1. The Agency supports the development of a detailed Traffic Impact Analysis to inform the EIR about the impacts to local and regional road networks.
2. The Agency support the early inclusion and consideration for active transportation strategies in the development of projects, including those noted in the NOP.
3. Consideration should be given to the installation of electric vehicle charging stations, as new construction provides an opportunity to install this needed infrastructure.
4. The Agency supports the use of Intersections Control Evaluations (ICE analysis) when major modifications to intersections are considered.
5. The Agency looks forward to providing comments on the draft environmental impact report.

Thank you for the opportunity to comment on the proposed project. If you have any questions, please contact Grant Leonard of my staff at 831-775-0903.

Sincerely,

Debra L. Hale
Executive Director

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
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Serious drought
Help save water!

October 13, 2017

MON-101-R91
SCH#2017091022

Ms. Jill Miller
City of Salinas
65 W. Alisal Street
Salinas, CA 93901

Dear Ms. Miller:

COMMENTS FOR THE NOTICE OF PREPARATION (NOP) FOR THE CITY OF SALINAS CENTRAL AREA SPECIFIC PLAN (CASP) DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) – SALINAS, CA

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the NOP for the City of Salinas Central Area Specific Plan draft EIR that encompasses approximately 760 acres with a variety of housing types and land uses. Caltrans supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel and development. Projects that support smart growth principles which include improvements to pedestrian, bicycle, and transit infrastructure (or other key Transportation Demand Strategies) are supported by Caltrans and are consistent with our mission, vision, and goals.

Further, we seek to reduce vehicle trips and new vehicle miles traveled associated with the plan by appropriate measures that avoid, minimize, or mitigate impacts through smart mobility community design and multimodal demand strategies. Caltrans offers the following comments in response to the City of Salinas Central Area Specific Plan:

1. Due to the regional significance of this specific plan, three particular interchanges on US 101 are of interest to Caltrans. These include North Main Street, West Laurel Drive, and Boronda Road. Caltrans requests studies that include specific analysis and on the impacts merge, weave, and diverge as a result of the growth.

2. The Transportation Agency for Monterey County (TAMC) collects development impact fees to help fund transportation projects of regional significance to address project long-range traffic

impacts. Caltrans supports payment of the adopted TAMC development impact fees as required to mitigate any cumulative impacts for future development projects.

3. At any time during the environmental review and approval process for development projects, Caltrans retains the statutory right to request a formal scoping meeting to resolve any issues of concern. Such formal scoping meeting requests are allowed per the provisions of the California Public Resources Code Section 21083.9 [a] [1].

Thank you for the opportunity to review and comment on the proposed project. If you have any questions, or need further clarification on items discussed above, please contact me at (805) 549-3282 or email jill.morales@dot.ca.gov.

Sincerely,

JILLIAN R. LEAL-MORALES
Associate Transportation Planner, District 5
jill.morales@dot.ca.gov

cc: Orchid Monroy-Ochoa (D5)
Grant Leonard (TAMC)
Heather Adamson (AMBAG)

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APPENDIX B –AIR QUALITY, GREENHOUSES GASES, & ENERGY MODELING

Appendix Contents

1. Analysis of Models and Tools for Correlating Project-Generated Emissions to Health End Points
2. CalEEMod Modeling Results
3. Energy Consumption Estimates
4. Greenhouse Gas Efficiency Metric Calculation Methodology

APPENDIX B.1

Analysis of Models and Tools for Correlating Project-Generated Emissions to Health End Points

Appendix B

Appendix B of the Draft EIR includes additional information regarding models and tools for correlating project-generated criteria pollutant emissions to health end points. The following table is an addition to Appendix B.

Analysis of Models and Tools to Correlate Project-Generated Criteria Pollutant Emissions to Health End Points

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-level CEQA Applicability
AERMOD Modeling System[1,2]	AERMIC	A steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The modeling system incorporates air dispersion based on a planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, $PM_{10,}$ NH_3	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for project-level CEQA analysis.
AirCounts[3]	Abt Assoc.	Online tool that helps large and medium-sized cities quickly estimate the health benefits of $PM_{2.5}$ emission reductions and economic value of those benefits. The tool estimates the number of deaths (mortality) avoided and economic value related to user-specified regional, annual $PM_{2.5}$ emissions reduction.	City-level	Primary $PM_{2.5}$	This tool is only illustrative, as it is limited to certain cities and does not target specific sectors. The tool is not sector specific, and includes limited California data. It cannot provide results at a project-level. Therefore, the tool is not recommended for project-level CEQA analysis.
Air Pollution Emission Experiments and Policy analysis (APEEP) model[4]	Mueller and Mendelsohn2006, 2009	The Air Pollution Emission Experiments and Policy (APEEP) analysis model (Muller and Mendelsohn 2006, 2009) is a traditional integrated assessment model. Like other integrated assessment models, APEEP connects emissions of air pollution through air-quality modeling to exposures, physical effects, and monetary damages. Making these links requires the use of findings reported in the peer-reviewed literature across several scientific disciplines. The air-quality models in APEEP use the emission data provided by EPA to estimate corresponding ambient concentrations in each county in the coterminous states.	National or county-level	SO_2, ROG, NO_x, Ozone, $PM_{2.5}$, PM_{10}	The model operates at the national scale but may be applied at the county-level (although it is not clear how this adjustment should be made). It cannot provide results at a project-level. The tool is also not commercially available. Therefore, the tool is not recommended for project-level CEQA analysis.

1 See: https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

2 Note: May require additional software to estimate the level of each specific pollutant at the modeled receptors.

3 See: https://www.abtassociates.com/tools

4 See: https://public.tepper.cmu.edu/nmuller/APModel.aspx

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-level CEQA Applicability
CALINE3/ CAL3QHC/ CAL3QHCR[1, 2]	USEPA	A steady-state Gaussian dispersion model designed to determine air pollution concentrations at receptor locations downwind of highways located in relatively uncomplicated terrain. CALINE3 is incorporated into the more refined CAL3QHC and CAL3QHCR models. CAL3QHCR is a more refined version based on CAL3QHC that requires local meteorological data.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for project-level CEQA analysis.
Complex Terrain Dispersion Model Plus Algorithms for Unstable Situations (CTDMPLUS)[1, 2]	USEPA	A refined point source gaussian air quality model for use in all stability conditions for complex terrain. The purpose of the model is to provide a practical, refined plum model for elevated point sources near complex terrain.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for project-level CEQA analysis.
Co-Benefits Risk Assessment (COBRA)[5]	USEPA	Preliminary screening tool that contains baseline emission estimates of a variety of air pollutants for a single year. COBRA is targeted to state and local governments as a screening assessment for clean energy policies. EPA's CO–Benefits Risk Assessment (COBRA) screening model is a free tool that helps state and local governments: • Explore how changes in air pollution from clean energy policies and programs; • Estimate the economic value of the health benefits associated with clean energy policies and programs to compare against program costs; • Map and visually represent the air quality, human health, and health-related economic benefits from reductions in emissions of particulate matter ($PM_{2.5}$), sulfur dioxide ($S0_2$), nitrogen oxides (NO_X), ammonia (NH_3), and volatile organic compounds (VOCs) that result from clean energy policies and programs.	National, regional, state, or county-levels	$PM_{2.5}$, SO_2, NO_x, NH_3, and ROG	COBRA is a preliminary screening tool only and cannot be used at sub-county resolution. It cannot provide results at a project-level. It also does not account for secondary emission changes resulting from market responses. Accordingly, the tool is not recommended for project-level CEQA analysis.

[5] See: https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool

Tool	Created by	Description	Resolution	Pollutants Analyzed	Project-level CEQA Applicability
Environmental Benefits and Mapping Program-Community Edition (BenMAP-CE)[6]	USEPA	The USEPA's detailed model for estimating the health impacts from air pollution. It relies on input concentrations and applies concentration-response (C-R) health impact functions, which relate a change in the concentration of a pollutant with a change in the incidence of a health endpoint, including premature mortality, heart attacks, chronic respiratory illnesses, asthma exacerbation and other adverse health effects. Detailed inputs are required for air quality changes (concentrations from AERMOD), population, baseline incidence rates, and effect estimates.	National, County, City, and sub-regional levels	Ozone, PM, NO_2, SO_2, CO	This tool is not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Although this tool is under consideration by some California air districts for use towards project-level analysis, no air district in California has promulgated a methodology (using this tool or any other) that would correlate the expected air quality emissions of projects to the likely health consequences of the increased emissions. Accordingly, the tool is not recommended.
Fast Scenario Screening Tool (TM5-FASST)[7]	Joint Research Centre (Italy)	A tool that allows users to evaluate how air pollutant emissions affect large scale pollutant concentrations and their impact on human health (mortality and years of life lost) and crop yield from national to regional air quality policies, such as climate policies. The target policy domains are national to regional air quality policies, or air pollutant scenarios linked to other policy domains (e.g. climate policy). The tool is web-based and does not require coding or modelling. Users must gain access through publishers.	Global and national-levels	$PM_{2.5}$, Ozone, NO_x, NH_3, CO, ROG, CH_4, SO_2	This tool is applicable at national to global scales. It cannot provide results a project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.
Long-range Energy Alternatives Planning System-Integrated Benefits Calculator (LEAP-IBC)[8]	Climate and Clean Air Coalition (CCAC)	A calculator that allows users to rapidly estimate the impacts of reducing emissions on health, climate, and agriculture. The tool uses sensitivity coefficients that link gridded emissions of air pollutants and precursors to health, climate and agricultural impacts at a national level. The tool is primarily used for policy analysis. The tool is currently Excel-based and is available through the developers only. A web-based interface is currently under development.	National-level	$PM_{2.5}$, Ozone, NO_2	This tool is applicable at national scale. Accordingly, the tool is not recommended for project-level CEQA analysis.
Methodology for Estimating Premature Deaths Associated with Long-Term Exposure to Fine Airborne Particulate Matter in California[9]	California Air Resources Board	The staff report identifies a relative risk of premature death associated with $PM_{2.5}$ exposure based on a review of all relevant scientific literature, and a new relative risk factor was developed. This new factor is a 10% increase in risk of premature death per 10 μg/m³ increase in exposure to $PM_{2.5}$ concentrations (uncertainty interval: 3% to 20%)	National	$PM_{2.5}$	The primary author of the CARB staff report notes that the analysis method is not suited for small projects and may yield unreliable results due to various uncertainties. The tool also cannot provide results on a project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.

[6] See: https://www.epa.gov/benmap
[7] See: http://tm5-fasst.jrc.ec.europa.eu/
[8] See: https://www.ccacoalition.org/en/resources/long-range-energy-alternatives-planning-integrated-benefits-calculator-leap-ibc-factsheet
[9] See: https://ww3.arb.ca.gov/research/health/pm-mort/pmmortalityreportfinalr10-24-08.pdf

TOOL	CREATED BY	DESCRIPTION	RESOLUTION	POLLUTANTS ANALYZED	PROJECT-LEVEL CEQA APPLICABILITY
Multi-Pollutant Evaluation Method (MPEM)[10]	BAAQMD	Estimates the impacts of control measures on pollutant concentration, population exposures, and health outcomes for criteria, toxic, and GHG pollutants. Monetizes the value of total health benefits from reductions in $PM_{2.5}$, ozone, and certain carcinogens, and the social value of GHG reductions. MPEM was designed for development of a Clean Air Plan for the San Francisco Bay Area. The inputs are specific to the SF region and are not appropriate for projects outside BAAQMD.	Regional level in the SFBAAB	Ozone, PM, air toxics, GHG	This tool is designed to support the BAAQMD in regional planning and emissions analysis within the San Francisco Bay Area Air Basin (SFBAAB). The model applies changes in pollutant concentrations over a four-square kilometer grid. The tool also cannot provide results on a project-level. Additionally, this tool is only applicable for the SFBAAB. Accordingly, the tool is not recommended for project-level CEQA analysis.
Offshore and Coastal Dispersion Model Version 5 (OCD)[1, 2]	USEPA	A straight-line Gaussian model developed to determine the impact of offshore emissions from point, area or line sources on the air quality of coastal regions. OCD incorporates overwater plume transport and dispersion as well as changes that occur as the plume crosses the shoreline. Hourly meteorological data are needed from both offshore and onshore locations.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for project-level CEQA analysis.
Response Surface Model (RSM)-based Benefit-per-Ton Estimates[11]	USEPA	Consists of tables reporting the monetized $PM_{2.5}$-related health benefits from reducing $PM_{2.5}$ precursors from certain source types nationally and for 9 US cities/regions. Applying these estimates simply involves multiplying the emissions reduction by the relevant benefit per-ton metric. The resulting value is the PM mortality risk estimate at a 3% discount rate.	National or regional (San Joaquin County only) levels	SOx, VOC, NH_3, NO_x	RSM includes regional values specific to San Joaquin County. The values are also dated. Accordingly, the tool is not recommended for project-level CEQA analysis.
Sector-based Benefit-per-Ton Estimates[12]	USEPA	Two specific sets of Benefit-per-ton (BPT) estimates for 17 key source categories are available. Both are a reduced-form approach based on BenMAP modeling. Applying these factors involves multiplying the emissions reduction (in tons) by the relevant benefit (economic value) or incidence (rates of mortality and morbidity) per-ton metric. The resulting value is the economics, mortality, and morbidity of direct and indirect $PM_{2.5}$ emissions.	National-scale	$PM_{2.5}$, SO_2, NO_x	The BPT estimates do not account for project-specific emissions or receptor locations, local dispersion characteristics, or regional photochemistry. The resultant health effects are therefore reflective of national averages and may not be accurate when applied to the project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.

[10] See: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/mpem_nov_dec_2016-pdf.pdf?la=en

[11] See: https://www.epa.gov/benmap/response-surface-model-rsm-based-benefit-ton-estimates

[12] See: https://www.epa.gov/benmap/sector-based-pm25-benefit-ton-estimates. The updated Technical Support Document (February 2018) is available at: https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf

APPENDIX B.2

CalEEMod Modeling Results

Salinas CASP Model Full Buildout (2040) - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5225	5.5490	3.6100	6.9800e-003	1.3162	0.2535	1.5697	0.5059	0.2341	0.7400	0.0000	615.2342	615.2342	0.1784	0.0000	619.6942
2021	4.8278	20.0249	25.8524	0.0849	6.0110	0.3085	6.3195	1.5983	0.2880	1.8863	0.0000	7,817.5869	7,817.5869	0.4715	0.0000	7,829.3741
2022	6.1648	28.8633	35.4648	0.1313	9.0740	0.3090	9.3830	2.4248	0.2898	2.7146	0.0000	12,133.2052	12,133.2052	0.6203	0.0000	12,148.7123
2023	5.7352	24.3197	32.3826	0.1278	9.0741	0.2483	9.3224	2.4249	0.2321	2.6570	0.0000	11,814.2703	11,814.2703	0.5510	0.0000	11,828.0453
2024	5.5286	23.6029	30.3428	0.1258	9.1440	0.2284	9.3725	2.4436	0.2134	2.6570	0.0000	11,642.5103	11,642.5103	0.5312	0.0000	11,655.7907
2025	5.2880	22.6569	28.2412	0.1225	9.1093	0.2057	9.3149	2.4343	0.1921	2.6264	0.0000	11,341.0692	11,341.0692	0.5088	0.0000	11,353.7885
2026	5.1169	22.1549	26.4556	0.1197	9.1093	0.2023	9.3116	2.4343	0.1889	2.6232	0.0000	11,092.9651	11,092.9651	0.4900	0.0000	11,105.2154
2027	4.9581	21.6990	24.9315	0.1175	9.1094	0.1982	9.3076	2.4343	0.1851	2.6194	0.0000	10,893.1923	10,893.1923	0.4741	0.0000	10,905.0449
2028	4.7823	21.2272	23.5319	0.1151	9.0746	0.1932	9.2678	2.4250	0.1805	2.6055	0.0000	10,676.1354	10,676.1354	0.4580	0.0000	10,687.5851
2029	4.6366	20.9497	22.3724	0.1138	9.1095	0.1900	9.2995	2.4344	0.1775	2.6118	0.0000	10,561.3501	10,561.3501	0.4463	0.0000	10,572.5083
2030	4.5243	19.8116	21.4309	0.1135	9.1096	0.1214	9.2309	2.4344	0.1175	2.5519	0.0000	10,519.0542	10,519.0542	0.3062	0.0000	10,526.7090
2031	4.3548	19.5237	20.3553	0.1122	9.1096	0.1181	9.2277	2.4344	0.1145	2.5489	0.0000	10,400.9714	10,400.9714	0.2947	0.0000	10,408.3379
2032	4.2206	19.3467	19.5018	0.1115	9.1445	0.1155	9.2601	2.4437	0.1121	2.5559	0.0000	10,339.5807	10,339.5807	0.2856	0.0000	10,346.7197

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2033	4.0608	18.9831	18.5709	0.1097	9.0748	0.1120	9.1867	2.4251	0.1088	2.5339	0.0000	10,174.9403	10,174.9403	0.2749	0.0000	10,181.8127
2034	3.9553	18.8016	17.8542	0.1089	9.0748	0.1095	9.1843	2.4251	0.1065	2.5316	0.0000	10,101.7462	10,101.7462	0.2671	0.0000	10,108.4242
2035	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2036	3.8462	18.3894	17.3538	0.1090	9.1446	0.0804	9.2251	2.4438	0.0776	2.5214	0.0000	10,116.9069	10,116.9069	0.2588	0.0000	10,123.3769
2037	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2038	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2039	3.8168	18.2491	17.2213	0.1082	9.0748	0.0798	9.1547	2.4251	0.0770	2.5021	0.0000	10,039.6786	10,039.6786	0.2568	0.0000	10,046.0992
2040	1.3991	15.6987	11.2354	0.0888	6.6471	0.0401	6.6872	1.7951	0.0382	1.8332	0.0000	8,282.3088	8,282.3088	0.2023	0.0000	8,287.3670
Maximum	**6.1648**	**28.8633**	**35.4648**	**0.1313**	**9.1446**	**0.3090**	**9.3830**	**2.4438**	**0.2898**	**2.7146**	**0.0000**	**12,133.2052**	**12,133.2052**	**0.6203**	**0.0000**	**12,148.7123**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5225	5.5489	3.6100	6.9800e-003	0.6185	0.2535	0.8720	0.2344	0.2341	0.4686	0.0000	615.2335	615.2335	0.1784	0.0000	619.6936
2021	4.8278	20.0249	25.8524	0.0849	6.0110	0.3085	6.3195	1.5983	0.2880	1.8863	0.0000	7,817.5862	7,817.5862	0.4715	0.0000	7,829.3733
2022	6.1648	28.8632	35.4648	0.1313	9.0740	0.3090	9.3830	2.4248	0.2898	2.7146	0.0000	12,133.2045	12,133.2045	0.6203	0.0000	12,148.7116

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	5.7352	24.3197	32.3826	0.1278	9.0741	0.2483	9.3224	2.4249	0.2321	2.6570	0.0000	11,814.2695	11,814.2695	0.5510	0.0000	11,828.0446
2024	5.5286	23.6029	30.3428	0.1258	9.1440	0.2284	9.3725	2.4436	0.2134	2.6570	0.0000	11,642.5096	11,642.5096	0.5312	0.0000	11,655.7900
2025	5.2880	22.6569	28.2412	0.1225	9.1093	0.2057	9.3149	2.4343	0.1921	2.6264	0.0000	11,341.0684	11,341.0684	0.5088	0.0000	11,353.7877
2026	5.1169	22.1549	26.4556	0.1197	9.1093	0.2023	9.3116	2.4343	0.1889	2.6232	0.0000	11,092.9644	11,092.9644	0.4900	0.0000	11,105.2147
2027	4.9581	21.6990	24.9315	0.1175	9.1094	0.1982	9.3076	2.4343	0.1851	2.6194	0.0000	10,893.1916	10,893.1916	0.4741	0.0000	10,905.0442
2028	4.7823	21.2272	23.5319	0.1151	9.0746	0.1932	9.2678	2.4250	0.1805	2.6055	0.0000	10,676.1347	10,676.1347	0.4580	0.0000	10,687.5844
2029	4.6366	20.9497	22.3724	0.1138	9.1095	0.1900	9.2995	2.4344	0.1775	2.6118	0.0000	10,561.3494	10,561.3494	0.4463	0.0000	10,572.5076
2030	4.5243	19.8116	21.4309	0.1135	9.1096	0.1214	9.2309	2.4344	0.1175	2.5519	0.0000	10,519.0533	10,519.0533	0.3062	0.0000	10,526.7082
2031	4.3548	19.5237	20.3553	0.1122	9.1096	0.1181	9.2277	2.4344	0.1145	2.5489	0.0000	10,400.9706	10,400.9706	0.2947	0.0000	10,408.3370
2032	4.2206	19.3467	19.5018	0.1115	9.1445	0.1155	9.2601	2.4437	0.1121	2.5559	0.0000	10,339.5798	10,339.5798	0.2856	0.0000	10,346.7188
2033	4.0608	18.9831	18.5709	0.1097	9.0748	0.1120	9.1867	2.4251	0.1088	2.5339	0.0000	10,174.9395	10,174.9395	0.2749	0.0000	10,181.8118
2034	3.9553	18.8016	17.8542	0.1089	9.0748	0.1095	9.1843	2.4251	0.1065	2.5316	0.0000	10,101.7454	10,101.7454	0.2671	0.0000	10,108.4234
2035	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2036	3.8462	18.3894	17.3538	0.1090	9.1446	0.0804	9.2251	2.4438	0.0776	2.5214	0.0000	10,116.9061	10,116.9061	0.2588	0.0000	10,123.3761
2037	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2038	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2039	3.8168	18.2491	17.2213	0.1082	9.0748	0.0798	9.1547	2.4251	0.0770	2.5021	0.0000	10,039.6778	10,039.6778	0.2568	0.0000	10,046.0984
2040	1.3991	15.6987	11.2354	0.0888	6.6471	0.0401	6.6872	1.7951	0.0382	1.8332	0.0000	8,282.3084	8,282.3084	0.2023	0.0000	8,287.3666

Maximum	**6.1648**	**28.8632**	**35.4648**	**0.1313**	**9.1446**	**0.3090**	**9.3830**	**2.4438**	**0.2898**	**2.7146**	**0.0000**	**12,133.2045**	**12,133.2045**	**0.6203**	**0.0000**	**12,148.7116**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.39**	**0.00**	**0.39**	**0.57**	**0.00**	**0.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**4-1-2020**	**6-30-2020**	1.4443	1.4443
3	**7-1-2020**	**9-30-2020**	2.6250	2.6250
4	**10-1-2020**	**12-31-2020**	1.9485	1.9485
5	**1-1-2021**	**3-31-2021**	1.8861	1.8861
6	**4-1-2021**	**6-30-2021**	3.9354	3.9354
7	**7-1-2021**	**9-30-2021**	9.3066	9.3066
8	**10-1-2021**	**12-31-2021**	9.6234	9.6234
9	**1-1-2022**	**3-31-2022**	8.7938	8.7938
10	**4-1-2022**	**6-30-2022**	8.6140	8.6140
11	**7-1-2022**	**9-30-2022**	8.7087	8.7087
12	**10-1-2022**	**12-31-2022**	8.9892	8.9892
13	**1-1-2023**	**3-31-2023**	7.5535	7.5535
14	**4-1-2023**	**6-30-2023**	7.3987	7.3987
15	**7-1-2023**	**9-30-2023**	7.4800	7.4800
16	**10-1-2023**	**12-31-2023**	7.7214	7.7214
17	**1-1-2024**	**3-31-2024**	7.3397	7.3397
18	**4-1-2024**	**6-30-2024**	7.1229	7.1229
19	**7-1-2024**	**9-30-2024**	7.2012	7.2012
20	**10-1-2024**	**12-31-2024**	7.4204	7.4204
21	**1-1-2025**	**3-31-2025**	6.9849	6.9849
22	**4-1-2025**	**6-30-2025**	6.8642	6.8642

23	**7-1-2025**	**9-30-2025**	6.9396	6.9396
24	**10-1-2025**	**12-31-2025**	7.1401	7.1401
25	**1-1-2026**	**3-31-2026**	6.8111	6.8111
26	**4-1-2026**	**6-30-2026**	6.7041	6.7041
27	**7-1-2026**	**9-30-2026**	6.7778	6.7778
28	**10-1-2026**	**12-31-2026**	6.9624	6.9624
29	**1-1-2027**	**3-31-2027**	6.6522	6.6522
30	**4-1-2027**	**6-30-2027**	6.5580	6.5580
31	**7-1-2027**	**9-30-2027**	6.6301	6.6301
32	**10-1-2027**	**12-31-2027**	6.8000	6.8000
33	**1-1-2028**	**3-31-2028**	6.5824	6.5824
34	**4-1-2028**	**6-30-2028**	6.4277	6.4277
35	**7-1-2028**	**9-30-2028**	6.4983	6.4983
36	**10-1-2028**	**12-31-2028**	6.6548	6.6548
37	**1-1-2029**	**3-31-2029**	6.3739	6.3739
38	**4-1-2029**	**6-30-2029**	6.3031	6.3031
39	**7-1-2029**	**9-30-2029**	6.3724	6.3724
40	**10-1-2029**	**12-31-2029**	6.5156	6.5156
41	**1-1-2030**	**3-31-2030**	6.0587	6.0587
42	**4-1-2030**	**6-30-2030**	5.9969	5.9969
43	**7-1-2030**	**9-30-2030**	6.0628	6.0628
44	**10-1-2030**	**12-31-2030**	6.1933	6.1933
45	**1-1-2031**	**3-31-2031**	5.9385	5.9385
46	**4-1-2031**	**6-30-2031**	5.8881	5.8881
47	**7-1-2031**	**9-30-2031**	5.9528	5.9528
48	**10-1-2031**	**12-31-2031**	6.0704	6.0704
49	**1-1-2032**	**3-31-2032**	5.8977	5.8977

50	**4-1-2032**	**6-30-2032**	5.7926	5.7926
51	**7-1-2032**	**9-30-2032**	5.8563	5.8563
52	**10-1-2032**	**12-31-2032**	5.9626	5.9626
53	**1-1-2033**	**3-31-2033**	5.7423	5.7423
54	**4-1-2033**	**6-30-2033**	5.7105	5.7105
55	**7-1-2033**	**9-30-2033**	5.7733	5.7733
56	**10-1-2033**	**12-31-2033**	5.8699	5.8699
57	**1-1-2034**	**3-31-2034**	5.6666	5.6666
58	**4-1-2034**	**6-30-2034**	5.6416	5.6416
59	**7-1-2034**	**9-30-2034**	5.7036	5.7036
60	**10-1-2034**	**12-31-2034**	5.7926	5.7926
61	**1-1-2035**	**3-31-2035**	5.4918	5.4918
62	**4-1-2035**	**6-30-2035**	5.4712	5.4712
63	**7-1-2035**	**9-30-2035**	5.5313	5.5313
64	**10-1-2035**	**12-31-2035**	5.6139	5.6139
65	**1-1-2036**	**3-31-2036**	5.5528	5.5528
66	**4-1-2036**	**6-30-2036**	5.4712	5.4712
67	**7-1-2036**	**9-30-2036**	5.5313	5.5313
68	**10-1-2036**	**12-31-2036**	5.6139	5.6139
69	**1-1-2037**	**3-31-2037**	5.4918	5.4918
70	**4-1-2037**	**6-30-2037**	5.4712	5.4712
71	**7-1-2037**	**9-30-2037**	5.5313	5.5313
72	**10-1-2037**	**12-31-2037**	5.6139	5.6139
73	**1-1-2038**	**3-31-2038**	5.4918	5.4918
74	**4-1-2038**	**6-30-2038**	5.4712	5.4712
75	**7-1-2038**	**9-30-2038**	5.5313	5.5313
76	**10-1-2038**	**12-31-2038**	5.6139	5.6139

77	**1-1-2039**	**3-31-2039**	5.4918	5.4918
78	**4-1-2039**	**6-30-2039**	5.4712	5.4712
79	**7-1-2039**	**9-30-2039**	5.5313	5.5313
80	**10-1-2039**	**12-31-2039**	5.6139	5.6139
81	**1-1-2040**	**3-31-2040**	4.8419	4.8419
82	**4-1-2040**	**6-30-2040**	4.5212	4.5212
83	**7-1-2040**	**9-30-2040**	4.5709	4.5709
		Highest	9.6234	9.6234

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	60.1199	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6720	1,245.6416	0.7786	0.0491	1,279.7350
Energy	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.8921	5,174.8921	0.0992	0.0949	5,205.6439
Mobile	7.1110	41.7525	78.0673	0.3900	41.9612	0.1738	42.1349	11.2559	0.1615	11.4175	0.0000	36,066.5827	36,066.5827	1.2689	0.0000	36,098.3062
Waste						0.0000	0.0000		0.0000	0.0000	904.1258	0.0000	904.1258	53.4323	0.0000	2,239.9334
Water						0.0000	0.0000		0.0000	0.0000	98.7060	0.0000	98.7060	10.1381	0.2394	423.4929
Total	**67.7538**	**47.7164**	**163.6845**	**0.5026**	**41.9612**	**6.7802**	**48.7414**	**11.2559**	**6.7680**	**18.0239**	**1,585.8013**	**41,904.1468**	**43,489.9481**	**65.7171**	**0.3833**	**45,247.1114**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	25.6101	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Energy	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.8921	5,174.8921	0.0992	0.0949	5,205.6439
Mobile	6.6083	39.7150	69.0790	0.3390	35.8768	0.1518	36.0286	9.6238	0.1411	9.7649	0.0000	31,358.9285	31,358.9285	1.1364	0.0000	31,387.3381
Waste						0.0000	0.0000		0.0000	0.0000	904.1258	0.0000	904.1258	53.4323	0.0000	2,239.9334
Water						0.0000	0.0000		0.0000	0.0000	78.9648	0.0000	78.9648	8.1104	0.1915	338.7943
Total	**32.7412**	**45.4550**	**112.4930**	**0.3746**	**35.8768**	**0.8031**	**36.6799**	**9.6238**	**0.7924**	**10.4162**	**983.0906**	**37,489.4984**	**38,472.5890**	**62.8595**	**0.3027**	**40,134.2711**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**51.68**	**4.74**	**31.27**	**25.46**	**14.50**	**88.16**	**24.75**	**14.50**	**88.29**	**42.21**	**38.01**	**10.54**	**11.54**	**4.35**	**21.04**	**11.30**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40

Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0644	0.0000	0.0644	9.7500e-003	0.0000	9.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3486	0.2284	4.1000e-004		0.0174	0.0174		0.0162	0.0162	0.0000	35.6985	35.6985	0.0101	0.0000	35.9505
Total	**0.0348**	**0.3486**	**0.2284**	**4.1000e-004**	**0.0644**	**0.0174**	**0.0818**	**9.7500e-003**	**0.0162**	**0.0259**	**0.0000**	**35.6985**	**35.6985**	**0.0101**	**0.0000**	**35.9505**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	6.4000e-004	5.7400e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1905	1.1905	5.0000e-005	0.0000	1.1917
Total	**3.1100e-003**	**0.0864**	**0.0232**	**2.4000e-004**	**6.0700e-003**	**3.4000e-004**	**6.4100e-003**	**1.6500e-003**	**3.3000e-004**	**1.9800e-003**	**0.0000**	**23.3666**	**23.3666**	**8.8000e-004**	**0.0000**	**23.3887**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0290	0.0000	0.0290	4.3900e-003	0.0000	4.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3486	0.2284	4.1000e-004		0.0174	0.0174		0.0162	0.0162	0.0000	35.6985	35.6985	0.0101	0.0000	35.9504
Total	**0.0348**	**0.3486**	**0.2284**	**4.1000e-004**	**0.0290**	**0.0174**	**0.0464**	**4.3900e-003**	**0.0162**	**0.0206**	**0.0000**	**35.6985**	**35.6985**	**0.0101**	**0.0000**	**35.9504**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	6.4000e-004	5.7400e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1905	1.1905	5.0000e-005	0.0000	1.1917
Total	**3.1100e-003**	**0.0864**	**0.0232**	**2.4000e-004**	**6.0700e-003**	**3.4000e-004**	**6.4100e-003**	**1.6500e-003**	**3.3000e-004**	**1.9800e-003**	**0.0000**	**23.3666**	**23.3666**	**8.8000e-004**	**0.0000**	**23.3887**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6052	0.0000	0.6052	0.3327	0.0000	0.3327	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2600	2.7939	1.7993	3.3800e-003		0.1284	0.1284		0.1187	0.1187	0.0000	296.4177	296.4177	0.0912	0.0000	298.6973
Total	**0.2600**	**2.7939**	**1.7993**	**3.3800e-003**	**0.6052**	**0.1284**	**0.7336**	**0.3327**	**0.1187**	**0.4513**	**0.0000**	**296.4177**	**296.4177**	**0.0912**	**0.0000**	**298.6973**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1300e-003	4.7700e-003	0.0427	1.0000e-004	0.0174	8.0000e-005	0.0175	4.4500e-003	8.0000e-005	4.5300e-003	0.0000	8.8622	8.8622	3.8000e-004	0.0000	8.8718
Total	**5.1300e-003**	**4.7700e-003**	**0.0427**	**1.0000e-004**	**0.0174**	**8.0000e-005**	**0.0175**	**4.4500e-003**	**8.0000e-005**	**4.5300e-003**	**0.0000**	**8.8622**	**8.8622**	**3.8000e-004**	**0.0000**	**8.8718**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2724	0.0000	0.2724	0.1497	0.0000	0.1497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2600	2.7939	1.7993	3.3800e-003		0.1284	0.1284		0.1187	0.1187	0.0000	296.4174	296.4174	0.0912	0.0000	298.6969
Total	**0.2600**	**2.7939**	**1.7993**	**3.3800e-003**	**0.2724**	**0.1284**	**0.4007**	**0.1497**	**0.1187**	**0.2684**	**0.0000**	**296.4174**	**296.4174**	**0.0912**	**0.0000**	**298.6969**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1300e-003	4.7700e-003	0.0427	1.0000e-004	0.0174	8.0000e-005	0.0175	4.4500e-003	8.0000e-005	4.5300e-003	0.0000	8.8622	8.8622	3.8000e-004	0.0000	8.8718
Total	**5.1300e-003**	**4.7700e-003**	**0.0427**	**1.0000e-004**	**0.0174**	**8.0000e-005**	**0.0175**	**4.4500e-003**	**8.0000e-005**	**4.5300e-003**	**0.0000**	**8.8622**	**8.8622**	**3.8000e-004**	**0.0000**	**8.8718**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5989	0.0000	0.5989	0.1511	0.0000	0.1511	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0740	177.0740	0.0573	0.0000	178.5057
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.5989**	**0.0707**	**0.6696**	**0.1511**	**0.0650**	**0.2161**	**0.0000**	**177.0740**	**177.0740**	**0.0573**	**0.0000**	**178.5057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.6400e-003	0.0237	5.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	4.9130	4.9130	2.1000e-004	0.0000	4.9182
Total	**2.8400e-003**	**2.6400e-003**	**0.0237**	**5.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9130**	**4.9130**	**2.1000e-004**	**0.0000**	**4.9182**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2695	0.0000	0.2695	0.0680	0.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0737	177.0737	0.0573	0.0000	178.5055
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.2695**	**0.0707**	**0.3402**	**0.0680**	**0.0650**	**0.1330**	**0.0000**	**177.0737**	**177.0737**	**0.0573**	**0.0000**	**178.5055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.6400e-003	0.0237	5.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	4.9130	4.9130	2.1000e-004	0.0000	4.9182
Total	**2.8400e-003**	**2.6400e-003**	**0.0237**	**5.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9130**	**4.9130**	**2.1000e-004**	**0.0000**	**4.9182**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0682	0.6776	0.4220	7.1000e-004		0.0365	0.0365		0.0338	0.0338	0.0000	62.2509	62.2509	0.0181	0.0000	62.7036
Total	**0.0682**	**0.6776**	**0.4220**	**7.1000e-004**		**0.0365**	**0.0365**		**0.0338**	**0.0338**	**0.0000**	**62.2509**	**62.2509**	**0.0181**	**0.0000**	**62.7036**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8500e-003	3.5800e-003	0.0321	7.0000e-005	0.0191	6.0000e-005	0.0192	4.8300e-003	6.0000e-005	4.8900e-003	0.0000	6.6514	6.6514	2.9000e-004	0.0000	6.6586
Total	**3.8500e-003**	**3.5800e-003**	**0.0321**	**7.0000e-005**	**0.0191**	**6.0000e-005**	**0.0192**	**4.8300e-003**	**6.0000e-005**	**4.8900e-003**	**0.0000**	**6.6514**	**6.6514**	**2.9000e-004**	**0.0000**	**6.6586**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0682	0.6776	0.4220	7.1000e-004		0.0365	0.0365		0.0338	0.0338	0.0000	62.2508	62.2508	0.0181	0.0000	62.7035
Total	**0.0682**	**0.6776**	**0.4220**	**7.1000e-004**		**0.0365**	**0.0365**		**0.0338**	**0.0338**	**0.0000**	**62.2508**	**62.2508**	**0.0181**	**0.0000**	**62.7035**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8500e-003	3.5800e-003	0.0321	7.0000e-005	0.0191	6.0000e-005	0.0192	4.8300e-003	6.0000e-005	4.8900e-003	0.0000	6.6514	6.6514	2.9000e-004	0.0000	6.6586
Total	**3.8500e-003**	**3.5800e-003**	**0.0321**	**7.0000e-005**	**0.0191**	**6.0000e-005**	**0.0192**	**4.8300e-003**	**6.0000e-005**	**4.8900e-003**	**0.0000**	**6.6514**	**6.6514**	**2.9000e-004**	**0.0000**	**6.6586**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0666	0.6662	0.4339	7.5000e-004		0.0345	0.0345		0.0320	0.0320	0.0000	65.0894	65.0894	0.0189	0.0000	65.5609
Total	**0.0666**	**0.6662**	**0.4339**	**7.5000e-004**		**0.0345**	**0.0345**		**0.0320**	**0.0320**	**0.0000**	**65.0894**	**65.0894**	**0.0189**	**0.0000**	**65.5609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	3.3400e-003	0.0305	7.0000e-005	0.0200	6.0000e-005	0.0200	5.0500e-003	6.0000e-005	5.1100e-003	0.0000	6.7207	6.7207	2.7000e-004	0.0000	6.7274
Total	**3.7100e-003**	**3.3400e-003**	**0.0305**	**7.0000e-005**	**0.0200**	**6.0000e-005**	**0.0200**	**5.0500e-003**	**6.0000e-005**	**5.1100e-003**	**0.0000**	**6.7207**	**6.7207**	**2.7000e-004**	**0.0000**	**6.7274**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0666	0.6662	0.4339	7.5000e-004		0.0345	0.0345		0.0320	0.0320	0.0000	65.0893	65.0893	0.0189	0.0000	65.5609
Total	**0.0666**	**0.6662**	**0.4339**	**7.5000e-004**		**0.0345**	**0.0345**		**0.0320**	**0.0320**	**0.0000**	**65.0893**	**65.0893**	**0.0189**	**0.0000**	**65.5609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	3.3400e-003	0.0305	7.0000e-005	0.0200	6.0000e-005	0.0200	5.0500e-003	6.0000e-005	5.1100e-003	0.0000	6.7207	6.7207	2.7000e-004	0.0000	6.7274
Total	**3.7100e-003**	**3.3400e-003**	**0.0305**	**7.0000e-005**	**0.0200**	**6.0000e-005**	**0.0200**	**5.0500e-003**	**6.0000e-005**	**5.1100e-003**	**0.0000**	**6.7207**	**6.7207**	**2.7000e-004**	**0.0000**	**6.7274**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1769	1.7335	1.9765	3.0900e-003		0.0926	0.0926		0.0861	0.0861	0.0000	270.9208	270.9208	0.0798	0.0000	272.9162
Total	**1.9294**	**1.7335**	**1.9765**	**3.0900e-003**		**0.0926**	**0.0926**		**0.0861**	**0.0861**	**0.0000**	**270.9208**	**270.9208**	**0.0798**	**0.0000**	**272.9162**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5259	0.4729	4.3135	0.0106	1.9309	8.9400e-003	1.9398	0.4951	8.2400e-003	0.5034	0.0000	952.0043	952.0043	0.0378	0.0000	952.9486
Total	**0.5259**	**0.4729**	**4.3135**	**0.0106**	**1.9309**	**8.9400e-003**	**1.9398**	**0.4951**	**8.2400e-003**	**0.5034**	**0.0000**	**952.0043**	**952.0043**	**0.0378**	**0.0000**	**952.9486**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1769	1.7335	1.9765	3.0900e-003		0.0926	0.0926		0.0861	0.0861	0.0000	270.9205	270.9205	0.0798	0.0000	272.9159
Total	**1.9294**	**1.7335**	**1.9765**	**3.0900e-003**		**0.0926**	**0.0926**		**0.0861**	**0.0861**	**0.0000**	**270.9205**	**270.9205**	**0.0798**	**0.0000**	**272.9159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5259	0.4729	4.3135	0.0106	1.9309	8.9400e-003	1.9398	0.4951	8.2400e-003	0.5034	0.0000	952.0043	952.0043	0.0378	0.0000	952.9486
Total	**0.5259**	**0.4729**	**4.3135**	**0.0106**	**1.9309**	**8.9400e-003**	**1.9398**	**0.4951**	**8.2400e-003**	**0.5034**	**0.0000**	**952.0043**	**952.0043**	**0.0378**	**0.0000**	**952.9486**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1700	1.6293	2.1312	3.3500e-003		0.0845	0.0845		0.0785	0.0785	0.0000	293.5505	293.5505	0.0864	0.0000	295.7097
Total	**2.0684**	**1.6293**	**2.1312**	**3.3500e-003**		**0.0845**	**0.0845**		**0.0785**	**0.0785**	**0.0000**	**293.5505**	**293.5505**	**0.0864**	**0.0000**	**295.7097**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5281	0.4591	4.2605	0.0110	2.0918	9.3400e-003	2.1011	0.5364	8.6100e-003	0.5450	0.0000	995.0453	995.0453	0.0366	0.0000	995.9595
Total	**0.5281**	**0.4591**	**4.2605**	**0.0110**	**2.0918**	**9.3400e-003**	**2.1011**	**0.5364**	**8.6100e-003**	**0.5450**	**0.0000**	**995.0453**	**995.0453**	**0.0366**	**0.0000**	**995.9595**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1700	1.6293	2.1312	3.3500e-003		0.0845	0.0845		0.0785	0.0785	0.0000	293.5502	293.5502	0.0864	0.0000	295.7094
Total	**2.0684**	**1.6293**	**2.1312**	**3.3500e-003**		**0.0845**	**0.0845**		**0.0785**	**0.0785**	**0.0000**	**293.5502**	**293.5502**	**0.0864**	**0.0000**	**295.7094**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5281	0.4591	4.2605	0.0110	2.0918	9.3400e-003	2.1011	0.5364	8.6100e-003	0.5450	0.0000	995.0453	995.0453	0.0366	0.0000	995.9595
Total	**0.5281**	**0.4591**	**4.2605**	**0.0110**	**2.0918**	**9.3400e-003**	**2.1011**	**0.5364**	**8.6100e-003**	**0.5450**	**0.0000**	**995.0453**	**995.0453**	**0.0366**	**0.0000**	**995.9595**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1592	1.4943	2.1314	3.3500e-003		0.0755	0.0755		0.0702	0.0702	0.0000	293.5416	293.5416	0.0862	0.0000	295.6963
Total	**2.0576**	**1.4943**	**2.1314**	**3.3500e-003**		**0.0755**	**0.0755**		**0.0702**	**0.0702**	**0.0000**	**293.5416**	**293.5416**	**0.0862**	**0.0000**	**295.6963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4902	0.4115	3.8768	0.0106	2.0918	9.0400e-003	2.1008	0.5364	8.3300e-003	0.5447	0.0000	958.1812	958.1812	0.0326	0.0000	958.9962
Total	**0.4902**	**0.4115**	**3.8768**	**0.0106**	**2.0918**	**9.0400e-003**	**2.1008**	**0.5364**	**8.3300e-003**	**0.5447**	**0.0000**	**958.1812**	**958.1812**	**0.0326**	**0.0000**	**958.9962**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1592	1.4943	2.1314	3.3500e-003		0.0755	0.0755		0.0702	0.0702	0.0000	293.5412	293.5412	0.0862	0.0000	295.6959
Total	**2.0576**	**1.4943**	**2.1314**	**3.3500e-003**		**0.0755**	**0.0755**		**0.0702**	**0.0702**	**0.0000**	**293.5412**	**293.5412**	**0.0862**	**0.0000**	**295.6959**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4902	0.4115	3.8768	0.0106	2.0918	9.0400e-003	2.1008	0.5364	8.3300e-003	0.5447	0.0000	958.1812	958.1812	0.0326	0.0000	958.9962
Total	**0.4902**	**0.4115**	**3.8768**	**0.0106**	**2.0918**	**9.0400e-003**	**2.1008**	**0.5364**	**8.3300e-003**	**0.5447**	**0.0000**	**958.1812**	**958.1812**	**0.0326**	**0.0000**	**958.9962**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1531	1.4074	2.1531	3.3800e-003		0.0694	0.0694		0.0645	0.0645	0.0000	295.7952	295.7952	0.0867	0.0000	297.9635
Total	**2.0662**	**1.4074**	**2.1531**	**3.3800e-003**		**0.0694**	**0.0694**		**0.0645**	**0.0645**	**0.0000**	**295.7952**	**295.7952**	**0.0867**	**0.0000**	**297.9635**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4604	0.3729	3.5817	0.0103	2.1079	8.8300e-003	2.1167	0.5405	8.1300e-003	0.5487	0.0000	928.4017	928.4017	0.0294	0.0000	929.1367
Total	**0.4604**	**0.3729**	**3.5817**	**0.0103**	**2.1079**	**8.8300e-003**	**2.1167**	**0.5405**	**8.1300e-003**	**0.5487**	**0.0000**	**928.4017**	**928.4017**	**0.0294**	**0.0000**	**929.1367**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1531	1.4074	2.1531	3.3800e-003		0.0694	0.0694		0.0645	0.0645	0.0000	295.7948	295.7948	0.0867	0.0000	297.9631
Total	**2.0662**	**1.4074**	**2.1531**	**3.3800e-003**		**0.0694**	**0.0694**		**0.0645**	**0.0645**	**0.0000**	**295.7948**	**295.7948**	**0.0867**	**0.0000**	**297.9631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4604	0.3729	3.5817	0.0103	2.1079	8.8300e-003	2.1167	0.5405	8.1300e-003	0.5487	0.0000	928.4017	928.4017	0.0294	0.0000	929.1367
Total	**0.4604**	**0.3729**	**3.5817**	**0.0103**	**2.1079**	**8.8300e-003**	**2.1167**	**0.5405**	**8.1300e-003**	**0.5487**	**0.0000**	**928.4017**	**928.4017**	**0.0294**	**0.0000**	**929.1367**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4303	0.3361	3.2847	9.8300e-003	2.0998	8.6100e-003	2.1084	0.5385	7.9300e-003	0.5464	0.0000	888.2280	888.2280	0.0264	0.0000	888.8891
Total	**0.4303**	**0.3361**	**3.2847**	**9.8300e-003**	**2.0998**	**8.6100e-003**	**2.1084**	**0.5385**	**7.9300e-003**	**0.5464**	**0.0000**	**888.2280**	**888.2280**	**0.0264**	**0.0000**	**888.8891**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4303	0.3361	3.2847	9.8300e-003	2.0998	8.6100e-003	2.1084	0.5385	7.9300e-003	0.5464	0.0000	888.2280	888.2280	0.0264	0.0000	888.8891
Total	**0.4303**	**0.3361**	**3.2847**	**9.8300e-003**	**2.0998**	**8.6100e-003**	**2.1084**	**0.5385**	**7.9300e-003**	**0.5464**	**0.0000**	**888.2280**	**888.2280**	**0.0264**	**0.0000**	**888.8891**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4049	0.3050	3.0188	9.4200e-003	2.0998	8.2500e-003	2.1081	0.5385	7.6000e-003	0.5461	0.0000	851.5289	851.5289	0.0237	0.0000	852.1219
Total	**0.4049**	**0.3050**	**3.0188**	**9.4200e-003**	**2.0998**	**8.2500e-003**	**2.1081**	**0.5385**	**7.6000e-003**	**0.5461**	**0.0000**	**851.5289**	**851.5289**	**0.0237**	**0.0000**	**852.1219**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4049	0.3050	3.0188	9.4200e-003	2.0998	8.2500e-003	2.1081	0.5385	7.6000e-003	0.5461	0.0000	851.5289	851.5289	0.0237	0.0000	852.1219
Total	**0.4049**	**0.3050**	**3.0188**	**9.4200e-003**	**2.0998**	**8.2500e-003**	**2.1081**	**0.5385**	**7.6000e-003**	**0.5461**	**0.0000**	**851.5289**	**851.5289**	**0.0237**	**0.0000**	**852.1219**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3811	0.2772	2.7935	9.0900e-003	2.0998	7.7700e-003	2.1076	0.5385	7.1500e-003	0.5456	0.0000	822.2877	822.2877	0.0215	0.0000	822.8242
Total	**0.3811**	**0.2772**	**2.7935**	**9.0900e-003**	**2.0998**	**7.7700e-003**	**2.1076**	**0.5385**	**7.1500e-003**	**0.5456**	**0.0000**	**822.2877**	**822.2877**	**0.0215**	**0.0000**	**822.8242**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3811	0.2772	2.7935	9.0900e-003	2.0998	7.7700e-003	2.1076	0.5385	7.1500e-003	0.5456	0.0000	822.2877	822.2877	0.0215	0.0000	822.8242
Total	**0.3811**	**0.2772**	**2.7935**	**9.0900e-003**	**2.0998**	**7.7700e-003**	**2.1076**	**0.5385**	**7.1500e-003**	**0.5456**	**0.0000**	**822.2877**	**822.2877**	**0.0215**	**0.0000**	**822.8242**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1412	1.2645	2.1303	3.3500e-003		0.0611	0.0611		0.0568	0.0568	0.0000	293.4426	293.4426	0.0860	0.0000	295.5921
Total	**2.0397**	**1.2645**	**2.1303**	**3.3500e-003**		**0.0611**	**0.0611**		**0.0568**	**0.0568**	**0.0000**	**293.4426**	**293.4426**	**0.0860**	**0.0000**	**295.5921**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3557	0.2515	2.5857	8.7700e-003	2.0918	7.2100e-003	2.0990	0.5364	6.6300e-003	0.5430	0.0000	793.2863	793.2863	0.0194	0.0000	793.7724
Total	**0.3557**	**0.2515**	**2.5857**	**8.7700e-003**	**2.0918**	**7.2100e-003**	**2.0990**	**0.5364**	**6.6300e-003**	**0.5430**	**0.0000**	**793.2863**	**793.2863**	**0.0194**	**0.0000**	**793.7724**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1412	1.2645	2.1303	3.3500e-003		0.0611	0.0611		0.0568	0.0568	0.0000	293.4423	293.4423	0.0860	0.0000	295.5918
Total	**2.0397**	**1.2645**	**2.1303**	**3.3500e-003**		**0.0611**	**0.0611**		**0.0568**	**0.0568**	**0.0000**	**293.4423**	**293.4423**	**0.0860**	**0.0000**	**295.5918**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3557	0.2515	2.5857	8.7700e-003	2.0918	7.2100e-003	2.0990	0.5364	6.6300e-003	0.5430	0.0000	793.2863	793.2863	0.0194	0.0000	793.7724
Total	**0.3557**	**0.2515**	**2.5857**	**8.7700e-003**	**2.0918**	**7.2100e-003**	**2.0990**	**0.5364**	**6.6300e-003**	**0.5430**	**0.0000**	**793.2863**	**793.2863**	**0.0194**	**0.0000**	**793.7724**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3315	0.2293	2.4044	8.5500e-003	2.0998	6.7300e-003	2.1065	0.5385	6.1900e-003	0.5446	0.0000	773.2868	773.2868	0.0176	0.0000	773.7275
Total	**0.3315**	**0.2293**	**2.4044**	**8.5500e-003**	**2.0998**	**6.7300e-003**	**2.1065**	**0.5385**	**6.1900e-003**	**0.5446**	**0.0000**	**773.2868**	**773.2868**	**0.0176**	**0.0000**	**773.7275**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3315	0.2293	2.4044	8.5500e-003	2.0998	6.7300e-003	2.1065	0.5385	6.1900e-003	0.5446	0.0000	773.2868	773.2868	0.0176	0.0000	773.7275
Total	**0.3315**	**0.2293**	**2.4044**	**8.5500e-003**	**2.0998**	**6.7300e-003**	**2.1065**	**0.5385**	**6.1900e-003**	**0.5446**	**0.0000**	**773.2868**	**773.2868**	**0.0176**	**0.0000**	**773.7275**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8186	347.8186	0.0161	0.0000	348.2209
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8186**	**347.8186**	**0.0161**	**0.0000**	**348.2209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3062	0.2077	2.2313	8.3200e-003	2.0998	6.2600e-003	2.1061	0.5385	5.7600e-003	0.5442	0.0000	752.8711	752.8711	0.0159	0.0000	753.2689
Total	**0.3062**	**0.2077**	**2.2313**	**8.3200e-003**	**2.0998**	**6.2600e-003**	**2.1061**	**0.5385**	**5.7600e-003**	**0.5442**	**0.0000**	**752.8711**	**752.8711**	**0.0159**	**0.0000**	**753.2689**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8182	347.8182	0.0161	0.0000	348.2205
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8182**	**347.8182**	**0.0161**	**0.0000**	**348.2205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3062	0.2077	2.2313	8.3200e-003	2.0998	6.2600e-003	2.1061	0.5385	5.7600e-003	0.5442	0.0000	752.8711	752.8711	0.0159	0.0000	753.2689
Total	**0.3062**	**0.2077**	**2.2313**	**8.3200e-003**	**2.0998**	**6.2600e-003**	**2.1061**	**0.5385**	**5.7600e-003**	**0.5442**	**0.0000**	**752.8711**	**752.8711**	**0.0159**	**0.0000**	**753.2689**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8186	347.8186	0.0161	0.0000	348.2209
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8186**	**347.8186**	**0.0161**	**0.0000**	**348.2209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2792	0.1866	2.0628	8.1200e-003	2.0998	5.8300e-003	2.1056	0.5385	5.3600e-003	0.5438	0.0000	734.8279	734.8279	0.0143	0.0000	735.1844
Total	**0.2792**	**0.1866**	**2.0628**	**8.1200e-003**	**2.0998**	**5.8300e-003**	**2.1056**	**0.5385**	**5.3600e-003**	**0.5438**	**0.0000**	**734.8279**	**734.8279**	**0.0143**	**0.0000**	**735.1844**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8182	347.8182	0.0161	0.0000	348.2205
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8182**	**347.8182**	**0.0161**	**0.0000**	**348.2205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2792	0.1866	2.0628	8.1200e-003	2.0998	5.8300e-003	2.1056	0.5385	5.3600e-003	0.5438	0.0000	734.8279	734.8279	0.0143	0.0000	735.1844
Total	**0.2792**	**0.1866**	**2.0628**	**8.1200e-003**	**2.0998**	**5.8300e-003**	**2.1056**	**0.5385**	**5.3600e-003**	**0.5438**	**0.0000**	**734.8279**	**734.8279**	**0.0143**	**0.0000**	**735.1844**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1985	1.0449	2.3118	4.0600e-003		0.0460	0.0460		0.0460	0.0460	0.0000	349.1513	349.1513	0.0162	0.0000	349.5551
Total	**2.1116**	**1.0449**	**2.3118**	**4.0600e-003**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**0.0000**	**349.1513**	**349.1513**	**0.0162**	**0.0000**	**349.5551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2561	0.1692	1.9235	7.9700e-003	2.1079	5.4500e-003	2.1133	0.5405	5.0100e-003	0.5455	0.0000	721.7480	721.7480	0.0129	0.0000	722.0698
Total	**0.2561**	**0.1692**	**1.9235**	**7.9700e-003**	**2.1079**	**5.4500e-003**	**2.1133**	**0.5405**	**5.0100e-003**	**0.5455**	**0.0000**	**721.7480**	**721.7480**	**0.0129**	**0.0000**	**722.0698**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1985	1.0449	2.3118	4.0600e-003		0.0460	0.0460		0.0460	0.0460	0.0000	349.1509	349.1509	0.0162	0.0000	349.5547
Total	**2.1116**	**1.0449**	**2.3118**	**4.0600e-003**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**0.0000**	**349.1509**	**349.1509**	**0.0162**	**0.0000**	**349.5547**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2561	0.1692	1.9235	7.9700e-003	2.1079	5.4500e-003	2.1133	0.5405	5.0100e-003	0.5455	0.0000	721.7480	721.7480	0.0129	0.0000	722.0698
Total	**0.2561**	**0.1692**	**1.9235**	**7.9700e-003**	**2.1079**	**5.4500e-003**	**2.1133**	**0.5405**	**5.0100e-003**	**0.5455**	**0.0000**	**721.7480**	**721.7480**	**0.0129**	**0.0000**	**722.0698**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4860	346.4860	0.0160	0.0000	346.8868
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4860**	**346.4860**	**0.0160**	**0.0000**	**346.8868**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2337	0.1527	1.7847	7.7600e-003	2.0918	5.0500e-003	2.0968	0.5364	4.6400e-003	0.5410	0.0000	702.4748	702.4748	0.0116	0.0000	702.7637
Total	**0.2337**	**0.1527**	**1.7847**	**7.7600e-003**	**2.0918**	**5.0500e-003**	**2.0968**	**0.5364**	**4.6400e-003**	**0.5410**	**0.0000**	**702.4748**	**702.4748**	**0.0116**	**0.0000**	**702.7637**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4856	346.4856	0.0160	0.0000	346.8863
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4856**	**346.4856**	**0.0160**	**0.0000**	**346.8863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2337	0.1527	1.7847	7.7600e-003	2.0918	5.0500e-003	2.0968	0.5364	4.6400e-003	0.5410	0.0000	702.4748	702.4748	0.0116	0.0000	702.7637
Total	**0.2337**	**0.1527**	**1.7847**	**7.7600e-003**	**2.0918**	**5.0500e-003**	**2.0968**	**0.5364**	**4.6400e-003**	**0.5410**	**0.0000**	**702.4748**	**702.4748**	**0.0116**	**0.0000**	**702.7637**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4860	346.4860	0.0160	0.0000	346.8868
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4860**	**346.4860**	**0.0160**	**0.0000**	**346.8868**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2168	0.1403	1.6712	7.6200e-003	2.0918	4.7200e-003	2.0965	0.5364	4.3400e-003	0.5407	0.0000	690.4668	690.4668	0.0104	0.0000	690.7279
Total	**0.2168**	**0.1403**	**1.6712**	**7.6200e-003**	**2.0918**	**4.7200e-003**	**2.0965**	**0.5364**	**4.3400e-003**	**0.5407**	**0.0000**	**690.4668**	**690.4668**	**0.0104**	**0.0000**	**690.7279**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4856	346.4856	0.0160	0.0000	346.8863
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4856**	**346.4856**	**0.0160**	**0.0000**	**346.8863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2168	0.1403	1.6712	7.6200e-003	2.0918	4.7200e-003	2.0965	0.5364	4.3400e-003	0.5407	0.0000	690.4668	690.4668	0.0104	0.0000	690.7279
Total	**0.2168**	**0.1403**	**1.6712**	**7.6200e-003**	**2.0918**	**4.7200e-003**	**2.0965**	**0.5364**	**4.3400e-003**	**0.5407**	**0.0000**	**690.4668**	**690.4668**	**0.0104**	**0.0000**	**690.7279**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1649	0.7380	2.3075	4.0600e-003		0.0259	0.0259		0.0259	0.0259	0.0000	349.1513	349.1513	0.0134	0.0000	349.4859
Total	**2.0779**	**0.7380**	**2.3075**	**4.0600e-003**		**0.0259**	**0.0259**		**0.0259**	**0.0259**	**0.0000**	**349.1513**	**349.1513**	**0.0134**	**0.0000**	**349.4859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2035	0.1315	1.5844	7.5600e-003	2.1079	4.4600e-003	2.1123	0.5405	4.1000e-003	0.5446	0.0000	685.3424	685.3424	9.5500e-003	0.0000	685.5810
Total	**0.2035**	**0.1315**	**1.5844**	**7.5600e-003**	**2.1079**	**4.4600e-003**	**2.1123**	**0.5405**	**4.1000e-003**	**0.5446**	**0.0000**	**685.3424**	**685.3424**	**9.5500e-003**	**0.0000**	**685.5810**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1649	0.7380	2.3075	4.0600e-003		0.0259	0.0259		0.0259	0.0259	0.0000	349.1509	349.1509	0.0134	0.0000	349.4855
Total	**2.0779**	**0.7380**	**2.3075**	**4.0600e-003**		**0.0259**	**0.0259**		**0.0259**	**0.0259**	**0.0000**	**349.1509**	**349.1509**	**0.0134**	**0.0000**	**349.4855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2035	0.1315	1.5844	7.5600e-003	2.1079	4.4600e-003	2.1123	0.5405	4.1000e-003	0.5446	0.0000	685.3424	685.3424	9.5500e-003	0.0000	685.5810
Total	**0.2035**	**0.1315**	**1.5844**	**7.5600e-003**	**2.1079**	**4.4600e-003**	**2.1123**	**0.5405**	**4.1000e-003**	**0.5446**	**0.0000**	**685.3424**	**685.3424**	**9.5500e-003**	**0.0000**	**685.5810**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1636	0.7324	2.2899	4.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	346.4860	346.4860	0.0133	0.0000	346.8181
Total	**2.0621**	**0.7324**	**2.2899**	**4.0300e-003**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**346.4860**	**346.4860**	**0.0133**	**0.0000**	**346.8181**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2019	0.1305	1.5723	7.5100e-003	2.0918	4.4200e-003	2.0962	0.5364	4.0700e-003	0.5405	0.0000	680.1108	680.1108	9.4700e-003	0.0000	680.3476
Total	**0.2019**	**0.1305**	**1.5723**	**7.5100e-003**	**2.0918**	**4.4200e-003**	**2.0962**	**0.5364**	**4.0700e-003**	**0.5405**	**0.0000**	**680.1108**	**680.1108**	**9.4700e-003**	**0.0000**	**680.3476**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1636	0.7324	2.2899	4.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	346.4856	346.4856	0.0133	0.0000	346.8177
Total	**2.0621**	**0.7324**	**2.2899**	**4.0300e-003**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**346.4856**	**346.4856**	**0.0133**	**0.0000**	**346.8177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2019	0.1305	1.5723	7.5100e-003	2.0918	4.4200e-003	2.0962	0.5364	4.0700e-003	0.5405	0.0000	680.1108	680.1108	9.4700e-003	0.0000	680.3476
Total	**0.2019**	**0.1305**	**1.5723**	**7.5100e-003**	**2.0918**	**4.4200e-003**	**2.0962**	**0.5364**	**4.0700e-003**	**0.5405**	**0.0000**	**680.1108**	**680.1108**	**9.4700e-003**	**0.0000**	**680.3476**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.0548	0.2201	3.9000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	33.3160	33.3160	1.1200e-003	0.0000	33.3441
Total	**0.1966**	**0.0548**	**0.2201**	**3.9000e-004**		**1.5500e-003**	**1.5500e-003**		**1.5500e-003**	**1.5500e-003**	**0.0000**	**33.3160**	**33.3160**	**1.1200e-003**	**0.0000**	**33.3441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0145	9.6000e-003	0.1231	6.9000e-004	0.2011	3.3000e-004	0.2015	0.0516	3.0000e-004	0.0519	0.0000	62.2621	62.2621	6.4000e-004	0.0000	62.2781
Total	**0.0145**	**9.6000e-003**	**0.1231**	**6.9000e-004**	**0.2011**	**3.3000e-004**	**0.2015**	**0.0516**	**3.0000e-004**	**0.0519**	**0.0000**	**62.2621**	**62.2621**	**6.4000e-004**	**0.0000**	**62.2781**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.0548	0.2201	3.9000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	33.3159	33.3159	1.1200e-003	0.0000	33.3440
Total	**0.1966**	**0.0548**	**0.2201**	**3.9000e-004**		**1.5500e-003**	**1.5500e-003**		**1.5500e-003**	**1.5500e-003**	**0.0000**	**33.3159**	**33.3159**	**1.1200e-003**	**0.0000**	**33.3440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0145	9.6000e-003	0.1231	6.9000e-004	0.2011	3.3000e-004	0.2015	0.0516	3.0000e-004	0.0519	0.0000	62.2621	62.2621	6.4000e-004	0.0000	62.2781
Total	**0.0145**	**9.6000e-003**	**0.1231**	**6.9000e-004**	**0.2011**	**3.3000e-004**	**0.2015**	**0.0516**	**3.0000e-004**	**0.0519**	**0.0000**	**62.2621**	**62.2621**	**6.4000e-004**	**0.0000**	**62.2781**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0546	0.5620	0.6374	9.9000e-004		0.0295	0.0295		0.0271	0.0271	0.0000	87.1021	87.1021	0.0282	0.0000	87.8064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0546**	**0.5620**	**0.6374**	**9.9000e-004**		**0.0295**	**0.0295**		**0.0271**	**0.0271**	**0.0000**	**87.1021**	**87.1021**	**0.0282**	**0.0000**	**87.8064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6300e-003	2.3700e-003	0.0216	5.0000e-005	5.1800e-003	4.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.7666	4.7666	1.9000e-004	0.0000	4.7713
Total	**2.6300e-003**	**2.3700e-003**	**0.0216**	**5.0000e-005**	**5.1800e-003**	**4.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.7666**	**4.7666**	**1.9000e-004**	**0.0000**	**4.7713**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0546	0.5620	0.6374	9.9000e-004		0.0295	0.0295		0.0271	0.0271	0.0000	87.1020	87.1020	0.0282	0.0000	87.8063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0546**	**0.5620**	**0.6374**	**9.9000e-004**		**0.0295**	**0.0295**		**0.0271**	**0.0271**	**0.0000**	**87.1020**	**87.1020**	**0.0282**	**0.0000**	**87.8063**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6300e-003	2.3700e-003	0.0216	5.0000e-005	5.1800e-003	4.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.7666	4.7666	1.9000e-004	0.0000	4.7713
Total	**2.6300e-003**	**2.3700e-003**	**0.0216**	**5.0000e-005**	**5.1800e-003**	**4.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.7666**	**4.7666**	**1.9000e-004**	**0.0000**	**4.7713**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1435	1.3161	1.2514	2.0300e-003		0.0724	0.0724		0.0681	0.0681	0.0000	174.8861	174.8861	0.0422	0.0000	175.9410
Total	**0.1435**	**1.3161**	**1.2514**	**2.0300e-003**		**0.0724**	**0.0724**		**0.0681**	**0.0681**	**0.0000**	**174.8861**	**174.8861**	**0.0422**	**0.0000**	**175.9410**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4479	13.7813	3.6230	0.0342	0.7987	0.0423	0.8410	0.2308	0.0405	0.2713	0.0000	3,262.3529	3,262.3529	0.1454	0.0000	3,265.9890
Worker	1.6536	1.4872	13.5646	0.0332	3.2563	0.0281	3.2844	0.8659	0.0259	0.8918	0.0000	2,993.7439	2,993.7439	0.1188	0.0000	2,996.7133
Total	**2.1015**	**15.2685**	**17.1876**	**0.0673**	**4.0550**	**0.0704**	**4.1254**	**1.0967**	**0.0664**	**1.1631**	**0.0000**	**6,256.0968**	**6,256.0968**	**0.2642**	**0.0000**	**6,262.7023**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1435	1.3161	1.2514	2.0300e-003		0.0724	0.0724		0.0681	0.0681	0.0000	174.8859	174.8859	0.0422	0.0000	175.9407
Total	**0.1435**	**1.3161**	**1.2514**	**2.0300e-003**		**0.0724**	**0.0724**		**0.0681**	**0.0681**	**0.0000**	**174.8859**	**174.8859**	**0.0422**	**0.0000**	**175.9407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4479	13.7813	3.6230	0.0342	0.7987	0.0423	0.8410	0.2308	0.0405	0.2713	0.0000	3,262.3529	3,262.3529	0.1454	0.0000	3,265.9890
Worker	1.6536	1.4872	13.5646	0.0332	3.2563	0.0281	3.2844	0.8659	0.0259	0.8918	0.0000	2,993.7439	2,993.7439	0.1188	0.0000	2,996.7133
Total	**2.1015**	**15.2685**	**17.1876**	**0.0673**	**4.0550**	**0.0704**	**4.1254**	**1.0967**	**0.0664**	**1.1631**	**0.0000**	**6,256.0968**	**6,256.0968**	**0.2642**	**0.0000**	**6,262.7023**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7067	22.4502	5.6515	0.0583	1.3753	0.0634	1.4388	0.3975	0.0607	0.4581	0.0000	5,569.9723	5,569.9723	0.2424	0.0000	5,576.0328
Worker	2.6398	2.2946	21.2944	0.0551	5.6069	0.0467	5.6535	1.4910	0.0430	1.5340	0.0000	4,973.3942	4,973.3942	0.1828	0.0000	4,977.9633
Total	**3.3464**	**24.7448**	**26.9459**	**0.1134**	**6.9822**	**0.1101**	**7.0923**	**1.8884**	**0.1037**	**1.9921**	**0.0000**	**10,543.3665**	**10,543.3665**	**0.4252**	**0.0000**	**10,553.9961**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7067	22.4502	5.6515	0.0583	1.3753	0.0634	1.4388	0.3975	0.0607	0.4581	0.0000	5,569.9723	5,569.9723	0.2424	0.0000	5,576.0328
Worker	2.6398	2.2946	21.2944	0.0551	5.6069	0.0467	5.6535	1.4910	0.0430	1.5340	0.0000	4,973.3942	4,973.3942	0.1828	0.0000	4,977.9633
Total	**3.3464**	**24.7448**	**26.9459**	**0.1134**	**6.9822**	**0.1101**	**7.0923**	**1.8884**	**0.1037**	**1.9921**	**0.0000**	**10,543.3665**	**10,543.3665**	**0.4252**	**0.0000**	**10,553.9961**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5331	18.4874	4.8857	0.0573	1.3755	0.0275	1.4030	0.3975	0.0263	0.4238	0.0000	5,472.0598	5,472.0598	0.1976	0.0000	5,476.9998
Worker	2.4499	2.0566	19.3770	0.0530	5.6069	0.0452	5.6521	1.4910	0.0416	1.5326	0.0000	4,789.1415	4,789.1415	0.1629	0.0000	4,793.2148
Total	**2.9830**	**20.5439**	**24.2626**	**0.1103**	**6.9824**	**0.0727**	**7.0551**	**1.8885**	**0.0680**	**1.9564**	**0.0000**	**10,261.2013**	**10,261.2013**	**0.3605**	**0.0000**	**10,270.2146**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5331	18.4874	4.8857	0.0573	1.3755	0.0275	1.4030	0.3975	0.0263	0.4238	0.0000	5,472.0598	5,472.0598	0.1976	0.0000	5,476.9998
Worker	2.4499	2.0566	19.3770	0.0530	5.6069	0.0452	5.6521	1.4910	0.0416	1.5326	0.0000	4,789.1415	4,789.1415	0.1629	0.0000	4,793.2148
Total	**2.9830**	**20.5439**	**24.2626**	**0.1103**	**6.9824**	**0.0727**	**7.0551**	**1.8885**	**0.0680**	**1.9564**	**0.0000**	**10,261.2013**	**10,261.2013**	**0.3605**	**0.0000**	**10,270.2146**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5080	18.1979	4.5881	0.0573	1.3862	0.0258	1.4120	0.4006	0.0246	0.4253	0.0000	5,474.2926	5,474.2926	0.1963	0.0000	5,479.2000
Worker	2.3012	1.8636	17.9021	0.0514	5.6500	0.0441	5.6941	1.5024	0.0407	1.5431	0.0000	4,640.2986	4,640.2986	0.1470	0.0000	4,643.9726
Total	**2.8092**	**20.0615**	**22.4902**	**0.1086**	**7.0362**	**0.0699**	**7.1061**	**1.9030**	**0.0653**	**1.9683**	**0.0000**	**10,114.5912**	**10,114.5912**	**0.3433**	**0.0000**	**10,123.1726**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5080	18.1979	4.5881	0.0573	1.3862	0.0258	1.4120	0.4006	0.0246	0.4253	0.0000	5,474.2926	5,474.2926	0.1963	0.0000	5,479.2000
Worker	2.3012	1.8636	17.9021	0.0514	5.6500	0.0441	5.6941	1.5024	0.0407	1.5431	0.0000	4,640.2986	4,640.2986	0.1470	0.0000	4,643.9726
Total	**2.8092**	**20.0615**	**22.4902**	**0.1086**	**7.0362**	**0.0699**	**7.1061**	**1.9030**	**0.0653**	**1.9683**	**0.0000**	**10,114.5912**	**10,114.5912**	**0.3433**	**0.0000**	**10,123.1726**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4811	17.7442	4.3014	0.0567	1.3810	0.0239	1.4049	0.3991	0.0228	0.4219	0.0000	5,416.1107	5,416.1107	0.1927	0.0000	5,420.9286
Worker	2.1506	1.6799	16.4175	0.0491	5.6285	0.0430	5.6715	1.4967	0.0396	1.5363	0.0000	4,439.5043	4,439.5043	0.1322	0.0000	4,442.8083
Total	**2.6318**	**19.4241**	**20.7190**	**0.1058**	**7.0094**	**0.0669**	**7.0763**	**1.8958**	**0.0624**	**1.9583**	**0.0000**	**9,855.6150**	**9,855.6150**	**0.3249**	**0.0000**	**9,863.7369**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4811	17.7442	4.3014	0.0567	1.3810	0.0239	1.4049	0.3991	0.0228	0.4219	0.0000	5,416.1107	5,416.1107	0.1927	0.0000	5,420.9286
Worker	2.1506	1.6799	16.4175	0.0491	5.6285	0.0430	5.6715	1.4967	0.0396	1.5363	0.0000	4,439.5043	4,439.5043	0.1322	0.0000	4,442.8083
Total	**2.6318**	**19.4241**	**20.7190**	**0.1058**	**7.0094**	**0.0669**	**7.0763**	**1.8958**	**0.0624**	**1.9583**	**0.0000**	**9,855.6150**	**9,855.6150**	**0.3249**	**0.0000**	**9,863.7369**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4625	17.4287	4.1106	0.0564	1.3811	0.0226	1.4036	0.3992	0.0216	0.4207	0.0000	5,388.1339	5,388.1339	0.1903	0.0000	5,392.8908
Worker	2.0236	1.5245	15.0886	0.0471	5.6285	0.0413	5.6697	1.4967	0.0380	1.5347	0.0000	4,256.0762	4,256.0762	0.1186	0.0000	4,259.0402
Total	**2.4861**	**18.9532**	**19.1992**	**0.1034**	**7.0095**	**0.0638**	**7.0733**	**1.8959**	**0.0596**	**1.9554**	**0.0000**	**9,644.2101**	**9,644.2101**	**0.3088**	**0.0000**	**9,651.9310**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4625	17.4287	4.1106	0.0564	1.3811	0.0226	1.4036	0.3992	0.0216	0.4207	0.0000	5,388.1339	5,388.1339	0.1903	0.0000	5,392.8908
Worker	2.0236	1.5245	15.0886	0.0471	5.6285	0.0413	5.6697	1.4967	0.0380	1.5347	0.0000	4,256.0762	4,256.0762	0.1186	0.0000	4,259.0402
Total	**2.4861**	**18.9532**	**19.1992**	**0.1034**	**7.0095**	**0.0638**	**7.0733**	**1.8959**	**0.0596**	**1.9554**	**0.0000**	**9,644.2101**	**9,644.2101**	**0.3088**	**0.0000**	**9,651.9310**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4464	17.1399	3.9384	0.0561	1.3811	0.0214	1.4026	0.3992	0.0205	0.4197	0.0000	5,363.7547	5,363.7547	0.1879	0.0000	5,368.4523
Worker	1.9047	1.3853	13.9621	0.0454	5.6285	0.0389	5.6673	1.4967	0.0358	1.5325	0.0000	4,109.9239	4,109.9239	0.1073	0.0000	4,112.6058
Total	**2.3511**	**18.5252**	**17.9005**	**0.1015**	**7.0096**	**0.0603**	**7.0699**	**1.8959**	**0.0562**	**1.9521**	**0.0000**	**9,473.6785**	**9,473.6785**	**0.2952**	**0.0000**	**9,481.0581**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4464	17.1399	3.9384	0.0561	1.3811	0.0214	1.4026	0.3992	0.0205	0.4197	0.0000	5,363.7547	5,363.7547	0.1879	0.0000	5,368.4523
Worker	1.9047	1.3853	13.9621	0.0454	5.6285	0.0389	5.6673	1.4967	0.0358	1.5325	0.0000	4,109.9239	4,109.9239	0.1073	0.0000	4,112.6058
Total	**2.3511**	**18.5252**	**17.9005**	**0.1015**	**7.0096**	**0.0603**	**7.0699**	**1.8959**	**0.0562**	**1.9521**	**0.0000**	**9,473.6785**	**9,473.6785**	**0.2952**	**0.0000**	**9,481.0581**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4314	16.8333	3.8013	0.0557	1.3759	0.0203	1.3962	0.3977	0.0194	0.4171	0.0000	5,322.9404	5,322.9404	0.1845	0.0000	5,327.5536
Worker	1.7778	1.2569	12.9236	0.0438	5.6069	0.0360	5.6429	1.4910	0.0331	1.5241	0.0000	3,964.9707	3,964.9707	0.0972	0.0000	3,967.3999
Total	**2.2092**	**18.0901**	**16.7249**	**0.0995**	**6.9828**	**0.0563**	**7.0391**	**1.8886**	**0.0526**	**1.9412**	**0.0000**	**9,287.9112**	**9,287.9112**	**0.2817**	**0.0000**	**9,294.9535**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4314	16.8333	3.8013	0.0557	1.3759	0.0203	1.3962	0.3977	0.0194	0.4171	0.0000	5,322.9404	5,322.9404	0.1845	0.0000	5,327.5536
Worker	1.7778	1.2569	12.9236	0.0438	5.6069	0.0360	5.6429	1.4910	0.0331	1.5241	0.0000	3,964.9707	3,964.9707	0.0972	0.0000	3,967.3999
Total	**2.2092**	**18.0901**	**16.7249**	**0.0995**	**6.9828**	**0.0563**	**7.0391**	**1.8886**	**0.0526**	**1.9412**	**0.0000**	**9,287.9112**	**9,287.9112**	**0.2817**	**0.0000**	**9,294.9535**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4220	16.6778	3.7127	0.0557	1.3813	0.0195	1.4007	0.3992	0.0186	0.4178	0.0000	5,325.8273	5,325.8273	0.1831	0.0000	5,330.4058
Worker	1.6571	1.1460	12.0178	0.0427	5.6285	0.0336	5.6621	1.4967	0.0310	1.5277	0.0000	3,865.0099	3,865.0099	0.0881	0.0000	3,867.2125
Total	**2.0792**	**17.8238**	**15.7304**	**0.0984**	**7.0097**	**0.0531**	**7.0628**	**1.8959**	**0.0496**	**1.9455**	**0.0000**	**9,190.8372**	**9,190.8372**	**0.2712**	**0.0000**	**9,197.6183**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4220	16.6778	3.7127	0.0557	1.3813	0.0195	1.4007	0.3992	0.0186	0.4178	0.0000	5,325.8273	5,325.8273	0.1831	0.0000	5,330.4058
Worker	1.6571	1.1460	12.0178	0.0427	5.6285	0.0336	5.6621	1.4967	0.0310	1.5277	0.0000	3,865.0099	3,865.0099	0.0881	0.0000	3,867.2125
Total	**2.0792**	**17.8238**	**15.7304**	**0.0984**	**7.0097**	**0.0531**	**7.0628**	**1.8959**	**0.0496**	**1.9455**	**0.0000**	**9,190.8372**	**9,190.8372**	**0.2712**	**0.0000**	**9,197.6183**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4131	16.4897	3.6355	0.0556	1.3813	0.0187	1.4000	0.3992	0.0179	0.4171	0.0000	5,312.3620	5,312.3620	0.1809	0.0000	5,316.8840
Worker	1.5306	1.0379	11.1526	0.0416	5.6285	0.0313	5.6597	1.4967	0.0288	1.5255	0.0000	3,762.9688	3,762.9688	0.0796	0.0000	3,764.9575
Total	**1.9437**	**17.5276**	**14.7881**	**0.0971**	**7.0098**	**0.0500**	**7.0597**	**1.8959**	**0.0466**	**1.9426**	**0.0000**	**9,075.3308**	**9,075.3308**	**0.2604**	**0.0000**	**9,081.8415**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4131	16.4897	3.6355	0.0556	1.3813	0.0187	1.4000	0.3992	0.0179	0.4171	0.0000	5,312.3620	5,312.3620	0.1809	0.0000	5,316.8840
Worker	1.5306	1.0379	11.1526	0.0416	5.6285	0.0313	5.6597	1.4967	0.0288	1.5255	0.0000	3,762.9688	3,762.9688	0.0796	0.0000	3,764.9575
Total	**1.9437**	**17.5276**	**14.7881**	**0.0971**	**7.0098**	**0.0500**	**7.0597**	**1.8959**	**0.0466**	**1.9426**	**0.0000**	**9,075.3308**	**9,075.3308**	**0.2604**	**0.0000**	**9,081.8415**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4057	16.3278	3.5707	0.0554	1.3813	0.0180	1.3994	0.3993	0.0172	0.4165	0.0000	5,302.5051	5,302.5051	0.1793	0.0000	5,306.9867
Worker	1.3955	0.9329	10.3103	0.0406	5.6285	0.0291	5.6576	1.4967	0.0268	1.5235	0.0000	3,672.7862	3,672.7862	0.0713	0.0000	3,674.5682
Total	**1.8012**	**17.2607**	**13.8810**	**0.0960**	**7.0098**	**0.0471**	**7.0569**	**1.8960**	**0.0440**	**1.9399**	**0.0000**	**8,975.2913**	**8,975.2913**	**0.2506**	**0.0000**	**8,981.5548**

3.8 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4057	16.3278	3.5707	0.0554	1.3813	0.0180	1.3994	0.3993	0.0172	0.4165	0.0000	5,302.5051	5,302.5051	0.1793	0.0000	5,306.9867
Worker	1.3955	0.9329	10.3103	0.0406	5.6285	0.0291	5.6576	1.4967	0.0268	1.5235	0.0000	3,672.7862	3,672.7862	0.0713	0.0000	3,674.5682
Total	**1.8012**	**17.2607**	**13.8810**	**0.0960**	**7.0098**	**0.0471**	**7.0569**	**1.8960**	**0.0440**	**1.9399**	**0.0000**	**8,975.2913**	**8,975.2913**	**0.2506**	**0.0000**	**8,981.5548**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3479	344.3479	0.0138	0.0000	344.6933
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3479**	**344.3479**	**0.0138**	**0.0000**	**344.6933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4012	16.2476	3.5359	0.0556	1.3867	0.0175	1.4041	0.4008	0.0167	0.4175	0.0000	5,316.9228	5,316.9228	0.1784	0.0000	5,321.3823
Worker	1.2802	0.8456	9.6140	0.0398	5.6500	0.0272	5.6772	1.5024	0.0251	1.5275	0.0000	3,607.4107	3,607.4107	0.0643	0.0000	3,609.0192
Total	**1.6814**	**17.0931**	**13.1499**	**0.0954**	**7.0367**	**0.0447**	**7.0814**	**1.9032**	**0.0417**	**1.9450**	**0.0000**	**8,924.3335**	**8,924.3335**	**0.2427**	**0.0000**	**8,930.4015**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3475	344.3475	0.0138	0.0000	344.6929
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3475**	**344.3475**	**0.0138**	**0.0000**	**344.6929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4012	16.2476	3.5359	0.0556	1.3867	0.0175	1.4041	0.4008	0.0167	0.4175	0.0000	5,316.9228	5,316.9228	0.1784	0.0000	5,321.3823
Worker	1.2802	0.8456	9.6140	0.0398	5.6500	0.0272	5.6772	1.5024	0.0251	1.5275	0.0000	3,607.4107	3,607.4107	0.0643	0.0000	3,609.0192
Total	**1.6814**	**17.0931**	**13.1499**	**0.0954**	**7.0367**	**0.0447**	**7.0814**	**1.9032**	**0.0417**	**1.9450**	**0.0000**	**8,924.3335**	**8,924.3335**	**0.2427**	**0.0000**	**8,930.4015**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3934	15.9991	3.4714	0.0551	1.3761	0.0168	1.3929	0.3978	0.0161	0.4138	0.0000	5,273.1800	5,273.1800	0.1758	0.0000	5,277.5761
Worker	1.1680	0.7630	8.9202	0.0388	5.6069	0.0252	5.6321	1.4910	0.0232	1.5142	0.0000	3,511.0802	3,511.0802	0.0578	0.0000	3,512.5241
Total	**1.5614**	**16.7620**	**12.3916**	**0.0939**	**6.9830**	**0.0420**	**7.0250**	**1.8887**	**0.0393**	**1.9280**	**0.0000**	**8,784.2602**	**8,784.2602**	**0.2336**	**0.0000**	**8,790.1002**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3934	15.9991	3.4714	0.0551	1.3761	0.0168	1.3929	0.3978	0.0161	0.4138	0.0000	5,273.1800	5,273.1800	0.1758	0.0000	5,277.5761
Worker	1.1680	0.7630	8.9202	0.0388	5.6069	0.0252	5.6321	1.4910	0.0232	1.5142	0.0000	3,511.0802	3,511.0802	0.0578	0.0000	3,512.5241
Total	**1.5614**	**16.7620**	**12.3916**	**0.0939**	**6.9830**	**0.0420**	**7.0250**	**1.8887**	**0.0393**	**1.9280**	**0.0000**	**8,784.2602**	**8,784.2602**	**0.2336**	**0.0000**	**8,790.1002**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3891	15.8917	3.4355	0.0551	1.3762	0.0163	1.3925	0.3978	0.0156	0.4133	0.0000	5,272.0116	5,272.0116	0.1747	0.0000	5,276.3801
Worker	1.0838	0.7012	8.3529	0.0381	5.6069	0.0236	5.6305	1.4910	0.0217	1.5127	0.0000	3,451.0626	3,451.0626	0.0522	0.0000	3,452.3674
Total	**1.4728**	**16.5929**	**11.7884**	**0.0932**	**6.9830**	**0.0399**	**7.0229**	**1.8887**	**0.0373**	**1.9260**	**0.0000**	**8,723.0741**	**8,723.0741**	**0.2269**	**0.0000**	**8,728.7475**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3891	15.8917	3.4355	0.0551	1.3762	0.0163	1.3925	0.3978	0.0156	0.4133	0.0000	5,272.0116	5,272.0116	0.1747	0.0000	5,276.3801
Worker	1.0838	0.7012	8.3529	0.0381	5.6069	0.0236	5.6305	1.4910	0.0217	1.5127	0.0000	3,451.0626	3,451.0626	0.0522	0.0000	3,452.3674
Total	**1.4728**	**16.5929**	**11.7884**	**0.0932**	**6.9830**	**0.0399**	**7.0229**	**1.8887**	**0.0373**	**1.9260**	**0.0000**	**8,723.0741**	**8,723.0741**	**0.2269**	**0.0000**	**8,728.7475**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3479	344.3479	0.0128	0.0000	344.6686
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3479**	**344.3479**	**0.0128**	**0.0000**	**344.6686**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3883	15.9243	3.4312	0.0555	1.3868	0.0160	1.4028	0.4008	0.0153	0.4161	0.0000	5,312.6155	5,312.6155	0.1753	0.0000	5,316.9989
Worker	1.0171	0.6574	7.9192	0.0378	5.6500	0.0223	5.6723	1.5024	0.0205	1.5229	0.0000	3,425.4498	3,425.4498	0.0477	0.0000	3,426.6426
Total	**1.4054**	**16.5817**	**11.3504**	**0.0934**	**7.0368**	**0.0383**	**7.0751**	**1.9033**	**0.0358**	**1.9391**	**0.0000**	**8,738.0653**	**8,738.0653**	**0.2231**	**0.0000**	**8,743.6414**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3475	344.3475	0.0128	0.0000	344.6682
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3475**	**344.3475**	**0.0128**	**0.0000**	**344.6682**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3883	15.9243	3.4312	0.0555	1.3868	0.0160	1.4028	0.4008	0.0153	0.4161	0.0000	5,312.6155	5,312.6155	0.1753	0.0000	5,316.9989
Worker	1.0171	0.6574	7.9192	0.0378	5.6500	0.0223	5.6723	1.5024	0.0205	1.5229	0.0000	3,425.4498	3,425.4498	0.0477	0.0000	3,426.6426
Total	**1.4054**	**16.5817**	**11.3504**	**0.0934**	**7.0368**	**0.0383**	**7.0751**	**1.9033**	**0.0358**	**1.9391**	**0.0000**	**8,738.0653**	**8,738.0653**	**0.2231**	**0.0000**	**8,743.6414**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.338 3	5,292.338 3	0.1747	0.0000	5,296.705 0
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.375 6	3,412.375 6	0.0475	0.0000	3,413.563 8
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.713 9**	**8,704.713 9**	**0.2222**	**0.0000**	**8,710.268 8**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.338 3	5,292.338 3	0.1747	0.0000	5,296.705 0
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.375 6	3,412.375 6	0.0475	0.0000	3,413.563 8
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.713 9**	**8,704.713 9**	**0.2222**	**0.0000**	**8,710.268 8**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9310	2.0953	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.7193	341.7193	0.0127	0.0000	342.0375
Total	**0.1582**	**0.9310**	**2.0953**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.7193**	**341.7193**	**0.0127**	**0.0000**	**342.0375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3854	15.8028	3.4051	0.0551	1.3762	0.0159	1.3921	0.3978	0.0152	0.4130	0.0000	5,272.0611	5,272.0611	0.1740	0.0000	5,276.4111
Worker	1.0093	0.6524	7.8587	0.0375	5.6069	0.0221	5.6290	1.4910	0.0203	1.5113	0.0000	3,399.3014	3,399.3014	0.0473	0.0000	3,400.4850
Total	**1.3947**	**16.4552**	**11.2638**	**0.0926**	**6.9831**	**0.0380**	**7.0211**	**1.8887**	**0.0355**	**1.9243**	**0.0000**	**8,671.3625**	**8,671.3625**	**0.2213**	**0.0000**	**8,676.8961**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9310	2.0953	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.7189	341.7189	0.0127	0.0000	342.0371
Total	**0.1582**	**0.9310**	**2.0953**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.7189**	**341.7189**	**0.0127**	**0.0000**	**342.0371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3854	15.8028	3.4051	0.0551	1.3762	0.0159	1.3921	0.3978	0.0152	0.4130	0.0000	5,272.0611	5,272.0611	0.1740	0.0000	5,276.4111
Worker	1.0093	0.6524	7.8587	0.0375	5.6069	0.0221	5.6290	1.4910	0.0203	1.5113	0.0000	3,399.3014	3,399.3014	0.0473	0.0000	3,400.4850
Total	**1.3947**	**16.4552**	**11.2638**	**0.0926**	**6.9831**	**0.0380**	**7.0211**	**1.8887**	**0.0355**	**1.9243**	**0.0000**	**8,671.3625**	**8,671.3625**	**0.2213**	**0.0000**	**8,676.8961**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1436	0.8268	1.9342	3.7100e-003		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	315.4333	315.4333	0.0113	0.0000	315.7167
Total	**0.1436**	**0.8268**	**1.9342**	**3.7100e-003**		**8.8500e-003**	**8.8500e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**315.4333**	**315.4333**	**0.0113**	**0.0000**	**315.7167**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3470	14.3469	3.0532	0.0511	1.2704	0.0137	1.2841	0.3672	0.0130	0.3802	0.0000	4,883.8173	4,883.8173	0.1585	0.0000	4,887.7802
Worker	0.6973	0.4605	5.9049	0.0330	5.1756	0.0157	5.1913	1.3763	0.0144	1.3907	0.0000	2,987.4802	2,987.4802	0.0307	0.0000	2,988.2480
Total	**1.0443**	**14.8074**	**8.9580**	**0.0840**	**6.4460**	**0.0294**	**6.4753**	**1.7435**	**0.0275**	**1.7710**	**0.0000**	**7,871.2975**	**7,871.2975**	**0.1892**	**0.0000**	**7,876.0282**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1436	0.8268	1.9342	3.7100e-003		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	315.4329	315.4329	0.0113	0.0000	315.7163
Total	**0.1436**	**0.8268**	**1.9342**	**3.7100e-003**		**8.8500e-003**	**8.8500e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**315.4329**	**315.4329**	**0.0113**	**0.0000**	**315.7163**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3470	14.3469	3.0532	0.0511	1.2704	0.0137	1.2841	0.3672	0.0130	0.3802	0.0000	4,883.8173	4,883.8173	0.1585	0.0000	4,887.7802
Worker	0.6973	0.4605	5.9049	0.0330	5.1756	0.0157	5.1913	1.3763	0.0144	1.3907	0.0000	2,987.4802	2,987.4802	0.0307	0.0000	2,988.2480
Total	**1.0443**	**14.8074**	**8.9580**	**0.0840**	**6.4460**	**0.0294**	**6.4753**	**1.7435**	**0.0275**	**1.7710**	**0.0000**	**7,871.2975**	**7,871.2975**	**0.1892**	**0.0000**	**7,876.0282**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.6083	39.7150	69.0790	0.3390	35.8768	0.1518	36.0286	9.6238	0.1411	9.7649	0.0000	31,358.9285	31,358.9285	1.1364	0.0000	31,387.3381
Unmitigated	7.1110	41.7525	78.0673	0.3900	41.9612	0.1738	42.1349	11.2559	0.1615	11.4175	0.0000	36,066.5827	36,066.5827	1.2689	0.0000	36,098.3062

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.892 1	5,174.892 1	0.0992	0.0949	5,205.643 9
NaturalGas Unmitigated	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.892 1	5,174.892 1	0.0992	0.0949	5,205.643 9

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24261e+006	0.0229	0.2080	0.1747	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4018	226.4018	4.3400e-003	4.1500e-003	227.7472
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.8921**	**5,174.8921**	**0.0992**	**0.0949**	**5,205.6439**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24261e+006	0.0229	0.2080	0.1747	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4018	226.4018	4.3400e-003	4.1500e-003	227.7472
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.8921**	**5,174.8921**	**0.0992**	**0.0949**	**5,205.6439**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e+007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24011e+006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e+006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e+006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e+007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24011e+006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e+006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e+006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	25.6101	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Unmitigated	60.1199	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6720	1,245.6416	0.7786	0.0491	1,279.7350

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	22.3356					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	32.9342	0.9911	42.5297	0.0818		6.0172	6.0172		6.0172	6.0172	582.9695	595.4633	1,178.4328	0.7145	0.0491	1,210.9223
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**60.1199**	**1.4637**	**83.4823**	**0.0840**		**6.2452**	**6.2452**		**6.2452**	**6.2452**	**582.9695**	**662.6720**	**1,245.6416**	**0.7787**	**0.0491**	**1,279.7350**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	20.6702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0898	0.7672	0.3265	4.9000e-003		0.0620	0.0620		0.0620	0.0620	0.0000	888.4690	888.4690	0.0170	0.0163	893.7487
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**25.6101**	**1.2397**	**41.2791**	**7.0700e-003**		**0.2900**	**0.2900**		**0.2900**	**0.2900**	**0.0000**	**955.6778**	**955.6778**	**0.0812**	**0.0163**	**962.5614**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	78.9648	8.1104	0.1915	338.7943
Unmitigated	98.7060	10.1381	0.2394	423.4929

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.40778 / 3.40926	1.7156	0.1762	4.1600e-003	7.3609
City Park	0 / 176.339	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	175.916 / 110.903	55.8100	5.7322	0.1354	239.4499
Elementary School	6.67151 / 17.1553	2.1166	0.2174	5.1300e-003	9.0810
General Office Building	22.2167 / 13.6167	7.0483	0.7239	0.0171	30.2405
High School	2.31701 / 5.95802	0.7351	0.0755	1.7800e-003	3.1538
Junior High School	1.82788 / 4.70026	0.5799	0.0596	1.4100e-003	2.4880
Library	0.688356 / 1.07666	0.2184	0.0224	5.3000e-004	0.9370
Regional Shopping Center	14.8145 / 9.07986	4.7000	0.4827	0.0114	20.1649
Single Family Housing	78.1848 / 49.2904	24.8044	2.5477	0.0602	106.4222
Supermarket	3.08171 / 0.0953105	0.9777	0.1004	2.3700e-003	4.1947
Total		**98.7060**	**10.1380**	**0.2394**	**423.4929**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.32623 / 3.20129	1.3725	0.1410	3.3300e-003	5.8887
City Park	0 / 165.583	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	140.733 / 104.138	44.6480	4.5858	0.1083	191.5599
Elementary School	5.33721 / 16.1088	1.6933	0.1739	4.1100e-003	7.2648
General Office Building	17.7734 / 12.7861	5.6387	0.5792	0.0137	24.1924
High School	1.85361 / 5.59458	0.5881	0.0604	1.4300e-003	2.5231
Junior High School	1.4623 / 4.41354	0.4639	0.0477	1.1300e-003	1.9904
Library	0.550685 / 1.01098	0.1747	0.0179	4.2000e-004	0.7496
Regional Shopping Center	11.8516 / 8.52599	3.7600	0.3862	9.1200e-003	16.1319
Single Family Housing	62.5479 / 46.2837	19.8436	2.0381	0.0481	85.1377
Supermarket	2.46536 / 0.0894965	0.7822	0.0803	1.9000e-003	3.3558
Total		**78.9648**	**8.1104**	**0.1915**	**338.7943**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	904.1258	53.4323	0.0000	2,239.933 4
Unmitigated	904.1258	53.4323	0.0000	2,239.933 4

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.24	101.9502	6.0251	0.0000	252.5773
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1258**	**53.4323**	**0.0000**	**2,239.9334**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.24	101.9502	6.0251	0.0000	252.5773
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1258**	**53.4323**	**0.0000**	**2,239.9334**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9168	83.5230	55.0563	0.1039	18.6037	3.8351	22.4387	10.0683	3.5441	13.6124	0.0000	10,063.2047	10,063.2047	3.0136	0.0000	10,138.5444
2021	50.2955	232.9484	305.9940	1.0706	72.1351	3.8549	74.8625	19.2255	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150
2022	47.5103	217.5362	281.7078	1.0468	72.1361	2.3673	74.5034	19.2259	2.2195	21.4454	0.0000	106,603.9970	106,603.9970	5.2779	0.0000	106,735.9443
2023	44.2115	183.4410	257.9472	1.0185	72.1370	1.9068	74.0438	19.2262	1.7828	21.0090	0.0000	103,777.0289	103,777.0289	4.6999	0.0000	103,894.5249
2024	42.2743	176.8921	240.0173	0.9950	72.1380	1.7412	73.8791	19.2265	1.6269	20.8535	0.0000	101,443.3024	101,443.3024	4.4903	0.0000	101,555.5604
2025	40.5748	170.6301	224.2991	0.9719	72.1388	1.5738	73.7126	19.2268	1.4699	20.6967	0.0000	99,149.6531	99,149.6531	4.3114	0.0000	99,257.4371
2026	39.2381	167.0425	210.0605	0.9496	72.1394	1.5479	73.6873	19.2270	1.4456	20.6726	0.0000	96,935.1028	96,935.1028	4.1464	0.0000	97,038.7618
2027	38.0007	163.7839	197.9743	0.9317	72.1399	1.5172	73.6572	19.2272	1.4168	20.6441	0.0000	95,155.0545	95,155.0545	4.0072	0.0000	95,255.2333
2028	36.7816	160.9933	187.5626	0.9159	72.1404	1.4847	73.6251	19.2274	1.3866	20.6140	0.0000	93,586.4215	93,586.4215	3.8817	0.0000	93,683.4638
2029	35.5144	158.4269	177.6301	0.9020	72.1408	1.4546	73.5954	19.2276	1.3586	20.5861	0.0000	92,198.3602	92,198.3602	3.7642	0.0000	92,292.4650
2030	34.6435	149.8773	170.0934	0.8990	72.1412	0.9287	73.0698	19.2277	0.8994	20.1270	0.0000	91,779.4128	91,779.4128	2.5768	0.0000	91,843.8334
2031	33.3386	147.8350	161.5536	0.8884	72.1415	0.9036	73.0452	19.2278	0.8761	20.1039	0.0000	90,729.0454	90,729.0454	2.4756	0.0000	90,790.9366
2032	32.1798	146.0551	154.1724	0.8793	72.1418	0.8808	73.0226	19.2279	0.8549	20.0829	0.0000	89,831.9896	89,831.9896	2.3864	0.0000	89,891.6484

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2033	31.1907	144.5170	147.9177	0.8716	72.1421	0.8602	73.0023	19.2280	0.8359	20.0639	0.0000	89,066.9785	89,066.9785	2.3114	0.0000	89,124.7647
2034	30.3654	143.2235	142.1749	0.8650	72.1423	0.8414	72.9838	19.2281	0.8184	20.0465	0.0000	88,413.8085	88,413.8085	2.2428	0.0000	88,469.8776
2035	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2036	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2037	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2038	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2039	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2040	26.6726	134.3852	122.2625	0.8432	72.1432	0.4677	72.6109	19.2284	0.4501	19.6785	0.0000	86,278.6393	86,278.6393	1.9661	0.0000	86,327.7905
Maximum	**50.2955**	**232.9484**	**305.9940**	**1.0706**	**72.1432**	**3.8549**	**74.8625**	**19.2284**	**3.5736**	**21.7826**	**0.0000**	**108,962.3895**	**108,962.3895**	**5.5810**	**0.0000**	**109,101.9150**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9168	83.5230	55.0563	0.1039	8.6672	3.8351	12.5023	4.6064	3.5441	8.1505	0.0000	10,063.2047	10,063.2047	3.0136	0.0000	10,138.5444
2021	50.2955	232.9484	305.9940	1.0706	72.1351	3.8549	74.8625	19.2255	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150
2022	47.5103	217.5362	281.7078	1.0468	72.1361	2.3673	74.5034	19.2259	2.2195	21.4454	0.0000	106,603.9970	106,603.9970	5.2779	0.0000	106,735.9443

Salinas CASP Model Full Buildout (2040) - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.2115	183.4410	257.9472	1.0185	72.1370	1.9068	74.0438	19.2262	1.7828	21.0090	0.0000	103,777.0289	103,777.0289	4.6999	0.0000	103,894.5249
2024	42.2743	176.8921	240.0173	0.9950	72.1380	1.7412	73.8791	19.2265	1.6269	20.8535	0.0000	101,443.3024	101,443.3024	4.4903	0.0000	101,555.5604
2025	40.5748	170.6301	224.2991	0.9719	72.1388	1.5738	73.7126	19.2268	1.4699	20.6967	0.0000	99,149.6531	99,149.6531	4.3114	0.0000	99,257.4371
2026	39.2381	167.0425	210.0605	0.9496	72.1394	1.5479	73.6873	19.2270	1.4456	20.6726	0.0000	96,935.1028	96,935.1028	4.1464	0.0000	97,038.7618
2027	38.0007	163.7839	197.9743	0.9317	72.1399	1.5172	73.6572	19.2272	1.4168	20.6441	0.0000	95,155.0545	95,155.0545	4.0072	0.0000	95,255.2333
2028	36.7816	160.9933	187.5626	0.9159	72.1404	1.4847	73.6251	19.2274	1.3866	20.6140	0.0000	93,586.4215	93,586.4215	3.8817	0.0000	93,683.4638
2029	35.5144	158.4269	177.6301	0.9020	72.1408	1.4546	73.5954	19.2276	1.3586	20.5861	0.0000	92,198.3602	92,198.3602	3.7642	0.0000	92,292.4650
2030	34.6435	149.8773	170.0934	0.8990	72.1412	0.9287	73.0698	19.2277	0.8994	20.1270	0.0000	91,779.4128	91,779.4128	2.5768	0.0000	91,843.8334
2031	33.3386	147.8350	161.5536	0.8884	72.1415	0.9036	73.0452	19.2278	0.8761	20.1039	0.0000	90,729.0454	90,729.0454	2.4756	0.0000	90,790.9366
2032	32.1798	146.0551	154.1724	0.8793	72.1418	0.8808	73.0226	19.2279	0.8549	20.0829	0.0000	89,831.9896	89,831.9896	2.3864	0.0000	89,891.6484
2033	31.1907	144.5170	147.9177	0.8716	72.1421	0.8602	73.0023	19.2280	0.8359	20.0639	0.0000	89,066.9785	89,066.9785	2.3114	0.0000	89,124.7647
2034	30.3654	143.2235	142.1749	0.8650	72.1423	0.8414	72.9838	19.2281	0.8184	20.0465	0.0000	88,413.8085	88,413.8085	2.2428	0.0000	88,469.8776
2035	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2036	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2037	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2038	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2039	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2040	26.6726	134.3852	122.2625	0.8432	72.1432	0.4677	72.6109	19.2284	0.4501	19.6785	0.0000	86,278.6393	86,278.6393	1.9661	0.0000	86,327.7905

Maximum	50.2955	232.9484	305.9940	1.0706	72.1432	3.8549	74.8625	19.2284	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.68	0.00	0.67	1.38	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	49.8781	264.7551	508.6982	2.5876	274.3836	1.1037	275.4872	73.4011	1.0259	74.4270		263,656.0969	263,656.0969	8.8233		263,876.6783
Total	**1,008.0758**	**317.3681**	**1,885.3258**	**4.7574**	**274.3836**	**151.6685**	**426.0520**	**73.4011**	**151.5907**	**224.9918**	**15,673.5102**	**311,514.8578**	**327,188.3681**	**29.1976**	**1.8927**	**328,482.3382**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	46.7060	252.7341	447.4354	2.2501	234.5979	0.9645	235.5625	62.7579	0.8964	63.6543		229,355.3099	229,355.3099	7.8876		229,552.5003
Total	**194.6945**	**299.8850**	**794.7170**	**2.5432**	**234.5979**	**6.2809**	**240.8788**	**62.7579**	**6.2128**	**68.9707**	**0.0000**	**285,091.7179**	**285,091.7179**	**9.5103**	**1.0110**	**285,630.7437**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	80.69	5.51	57.85	46.54	14.50	95.86	43.46	14.50	95.90	69.35	100.00	8.48	12.87	67.43	46.59	13.05

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1292	0.0000	6.1292	0.9282	0.0000	0.9282			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**6.1292**	**1.6587**	**7.7879**	**0.9282**	**1.5419**	**2.4701**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2275	7.9989	1.6088	0.0222	0.4726	0.0315	0.5041	0.1295	0.0301	0.1596		2,347.445 5	2,347.445 5	0.0849		2,349.568 6
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.2938**	**8.0523**	**2.1852**	**0.0235**	**0.5958**	**0.0326**	**0.6284**	**0.1621**	**0.0311**	**0.1932**		**2,480.146 0**	**2,480.146 0**	**0.0906**		**2,482.410 7**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7582	0.0000	2.7582	0.4177	0.0000	0.4177			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**2.7582**	**1.6587**	**4.4169**	**0.4177**	**1.5419**	**1.9596**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2275	7.9989	1.6088	0.0222	0.4726	0.0315	0.5041	0.1295	0.0301	0.1596		2,347.4455	2,347.4455	0.0849		2,349.5686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.2938**	**8.0523**	**2.1852**	**0.0235**	**0.5958**	**0.0326**	**0.6284**	**0.1621**	**0.0311**	**0.1932**		**2,480.1460**	**2,480.1460**	**0.0906**		**2,482.4107**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418		9,753.5702	9,753.5702	3.0004		9,828.5793
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**18.0663**	**3.8326**	**21.8989**	**9.9307**	**3.5418**	**13.4725**		**9,753.5702**	**9,753.5702**	**3.0004**		**9,828.5793**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1546	0.1245	1.3448	3.1100e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		309.6345	309.6345	0.0132		309.9651
Total	**0.1546**	**0.1245**	**1.3448**	**3.1100e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**309.6345**	**309.6345**	**0.0132**		**309.9651**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418	0.0000	9,753.5702	9,753.5702	3.0004		9,828.5793
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**8.1298**	**3.8326**	**11.9624**	**4.4688**	**3.5418**	**8.0107**	**0.0000**	**9,753.5702**	**9,753.5702**	**3.0004**		**9,828.5793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1546	0.1245	1.3448	3.1100e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		309.6345	309.6345	0.0132		309.9651
Total	**0.1546**	**0.1245**	**1.3448**	**3.1100e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**309.6345**	**309.6345**	**0.0132**		**309.9651**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.4290	0.0000	18.4290	4.6499	0.0000	4.6499			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**18.4290**	**2.1739**	**20.6029**	**4.6499**	**2.0000**	**6.6499**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0711	0.7685	1.7800e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		176.9340	176.9340	7.5500e-003		177.1229
Total	**0.0883**	**0.0711**	**0.7685**	**1.7800e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**176.9340**	**176.9340**	**7.5500e-003**		**177.1229**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2930	0.0000	8.2930	2.0925	0.0000	2.0925			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.2930**	**2.1739**	**10.4669**	**2.0925**	**2.0000**	**4.0924**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0711	0.7685	1.7800e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		176.9340	176.9340	7.5500e-003		177.1229
Total	**0.0883**	**0.0711**	**0.7685**	**1.7800e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**176.9340**	**176.9340**	**7.5500e-003**		**177.1229**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720		6,238.1646	6,238.1646	1.8147		6,283.5320
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**		**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3533	0.2845	3.0739	7.1200e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		707.7361	707.7361	0.0302		708.4915
Total	**0.3533**	**0.2845**	**3.0739**	**7.1200e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**707.7361**	**707.7361**	**0.0302**		**708.4915**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720	0.0000	6,238.1646	6,238.1646	1.8147		6,283.5319
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**	**0.0000**	**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3533	0.2845	3.0739	7.1200e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		707.7361	707.7361	0.0302		708.4915
Total	**0.3533**	**0.2845**	**3.0739**	**7.1200e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**707.7361**	**707.7361**	**0.0302**		**708.4915**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822		6,239.0208	6,239.0208	1.8080		6,284.2216
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**		**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2216**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3259	0.2539	2.8000	6.8700e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		684.0237	684.0237	0.0270		684.6975
Total	**0.3259**	**0.2539**	**2.8000**	**6.8700e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**684.0237**	**684.0237**	**0.0270**		**684.6975**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822	0.0000	6,239.0208	6,239.0208	1.8080		6,284.2215
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**	**0.0000**	**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2215**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3259	0.2539	2.8000	6.8700e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		684.0237	684.0237	0.0270		684.6975
Total	**0.3259**	**0.2539**	**2.8000**	**6.8700e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**684.0237**	**684.0237**	**0.0270**		**684.6975**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176		2,488.658 9	2,488.658 9	0.7332		2,506.988 2
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**		**2,488.658 9**	**2,488.658 9**	**0.7332**		**2,506.988 2**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4237	3.4471	38.0097	0.0933	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		9,285.621 3	9,285.621 3	0.3659		9,294.768 4
Total	**4.4237**	**3.4471**	**38.0097**	**0.0933**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**9,285.621 3**	**9,285.621 3**	**0.3659**		**9,294.768 4**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176	0.0000	2,488.6589	2,488.6589	0.7332		2,506.9882
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**	**0.0000**	**2,488.6589**	**2,488.6589**	**0.7332**		**2,506.9882**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4237	3.4471	38.0097	0.0933	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		9,285.6213	9,285.6213	0.3659		9,294.7684
Total	**4.4237**	**3.4471**	**38.0097**	**0.0933**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**9,285.6213**	**9,285.6213**	**0.3659**		**9,294.7684**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042		2,489.1084	2,489.1084	0.7323		2,507.4165
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**		**2,489.1084**	**2,489.1084**	**0.7323**		**2,507.4165**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1006	3.0893	34.7247	0.0900	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,958.7479	8,958.7479	0.3274		8,966.9323
Total	**4.1006**	**3.0893**	**34.7247**	**0.0900**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,958.7479**	**8,958.7479**	**0.3274**		**8,966.9323**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042	0.0000	2,489.108 3	2,489.108 3	0.7323		2,507.416 5
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**	**0.0000**	**2,489.108 3**	**2,489.108 3**	**0.7323**		**2,507.416 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1006	3.0893	34.7247	0.0900	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,958.747 9	8,958.747 9	0.3274		8,966.932 3
Total	**4.1006**	**3.0893**	**34.7247**	**0.0900**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,958.747 9**	**8,958.747 9**	**0.3274**		**8,966.932 3**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402		2,489.0322	2,489.0322	0.7308		2,507.3026
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**		**2,489.0322**	**2,489.0322**	**0.7308**		**2,507.3026**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8042	2.7695	31.6724	0.0866	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,626.7203	8,626.7203	0.2924		8,634.0290
Total	**3.8042**	**2.7695**	**31.6724**	**0.0866**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,626.7203**	**8,626.7203**	**0.2924**		**8,634.0290**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402	0.0000	2,489.0322	2,489.0322	0.7308		2,507.3026
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**	**0.0000**	**2,489.0322**	**2,489.0322**	**0.7308**		**2,507.3026**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8042	2.7695	31.6724	0.0866	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,626.7203	8,626.7203	0.2924		8,634.0290
Total	**3.8042**	**2.7695**	**31.6724**	**0.0866**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,626.7203**	**8,626.7203**	**0.2924**		**8,634.0290**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920		2,488.9953	2,488.9953	0.7298		2,507.2406
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**		**2,488.9953**	**2,488.9953**	**0.7298**		**2,507.2406**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5434	2.4909	29.0931	0.0833	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		8,294.6617	8,294.6617	0.2621		8,301.2140
Total	**3.5434**	**2.4909**	**29.0931**	**0.0833**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**8,294.6617**	**8,294.6617**	**0.2621**		**8,301.2140**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920	0.0000	2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**	**0.0000**	**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5434	2.4909	29.0931	0.0833	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		8,294.661 7	8,294.661 7	0.2621		8,301.214 0
Total	**3.5434**	**2.4909**	**29.0931**	**0.0833**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**8,294.661 7**	**8,294.661 7**	**0.2621**		**8,301.214 0**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3221	2.2544	26.8185	0.0800	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,965.940 1	7,965.940 1	0.2369		7,971.861 3
Total	**3.3221**	**2.2544**	**26.8185**	**0.0800**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,965.940 1**	**7,965.940 1**	**0.2369**		**7,971.861 3**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3221	2.2544	26.8185	0.0800	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,965.9401	7,965.9401	0.2369		7,971.8613
Total	**3.3221**	**2.2544**	**26.8185**	**0.0800**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,965.9401**	**7,965.9401**	**0.2369**		**7,971.8613**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1223	2.0461	24.6745	0.0766	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,636.760 5	7,636.760 5	0.2127		7,642.076 8
Total	**3.1223**	**2.0461**	**24.6745**	**0.0766**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,636.760 5**	**7,636.760 5**	**0.2127**		**7,642.076 8**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1223	2.0461	24.6745	0.0766	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,636.760 5	7,636.760 5	0.2127		7,642.076 8
Total	**3.1223**	**2.0461**	**24.6745**	**0.0766**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,636.760 5**	**7,636.760 5**	**0.2127**		**7,642.076 8**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9360	1.8594	22.8671	0.0740	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		7,374.760 7	7,374.760 7	0.1926		7,379.576 3
Total	**2.9360**	**1.8594**	**22.8671**	**0.0740**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**7,374.760 7**	**7,374.760 7**	**0.1926**		**7,379.576 3**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9360	1.8594	22.8671	0.0740	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		7,374.760 7	7,374.760 7	0.1926		7,379.576 3
Total	**2.9360**	**1.8594**	**22.8671**	**0.0740**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**7,374.760 7**	**7,374.760 7**	**0.1926**		**7,379.576 3**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7493	1.6938	21.2785	0.0716	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		7,142.345 3	7,142.345 3	0.1753		7,146.727 4
Total	**2.7493**	**1.6938**	**21.2785**	**0.0716**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**7,142.345 3**	**7,142.345 3**	**0.1753**		**7,146.727 4**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7493	1.6938	21.2785	0.0716	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		7,142.345 3	7,142.345 3	0.1753		7,146.727 4
Total	**2.7493**	**1.6938**	**21.2785**	**0.0716**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**7,142.345 3**	**7,142.345 3**	**0.1753**		**7,146.727 4**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5517	1.5389	19.7466	0.0696	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,936.052 6	6,936.052 6	0.1585		6,940.015 1
Total	**2.5517**	**1.5389**	**19.7466**	**0.0696**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,936.052 6**	**6,936.052 6**	**0.1585**		**6,940.015 1**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5517	1.5389	19.7466	0.0696	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,936.052 6	6,936.052 6	0.1585		6,940.015 1
Total	**2.5517**	**1.5389**	**19.7466**	**0.0696**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,936.052 6**	**6,936.052 6**	**0.1585**		**6,940.015 1**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3557	1.3943	18.3608	0.0677	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,753.4510	6,753.4510	0.1433		6,757.0326
Total	**2.3557**	**1.3943**	**18.3608**	**0.0677**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,753.4510**	**6,753.4510**	**0.1433**		**6,757.0326**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3557	1.3943	18.3608	0.0677	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,753.4510	6,753.4510	0.1433		6,757.0326
Total	**2.3557**	**1.3943**	**18.3608**	**0.0677**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,753.4510**	**6,753.4510**	**0.1433**		**6,757.0326**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1473	1.2541	17.0151	0.0661	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,592.1781	6,592.1781	0.1286		6,595.3919
Total	**2.1473**	**1.2541**	**17.0151**	**0.0661**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,592.1781**	**6,592.1781**	**0.1286**		**6,595.3919**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1473	1.2541	17.0151	0.0661	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,592.178 1	6,592.178 1	0.1286		6,595.391 9
Total	**2.1473**	**1.2541**	**17.0151**	**0.0661**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,592.178 1**	**6,592.178 1**	**0.1286**		**6,595.391 9**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9617	1.1331	15.8430	0.0646	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,450.6606	6,450.6606	0.1158		6,453.5545
Total	**1.9617**	**1.1331**	**15.8430**	**0.0646**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,450.6606**	**6,450.6606**	**0.1158**		**6,453.5545**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9617	1.1331	15.8430	0.0646	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,450.660 6	6,450.660 6	0.1158		6,453.554 5
Total	**1.9617**	**1.1331**	**15.8430**	**0.0646**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,450.660 6**	**6,450.660 6**	**0.1158**		**6,453.554 5**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8027	1.0308	14.8460	0.0634	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		6,327.1714	6,327.1714	0.1048		6,329.7924
Total	**1.8027**	**1.0308**	**14.8460**	**0.0634**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**6,327.1714**	**6,327.1714**	**0.1048**		**6,329.7924**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8027	1.0308	14.8460	0.0634	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		6,327.171 4	6,327.171 4	0.1048		6,329.792 4
Total	**1.8027**	**1.0308**	**14.8460**	**0.0634**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**6,327.171 4**	**6,327.171 4**	**0.1048**		**6,329.792 4**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6705	0.9478	13.9325	0.0623	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		6,219.4196	6,219.4196	0.0949		6,221.7915
Total	**1.6705**	**0.9478**	**13.9325**	**0.0623**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**6,219.4196**	**6,219.4196**	**0.0949**		**6,221.7915**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6705	0.9478	13.9325	0.0623	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		6,219.4196	6,219.4196	0.0949		6,221.7915
Total	**1.6705**	**0.9478**	**13.9325**	**0.0623**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**6,219.4196**	**6,219.4196**	**0.0949**		**6,221.7915**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239		2,937.9648	2,937.9648	0.0992		2,940.4445
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**		**2,937.9648**	**2,937.9648**	**0.0992**		**2,940.4445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1549	0.6752	10.7838	0.0584	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,833.9404	5,833.9404	0.0610		5,835.4646
Total	**1.1549**	**0.6752**	**10.7838**	**0.0584**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,833.9404**	**5,833.9404**	**0.0610**		**5,835.4646**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239	0.0000	2,937.964 8	2,937.964 8	0.0992		2,940.444 5
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.0992**		**2,940.444 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1549	0.6752	10.7838	0.0584	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,833.940 4	5,833.940 4	0.0610		5,835.464 6
Total	**1.1549**	**0.6752**	**10.7838**	**0.0584**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,833.940 4**	**5,833.940 4**	**0.0610**		**5,835.464 6**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0611**	**0.0476**	**0.5250**	**1.2900e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**128.2544**	**128.2544**	**5.0500e-003**		**128.3808**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0611**	**0.0476**	**0.5250**	**1.2900e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**128.2544**	**128.2544**	**5.0500e-003**		**128.3808**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7825	180.3940	44.9595	0.4582	10.8707	0.5501	11.4208	3.1288	0.5262	3.6549		48,223.73 95	48,223.73 95	2.0372		48,274.66 96
Worker	22.1103	17.2293	189.9787	0.4664	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		46,411.005 8	46,411.005 8	1.8288		46,456.72 45
Total	**27.8928**	**197.6232**	**234.9382**	**0.9246**	**55.4604**	**0.9225**	**56.3829**	**14.9561**	**0.8695**	**15.8256**		**94,634.74 54**	**94,634.74 54**	**3.8660**		**94,731.39 41**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7825	180.3940	44.9595	0.4582	10.8707	0.5501	11.4208	3.1288	0.5262	3.6549		48,223.7395	48,223.7395	2.0372		48,274.6696
Worker	22.1103	17.2293	189.9787	0.4664	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		46,411.0058	46,411.0058	1.8288		46,456.7245
Total	**27.8928**	**197.6232**	**234.9382**	**0.9246**	**55.4604**	**0.9225**	**56.3829**	**14.9561**	**0.8695**	**15.8256**		**94,634.7454**	**94,634.7454**	**3.8660**		**94,731.3941**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2973	170.8573	40.6662	0.4543	10.8717	0.4779	11.3496	3.1291	0.4571	3.5862		47,824.5666	47,824.5666	1.9700		47,873.8156
Worker	20.4952	15.4406	173.5595	0.4498	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		44,777.2407	44,777.2407	1.6363		44,818.1476
Total	**25.7925**	**186.2979**	**214.2257**	**0.9041**	**55.4614**	**0.8369**	**56.2983**	**14.9564**	**0.7880**	**15.7444**		**92,601.8072**	**92,601.8072**	**3.6062**		**92,691.9633**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2973	170.8573	40.6662	0.4543	10.8717	0.4779	11.3496	3.1291	0.4571	3.5862		47,824.56 66	47,824.56 66	1.9700		47,873.81 56
Worker	20.4952	15.4406	173.5595	0.4498	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		44,777.24 07	44,777.24 07	1.6363		44,818.14 76
Total	**25.7925**	**186.2979**	**214.2257**	**0.9041**	**55.4614**	**0.8369**	**56.2983**	**14.9564**	**0.7880**	**15.7444**		**92,601.80 72**	**92,601.80 72**	**3.6062**		**92,691.96 33**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9928	140.9499	35.3320	0.4462	10.8727	0.2090	11.0817	3.1295	0.1998	3.3293		46,988.3521	46,988.3521	1.6076		47,028.5432
Worker	19.0137	13.8421	158.3035	0.4330	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		43,117.7144	43,117.7144	1.4612		43,154.2442
Total	**23.0066**	**154.7920**	**193.6355**	**0.8791**	**55.4624**	**0.5565**	**56.0189**	**14.9568**	**0.5201**	**15.4769**		**90,106.0665**	**90,106.0665**	**3.0688**		**90,182.7873**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9928	140.9499	35.3320	0.4462	10.8727	0.2090	11.0817	3.1295	0.1998	3.3293		46,988.3521	46,988.3521	1.6076		47,028.5432
Worker	19.0137	13.8421	158.3035	0.4330	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		43,117.7144	43,117.7144	1.4612		43,154.2442
Total	**23.0066**	**154.7920**	**193.6355**	**0.8791**	**55.4624**	**0.5565**	**56.0189**	**14.9568**	**0.5201**	**15.4769**		**90,106.0665**	**90,106.0665**	**3.0688**		**90,182.7873**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7766	137.7640	32.9097	0.4428	10.8736	0.1942	11.0678	3.1298	0.1857	3.3155		46,645.9139	46,645.9139	1.5841		46,685.5158
Worker	17.7102	12.4500	145.4118	0.4162	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		41,458.0327	41,458.0327	1.3100		41,490.7823
Total	**21.4868**	**150.2140**	**178.3216**	**0.8590**	**55.4633**	**0.5310**	**55.9944**	**14.9571**	**0.4960**	**15.4531**		**88,103.9466**	**88,103.9466**	**2.8941**		**88,176.2981**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.698 9	2,555.698 9	0.6044		2,570.807 7
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.698 9**	**2,555.698 9**	**0.6044**		**2,570.807 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7766	137.7640	32.9097	0.4428	10.8736	0.1942	11.0678	3.1298	0.1857	3.3155		46,645.91 39	46,645.91 39	1.5841		46,685.51 58
Worker	17.7102	12.4500	145.4118	0.4162	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		41,458.03 27	41,458.03 27	1.3100		41,490.78 23
Total	**21.4868**	**150.2140**	**178.3216**	**0.8590**	**55.4633**	**0.5310**	**55.9944**	**14.9571**	**0.4960**	**15.4531**		**88,103.94 66**	**88,103.94 66**	**2.8941**		**88,176.29 81**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5916	134.9108	30.9659	0.4397	10.8745	0.1807	11.0551	3.1301	0.1727	3.3028		46,324.01 50	46,324.01 50	1.5607		46,363.03 25
Worker	16.6042	11.2680	134.0430	0.3996	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		39,815.03 04	39,815.03 04	1.1838		39,844.62 55
Total	**20.1957**	**146.1788**	**165.0089**	**0.8393**	**55.4642**	**0.5103**	**55.9745**	**14.9574**	**0.4763**	**15.4337**		**86,139.04 54**	**86,139.04 54**	**2.7445**		**86,207.65 80**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5916	134.9108	30.9659	0.4397	10.8745	0.1807	11.0551	3.1301	0.1727	3.3028		46,324.01 50	46,324.01 50	1.5607		46,363.03 25
Worker	16.6042	11.2680	134.0430	0.3996	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		39,815.03 04	39,815.03 04	1.1838		39,844.62 55
Total	**20.1957**	**146.1788**	**165.0089**	**0.8393**	**55.4642**	**0.5103**	**55.9745**	**14.9574**	**0.4763**	**15.4337**		**86,139.04 54**	**86,139.04 54**	**2.7445**		**86,207.65 80**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4529	132.5728	29.5872	0.4373	10.8750	0.1710	11.0461	3.1303	0.1635	3.2938		46,083.9365	46,083.9365	1.5408		46,122.4573
Worker	15.6058	10.2268	123.3270	0.3830	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		38,169.7383	38,169.7383	1.0629		38,196.3100
Total	**19.0587**	**142.7996**	**152.9142**	**0.8203**	**55.4648**	**0.4871**	**55.9519**	**14.9576**	**0.4546**	**15.4122**		**84,253.6748**	**84,253.6748**	**2.6037**		**84,318.7673**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4529	132.5728	29.5872	0.4373	10.8750	0.1710	11.0461	3.1303	0.1635	3.2938		46,083.9365	46,083.9365	1.5408		46,122.4573
Worker	15.6058	10.2268	123.3270	0.3830	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		38,169.7383	38,169.7383	1.0629		38,196.3100
Total	**19.0587**	**142.7996**	**152.9142**	**0.8203**	**55.4648**	**0.4871**	**55.9519**	**14.9576**	**0.4546**	**15.4122**		**84,253.6748**	**84,253.6748**	**2.6037**		**84,318.7673**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3330	130.4343	28.3423	0.4353	10.8756	0.1624	11.0380	3.1305	0.1553	3.2858		45,875.40 40	45,875.40 40	1.5218		45,913.44 82
Worker	14.6746	9.2934	114.2931	0.3698	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		36,860.22 22	36,860.22 22	0.9628		36,884.291 1
Total	**18.0076**	**139.7278**	**142.6355**	**0.8050**	**55.4653**	**0.4601**	**55.9254**	**14.9578**	**0.4292**	**15.3870**		**82,735.62 62**	**82,735.62 62**	**2.4845**		**82,797.73 93**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3330	130.4343	28.3423	0.4353	10.8756	0.1624	11.0380	3.1305	0.1553	3.2858		45,875.40 40	45,875.40 40	1.5218		45,913.44 82
Worker	14.6746	9.2934	114.2931	0.3698	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		36,860.22 22	36,860.22 22	0.9628		36,884.291 1
Total	**18.0076**	**139.7278**	**142.6355**	**0.8050**	**55.4653**	**0.4601**	**55.9254**	**14.9578**	**0.4292**	**15.3870**		**82,735.62 62**	**82,735.62 62**	**2.4845**		**82,797.73 93**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2342	128.6371	27.4589	0.4335	10.8760	0.1547	11.0307	3.1307	0.1479	3.2786		45,700.8356	45,700.8356	1.5003		45,738.3430
Worker	13.7412	8.4657	106.3534	0.3580	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		35,698.5731	35,698.5731	0.8761		35,720.4756
Total	**16.9754**	**137.1028**	**133.8123**	**0.7916**	**55.4658**	**0.4317**	**55.8975**	**14.9580**	**0.4028**	**15.3607**		**81,399.4087**	**81,399.4087**	**2.3764**		**81,458.8186**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2342	128.6371	27.4589	0.4335	10.8760	0.1547	11.0307	3.1307	0.1479	3.2786		45,700.8356	45,700.8356	1.5003		45,738.3430
Worker	13.7412	8.4657	106.3534	0.3580	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		35,698.5731	35,698.5731	0.8761		35,720.4756
Total	**16.9754**	**137.1028**	**133.8123**	**0.7916**	**55.4658**	**0.4317**	**55.8975**	**14.9580**	**0.4028**	**15.3607**		**81,399.4087**	**81,399.4087**	**2.3764**		**81,458.8186**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1521	126.9994	26.7148	0.4321	10.8764	0.1477	11.0241	3.1308	0.1412	3.2720		45,550.1507	45,550.1507	1.4835		45,587.2374
Worker	12.7536	7.6917	98.6969	0.3476	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		34,667.4893	34,667.4893	0.7922		34,687.2947
Total	**15.9057**	**134.6911**	**125.4117**	**0.7797**	**55.4662**	**0.4055**	**55.8716**	**14.9581**	**0.3783**	**15.3364**		**80,217.6400**	**80,217.6400**	**2.2757**		**80,274.5322**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1521	126.9994	26.7148	0.4321	10.8764	0.1477	11.0241	3.1308	0.1412	3.2720		45,550.1507	45,550.1507	1.4835		45,587.2374
Worker	12.7536	7.6917	98.6969	0.3476	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		34,667.4893	34,667.4893	0.7922		34,687.2947
Total	**15.9057**	**134.6911**	**125.4117**	**0.7797**	**55.4662**	**0.4055**	**55.8716**	**14.9581**	**0.3783**	**15.3364**		**80,217.6400**	**80,217.6400**	**2.2757**		**80,274.5322**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0858	125.6027	26.1580	0.4309	10.8768	0.1418	11.0186	3.1310	0.1356	3.2665		45,435.63 28	45,435.63 28	1.4653		45,472.26 61
Worker	11.7741	6.9691	91.7703	0.3384	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		33,754.81 75	33,754.81 75	0.7161		33,772.71 89
Total	**14.8598**	**132.5718**	**117.9284**	**0.7693**	**55.4665**	**0.3816**	**55.8482**	**14.9583**	**0.3561**	**15.3144**		**79,190.45 03**	**79,190.45 03**	**2.1814**		**79,244.98 50**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0858	125.6027	26.1580	0.4309	10.8768	0.1418	11.0186	3.1310	0.1356	3.2665		45,435.6328	45,435.6328	1.4653		45,472.2661
Worker	11.7741	6.9691	91.7703	0.3384	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		33,754.8175	33,754.8175	0.7161		33,772.7189
Total	**14.8598**	**132.5718**	**117.9284**	**0.7693**	**55.4665**	**0.3816**	**55.8482**	**14.9583**	**0.3561**	**15.3144**		**79,190.4503**	**79,190.4503**	**2.1814**		**79,244.9850**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0307	124.4014	25.6902	0.4301	10.8772	0.1368	11.0140	3.1311	0.1308	3.2619		45,352.60 57	45,352.60 57	1.4524		45,388.91 57
Worker	10.7326	6.2684	85.0440	0.3302	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		32,948.75 01	32,948.75 01	0.6425		32,964.81 32
Total	**13.7633**	**130.6698**	**110.7343**	**0.7604**	**55.4669**	**0.3599**	**55.8268**	**14.9584**	**0.3360**	**15.2944**		**78,301.35 58**	**78,301.35 58**	**2.0949**		**78,353.72 89**

3.8 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0307	124.4014	25.6902	0.4301	10.8772	0.1368	11.0140	3.1311	0.1308	3.2619		45,352.60 57	45,352.60 57	1.4524		45,388.91 57
Worker	10.7326	6.2684	85.0440	0.3302	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		32,948.75 01	32,948.75 01	0.6425		32,964.81 32
Total	**13.7633**	**130.6698**	**110.7343**	**0.7604**	**55.4669**	**0.3599**	**55.8268**	**14.9584**	**0.3360**	**15.2944**		**78,301.35 58**	**78,301.35 58**	**2.0949**		**78,353.72 89**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9852	123.3475	25.3394	0.4297	10.8775	0.1323	11.0097	3.1312	0.1264	3.2576		45,304.3944	45,304.3944	1.4399		45,340.3906
Worker	9.8049	5.6634	79.1857	0.3231	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		32,241.4231	32,241.4231	0.5786		32,255.8875
Total	**12.7901**	**129.0109**	**104.5251**	**0.7527**	**55.4672**	**0.3401**	**55.8073**	**14.9585**	**0.3176**	**15.2761**		**77,545.8175**	**77,545.8175**	**2.0184**		**77,596.2780**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9852	123.3475	25.3394	0.4297	10.8775	0.1323	11.0097	3.1312	0.1264	3.2576		45,304.3944	45,304.3944	1.4399		45,340.3906
Worker	9.8049	5.6634	79.1857	0.3231	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		32,241.4231	32,241.4231	0.5786		32,255.8875
Total	**12.7901**	**129.0109**	**104.5251**	**0.7527**	**55.4672**	**0.3401**	**55.8073**	**14.9585**	**0.3176**	**15.2761**		**77,545.8175**	**77,545.8175**	**2.0184**		**77,596.2780**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9499	122.4228	25.0647	0.4294	10.8777	0.1282	11.0059	3.1313	0.1225	3.2538		45,280.091 1	45,280.091 1	1.4304		45,315.85 13
Worker	9.0101	5.1523	74.2027	0.3168	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		31,624.20 45	31,624.20 45	0.5240		31,637.30 51
Total	**11.9600**	**127.5751**	**99.2675**	**0.7462**	**55.4675**	**0.3223**	**55.7898**	**14.9586**	**0.3011**	**15.2596**		**76,904.29 56**	**76,904.29 56**	**1.9544**		**76,953.15 64**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9499	122.4228	25.0647	0.4294	10.8777	0.1282	11.0059	3.1313	0.1225	3.2538		45,280.091 1	45,280.09 11	1.4304		45,315.85 13
Worker	9.0101	5.1523	74.2027	0.3168	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		31,624.20 45	31,624.20 45	0.5240		31,637.30 51
Total	**11.9600**	**127.5751**	**99.2675**	**0.7462**	**55.4675**	**0.3223**	**55.7898**	**14.9586**	**0.3011**	**15.2596**		**76,904.29 56**	**76,904.29 56**	**1.9544**		**76,953.15 64**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9175	121.6274	24.8011	0.4293	10.8780	0.1245	11.0025	3.1314	0.1190	3.2504		45,273.2329	45,273.2329	1.4215		45,308.7711
Worker	8.3495	4.7372	69.6370	0.3114	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		31,085.6444	31,085.6444	0.4742		31,097.4992
Total	**11.2669**	**126.3646**	**94.4382**	**0.7407**	**55.4677**	**0.3060**	**55.7737**	**14.9587**	**0.2860**	**15.2446**		**76,358.8773**	**76,358.8773**	**1.8957**		**76,406.2703**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9175	121.6274	24.8011	0.4293	10.8780	0.1245	11.0025	3.1314	0.1190	3.2504		45,273.2329	45,273.2329	1.4215		45,308.7711
Worker	8.3495	4.7372	69.6370	0.3114	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		31,085.6444	31,085.6444	0.4742		31,097.4992
Total	**11.2669**	**126.3646**	**94.4382**	**0.7407**	**55.4677**	**0.3060**	**55.7737**	**14.9587**	**0.2860**	**15.2446**		**76,358.8773**	**76,358.8773**	**1.8957**		**76,406.2703**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8186	119.0611	23.8512	0.4310	10.8789	0.1131	10.9919	3.1317	0.1081	3.2398		45,450.2292	45,450.2292	1.3970		45,485.1550
Worker	5.7725	3.3750	53.8991	0.2919	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		29,158.9579	29,158.9579	0.3047		29,166.5761
Total	**8.5910**	**122.4360**	**77.7503**	**0.7229**	**55.4686**	**0.2439**	**55.7125**	**14.9590**	**0.2284**	**15.1874**		**74,609.1871**	**74,609.1871**	**1.7018**		**74,651.7310**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.547 1	2,897.547 1	0.1041		2,900.150 3
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.547 1**	**2,897.547 1**	**0.1041**		**2,900.150 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8186	119.0611	23.8512	0.4310	10.8789	0.1131	10.9919	3.1317	0.1081	3.2398		45,450.22 92	45,450.22 92	1.3970		45,485.15 50
Worker	5.7725	3.3750	53.8991	0.2919	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		29,158.95 79	29,158.95 79	0.3047		29,166.57 61
Total	**8.5910**	**122.4360**	**77.7503**	**0.7229**	**55.4686**	**0.2439**	**55.7125**	**14.9590**	**0.2284**	**15.1874**		**74,609.18 71**	**74,609.18 71**	**1.7018**		**74,651.73 10**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	46.7060	252.7341	447.4354	2.2501	234.5979	0.9645	235.5625	62.7579	0.8964	63.6543		229,355.3099	229,355.3099	7.8876		229,552.5003
Unmitigated	49.8781	264.7551	508.6982	2.5876	274.3836	1.1037	275.4872	73.4011	1.0259	74.4270		263,656.0969	263,656.0969	8.8233		263,876.6783

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
NaturalGas Unmitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11623.6	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6236	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Unmitigated	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3870					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.308 4	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.51 02	16,009.411 8	31,682.92 20	19.2095	1.3197	32,556.42 41
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**955.3325**	**27.9542**	**1,364.929 2**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.51 02**	**16,602.09 18**	**32,275.60 20**	**19.7752**	**1.3197**	**33,163.24 80**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2614					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**145.1233**	**22.4920**	**335.5832**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7389**	**24,479.7389**	**1.0236**	**0.4379**	**24,635.8315**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9305	83.5552	55.0348	0.1037	18.6037	3.8351	22.4387	10.0683	3.5441	13.6124	0.0000	10,043.4859	10,043.4859	3.0130	0.0000	10,118.8101
2021	53.0080	239.8781	308.3075	1.0219	72.1351	3.8549	74.8875	19.2255	3.5736	21.8066	0.0000	104,004.6325	104,004.6325	5.6675	0.0000	104,146.3210
2022	50.0411	223.5427	283.2278	0.9992	72.1361	2.3908	74.5268	19.2259	2.2420	21.4679	0.0000	101,766.7489	101,766.7489	5.3696	0.0000	101,900.9880
2023	46.5395	188.4594	257.8330	0.9723	72.1370	1.9136	74.0506	19.2262	1.7893	21.0155	0.0000	99,081.5920	99,081.5920	4.7544	0.0000	99,200.4530
2024	44.4914	181.3458	239.4893	0.9503	72.1380	1.7472	73.8852	19.2265	1.6327	20.8592	0.0000	96,892.2277	96,892.2277	4.5498	0.0000	97,005.9730
2025	42.6969	174.6110	223.5834	0.9286	72.1388	1.5789	73.7177	19.2268	1.4747	20.7016	0.0000	94,741.7838	94,741.7838	4.3759	0.0000	94,851.1822
2026	41.2963	170.6041	209.3289	0.9077	72.1394	1.5526	73.6920	19.2270	1.4501	20.6771	0.0000	92,662.0779	92,662.0779	4.2163	0.0000	92,767.4857
2027	39.9910	166.9663	197.1380	0.8908	72.1399	1.5215	73.6614	19.2272	1.4209	20.6481	0.0000	90,986.6651	90,986.6651	4.0806	0.0000	91,088.6799
2028	38.6842	163.8526	186.6880	0.8759	72.1404	1.4885	73.6289	19.2274	1.3902	20.6176	0.0000	89,511.2962	89,511.2962	3.9583	0.0000	89,610.2531
2029	37.3146	160.9848	176.7027	0.8628	72.1408	1.4580	73.5988	19.2276	1.3618	20.5893	0.0000	88,204.3529	88,204.3529	3.8438	0.0000	88,300.4480
2030	36.3387	152.1541	169.1346	0.8605	72.1412	0.9317	73.0729	19.2277	0.9023	20.1299	0.0000	87,853.8755	87,853.8755	2.6591	0.0000	87,920.3538
2031	34.9117	149.8405	160.5497	0.8505	72.1415	0.9064	73.0479	19.2278	0.8788	20.1066	0.0000	86,861.1181	86,861.1181	2.5611	0.0000	86,925.1453
2032	33.6450	147.8240	153.1478	0.8419	72.1418	0.8833	73.0252	19.2279	0.8574	20.0853	0.0000	86,011.6231	86,011.6231	2.4745	0.0000	86,073.4857

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2033	32.5657	146.0824	146.8880	0.8345	72.1421	0.8625	73.0046	19.2280	0.8381	20.0661	0.0000	85,285.2729	85,285.2729	2.4023	0.0000	85,345.3293
2034	31.6773	144.6179	141.1524	0.8282	72.1423	0.8435	72.9859	19.2281	0.8204	20.0486	0.0000	84,663.7668	84,663.7668	2.3360	0.0000	84,722.1673
2035	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2036	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2037	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2038	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2039	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2040	27.7386	135.1877	121.2467	0.8075	72.1432	0.4692	72.6124	19.2284	0.4515	19.6800	0.0000	82,626.7484	82,626.7484	2.0685	0.0000	82,678.4601
Maximum	**53.0080**	**239.8781**	**308.3075**	**1.0219**	**72.1432**	**3.8549**	**74.8875**	**19.2284**	**3.5736**	**21.8066**	**0.0000**	**104,004.6325**	**104,004.6325**	**5.6675**	**0.0000**	**104,146.3210**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9305	83.5552	55.0348	0.1037	8.6672	3.8351	12.5023	4.6064	3.5441	8.1505	0.0000	10,043.4859	10,043.4859	3.0130	0.0000	10,118.8101
2021	53.0080	239.8781	308.3075	1.0219	72.1351	3.8549	74.8875	19.2255	3.5736	21.8066	0.0000	104,004.6325	104,004.6325	5.6675	0.0000	104,146.3210
2022	50.0411	223.5427	283.2278	0.9992	72.1361	2.3908	74.5268	19.2259	2.2420	21.4679	0.0000	101,766.7489	101,766.7489	5.3696	0.0000	101,900.9880

Salinas CASP Model Full Buildout (2040) - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	46.5395	188.4594	257.8330	0.9723	72.1370	1.9136	74.0506	19.2262	1.7893	21.0155	0.0000	99,081.5920	99,081.5920	4.7544	0.0000	99,200.4530
2024	44.4914	181.3458	239.4893	0.9503	72.1380	1.7472	73.8852	19.2265	1.6327	20.8592	0.0000	96,892.2277	96,892.2277	4.5498	0.0000	97,005.9730
2025	42.6969	174.6110	223.5834	0.9286	72.1388	1.5789	73.7177	19.2268	1.4747	20.7016	0.0000	94,741.7838	94,741.7838	4.3759	0.0000	94,851.1822
2026	41.2963	170.6041	209.3289	0.9077	72.1394	1.5526	73.6920	19.2270	1.4501	20.6771	0.0000	92,662.0779	92,662.0779	4.2163	0.0000	92,767.4857
2027	39.9910	166.9663	197.1380	0.8908	72.1399	1.5215	73.6614	19.2272	1.4209	20.6481	0.0000	90,986.6651	90,986.6651	4.0806	0.0000	91,088.6798
2028	38.6842	163.8526	186.6880	0.8759	72.1404	1.4885	73.6289	19.2274	1.3902	20.6176	0.0000	89,511.2961	89,511.2961	3.9583	0.0000	89,610.2531
2029	37.3146	160.9848	176.7027	0.8628	72.1408	1.4580	73.5988	19.2276	1.3618	20.5893	0.0000	88,204.3529	88,204.3529	3.8438	0.0000	88,300.4480
2030	36.3387	152.1541	169.1346	0.8605	72.1412	0.9317	73.0729	19.2277	0.9023	20.1299	0.0000	87,853.8755	87,853.8755	2.6591	0.0000	87,920.3538
2031	34.9117	149.8405	160.5497	0.8505	72.1415	0.9064	73.0479	19.2278	0.8788	20.1066	0.0000	86,861.1181	86,861.1181	2.5611	0.0000	86,925.1453
2032	33.6450	147.8240	153.1478	0.8419	72.1418	0.8833	73.0252	19.2279	0.8574	20.0853	0.0000	86,011.6231	86,011.6231	2.4745	0.0000	86,073.4856
2033	32.5657	146.0824	146.8880	0.8345	72.1421	0.8625	73.0046	19.2280	0.8381	20.0661	0.0000	85,285.2729	85,285.2729	2.4023	0.0000	85,345.3293
2034	31.6773	144.6179	141.1524	0.8282	72.1423	0.8435	72.9859	19.2281	0.8204	20.0486	0.0000	84,663.7668	84,663.7668	2.3360	0.0000	84,722.1673
2035	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2036	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2037	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2038	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2039	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2040	27.7386	135.1877	121.2467	0.8075	72.1432	0.4692	72.6124	19.2284	0.4515	19.6800	0.0000	82,626.7484	82,626.7484	2.0685	0.0000	82,678.4601

Maximum	53.0080	239.8781	308.3075	1.0219	72.1432	3.8549	74.8875	19.2284	3.5736	21.8066	0.0000	104,004.6325	104,004.6325	5.6675	0.0000	104,146.3210

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.68	0.00	0.67	1.38	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	44.9874	271.2523	522.2701	2.4532	274.3836	1.1068	275.4904	73.4011	1.0289	74.4300		250,014.9992	250,014.9992	9.2064		250,245.1589
Total	**1,003.1850**	**323.8653**	**1,898.8978**	**4.6230**	**274.3836**	**151.6716**	**426.0552**	**73.4011**	**151.5937**	**224.9948**	**15,673.5102**	**297,873.7601**	**313,547.2704**	**29.5807**	**1.8927**	**314,850.8188**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	41.7500	257.8061	464.2337	2.1313	234.5979	0.9677	235.5656	62.7579	0.8994	63.6574		217,269.1556	217,269.1556	8.2713		217,475.9385
Total	**189.7384**	**304.9569**	**811.5153**	**2.4244**	**234.5979**	**6.2840**	**240.8820**	**62.7579**	**6.2158**	**68.9737**	**0.0000**	**273,005.5636**	**273,005.5636**	**9.8940**	**1.0110**	**273,554.1819**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	81.09	5.84	57.26	47.56	14.50	95.86	43.46	14.50	95.90	69.34	100.00	8.35	12.93	66.55	46.59	13.12

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1292	0.0000	6.1292	0.9282	0.0000	0.9282			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**6.1292**	**1.6587**	**7.7879**	**0.9282**	**1.5419**	**2.4701**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2351	8.1878	1.7405	0.0217	0.4726	0.0323	0.5049	0.1295	0.0309	0.1603		2,301.367 6	2,301.367 6	0.0908		2,303.637 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.3072**	**8.2549**	**2.3076**	**0.0230**	**0.5958**	**0.0333**	**0.6292**	**0.1621**	**0.0318**	**0.1940**		**2,425.617 1**	**2,425.617 1**	**0.0962**		**2,428.022 3**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7582	0.0000	2.7582	0.4177	0.0000	0.4177			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**2.7582**	**1.6587**	**4.4169**	**0.4177**	**1.5419**	**1.9596**	**0.0000**	**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2351	8.1878	1.7405	0.0217	0.4726	0.0323	0.5049	0.1295	0.0309	0.1603		2,301.367 6	2,301.367 6	0.0908		2,303.637 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.3072**	**8.2549**	**2.3076**	**0.0230**	**0.5958**	**0.0333**	**0.6292**	**0.1621**	**0.0318**	**0.1940**		**2,425.617 1**	**2,425.617 1**	**0.0962**		**2,428.022 3**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418		9,753.570 2	9,753.570 2	3.0004		9,828.579 3
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**18.0663**	**3.8326**	**21.8989**	**9.9307**	**3.5418**	**13.4725**		**9,753.570 2**	**9,753.570 2**	**3.0004**		**9,828.579 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1682	0.1567	1.3233	2.9200e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		289.9157	289.9157	0.0126		290.2308
Total	**0.1682**	**0.1567**	**1.3233**	**2.9200e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**289.9157**	**289.9157**	**0.0126**		**290.2308**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418	0.0000	9,753.5702	9,753.5702	3.0004		9,828.5793
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**8.1298**	**3.8326**	**11.9624**	**4.4688**	**3.5418**	**8.0107**	**0.0000**	**9,753.5702**	**9,753.5702**	**3.0004**		**9,828.5793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1682	0.1567	1.3233	2.9200e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		289.9157	289.9157	0.0126		290.2308
Total	**0.1682**	**0.1567**	**1.3233**	**2.9200e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**289.9157**	**289.9157**	**0.0126**		**290.2308**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.4290	0.0000	18.4290	4.6499	0.0000	4.6499			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**18.4290**	**2.1739**	**20.6029**	**4.6499**	**2.0000**	**6.6499**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2930	0.0000	8.2930	2.0925	0.0000	2.0925			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.865 3	6,005.865 3	1.9424		6,054.425 7
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.2930**	**2.1739**	**10.4669**	**2.0925**	**2.0000**	**4.0924**	**0.0000**	**6,005.865 3**	**6,005.865 3**	**1.9424**		**6,054.425 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720		6,238.1646	6,238.1646	1.8147		6,283.5320
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**		**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3846	0.3581	3.0247	6.6600e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		662.6644	662.6644	0.0288		663.3846
Total	**0.3846**	**0.3581**	**3.0247**	**6.6600e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**662.6644**	**662.6644**	**0.0288**		**663.3846**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720	0.0000	6,238.1646	6,238.1646	1.8147		6,283.5319
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**	**0.0000**	**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3846	0.3581	3.0247	6.6600e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		662.6644	662.6644	0.0288		663.3846
Total	**0.3846**	**0.3581**	**3.0247**	**6.6600e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**662.6644**	**662.6644**	**0.0288**		**663.3846**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822		6,239.0208	6,239.0208	1.8080		6,284.2216
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**		**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2216**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3546	0.3196	2.7456	6.4400e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		640.4597	640.4597	0.0256		641.1003
Total	**0.3546**	**0.3196**	**2.7456**	**6.4400e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**640.4597**	**640.4597**	**0.0256**		**641.1003**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822	0.0000	6,239.0208	6,239.0208	1.8080		6,284.2215
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**	**0.0000**	**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2215**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3546	0.3196	2.7456	6.4400e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		640.4597	640.4597	0.0256		641.1003
Total	**0.3546**	**0.3196**	**2.7456**	**6.4400e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**640.4597**	**640.4597**	**0.0256**		**641.1003**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176		2,488.658 9	2,488.658 9	0.7332		2,506.988 2
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**		**2,488.658 9**	**2,488.658 9**	**0.7332**		**2,506.988 2**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8136	4.3387	37.2710	0.0874	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		8,694.239 9	8,694.239 9	0.3479		8,702.937 1
Total	**4.8136**	**4.3387**	**37.2710**	**0.0874**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**8,694.239 9**	**8,694.239 9**	**0.3479**		**8,702.937 1**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176	0.0000	2,488.658 9	2,488.658 9	0.7332		2,506.988 2
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**	**0.0000**	**2,488.658 9**	**2,488.658 9**	**0.7332**		**2,506.988 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8136	4.3387	37.2710	0.0874	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		8,694.239 9	8,694.239 9	0.3479		8,702.937 1
Total	**4.8136**	**4.3387**	**37.2710**	**0.0874**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**8,694.239 9**	**8,694.239 9**	**0.3479**		**8,702.937 1**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042		2,489.1084	2,489.1084	0.7323		2,507.4165
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**		**2,489.1084**	**2,489.1084**	**0.7323**		**2,507.4165**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4650	3.8878	33.9376	0.0843	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,388.3011	8,388.3011	0.3105		8,396.0625
Total	**4.4650**	**3.8878**	**33.9376**	**0.0843**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,388.3011**	**8,388.3011**	**0.3105**		**8,396.0625**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042	0.0000	2,489.108 3	2,489.108 3	0.7323		2,507.416 5
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**	**0.0000**	**2,489.108 3**	**2,489.108 3**	**0.7323**		**2,507.416 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4650	3.8878	33.9376	0.0843	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,388.3011	8,388.3011	0.3105		8,396.062 5
Total	**4.4650**	**3.8878**	**33.9376**	**0.0843**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,388.301 1**	**8,388.301 1**	**0.3105**		**8,396.062 5**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402		2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**		**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1475	3.4842	30.8316	0.0811	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,077.546 0	8,077.546 0	0.2762		8,084.450 5
Total	**4.1475**	**3.4842**	**30.8316**	**0.0811**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,077.546 0**	**8,077.546 0**	**0.2762**		**8,084.450 5**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402	0.0000	2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**	**0.0000**	**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1475	3.4842	30.8316	0.0811	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,077.546 0	8,077.546 0	0.2762		8,084.450 5
Total	**4.1475**	**3.4842**	**30.8316**	**0.0811**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,077.546 0**	**8,077.546 0**	**0.2762**		**8,084.450 5**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920		2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**		**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8711	3.1330	28.2324	0.0780	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		7,766.770 8	7,766.770 8	0.2467		7,772.939 1
Total	**3.8711**	**3.1330**	**28.2324**	**0.0780**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**7,766.770 8**	**7,766.770 8**	**0.2467**		**7,772.939 1**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920	0.0000	2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**	**0.0000**	**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8711	3.1330	28.2324	0.0780	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		7,766.770 8	7,766.770 8	0.2467		7,772.939 1
Total	**3.8711**	**3.1330**	**28.2324**	**0.0780**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**7,766.770 8**	**7,766.770 8**	**0.2467**		**7,772.939 1**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6366	2.8351	25.9695	0.0749	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,459.177 3	7,459.177 3	0.2225		7,464.739 1
Total	**3.6366**	**2.8351**	**25.9695**	**0.0749**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,459.177 3**	**7,459.177 3**	**0.2225**		**7,464.739 1**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6366	2.8351	25.9695	0.0749	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,459.1773	7,459.1773	0.2225		7,464.7391
Total	**3.6366**	**2.8351**	**25.9695**	**0.0749**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,459.1773**	**7,459.1773**	**0.2225**		**7,464.7391**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4281	2.5729	23.8531	0.0718	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,150.989 1	7,150.989 1	0.1994		7,155.974 1
Total	**3.4281**	**2.5729**	**23.8531**	**0.0718**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,150.989 1**	**7,150.989 1**	**0.1994**		**7,155.974 1**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4281	2.5729	23.8531	0.0718	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,150.989 1	7,150.989 1	0.1994		7,155.974 1
Total	**3.4281**	**2.5729**	**23.8531**	**0.0718**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,150.989 1**	**7,150.989 1**	**0.1994**		**7,155.974 1**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2321	2.3382	22.0549	0.0693	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		6,905.403 5	6,905.403 5	0.1802		6,909.909 2
Total	**3.2321**	**2.3382**	**22.0549**	**0.0693**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**6,905.403 5**	**6,905.403 5**	**0.1802**		**6,909.909 2**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2321	2.3382	22.0549	0.0693	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		6,905.403 5	6,905.403 5	0.1802		6,909.909 2
Total	**3.2321**	**2.3382**	**22.0549**	**0.0693**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**6,905.403 5**	**6,905.403 5**	**0.1802**		**6,909.909 2**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0321	2.1297	20.4794	0.0671	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		6,687.448 7	6,687.448 7	0.1638		6,691.543 1
Total	**3.0321**	**2.1297**	**20.4794**	**0.0671**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**6,687.448 7**	**6,687.448 7**	**0.1638**		**6,691.543 1**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0321	2.1297	20.4794	0.0671	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		6,687.448 7	6,687.448 7	0.1638		6,691.543 1
Total	**3.0321**	**2.1297**	**20.4794**	**0.0671**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**6,687.448 7**	**6,687.448 7**	**0.1638**		**6,691.543 1**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8186	1.9343	18.9553	0.0651	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,493.833 0	6,493.833 0	0.1478		6,497.527 7
Total	**2.8186**	**1.9343**	**18.9553**	**0.0651**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,493.833 0**	**6,493.833 0**	**0.1478**		**6,497.527 7**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8186	1.9343	18.9553	0.0651	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,493.833 0	6,493.833 0	0.1478		6,497.527 7
Total	**2.8186**	**1.9343**	**18.9553**	**0.0651**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,493.833 0**	**6,493.833 0**	**0.1478**		**6,497.527 7**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.6061	1.7518	17.5763	0.0634	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,322.338 9	6,322.338 9	0.1334		6,325.672 6
Total	**2.6061**	**1.7518**	**17.5763**	**0.0634**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,322.338 9**	**6,322.338 9**	**0.1334**		**6,325.672 6**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.6061	1.7518	17.5763	0.0634	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,322.3389	6,322.3389	0.1334		6,325.6726
Total	**2.6061**	**1.7518**	**17.5763**	**0.0634**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,322.3389**	**6,322.3389**	**0.1334**		**6,325.6726**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3781	1.5745	16.2329	0.0619	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,170.764 5	6,170.764 5	0.1194		6,173.749 3
Total	**2.3781**	**1.5745**	**16.2329**	**0.0619**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,170.764 5**	**6,170.764 5**	**0.1194**		**6,173.749 3**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3781	1.5745	16.2329	0.0619	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,170.764 5	6,170.764 5	0.1194		6,173.749 3
Total	**2.3781**	**1.5745**	**16.2329**	**0.0619**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,170.764 5**	**6,170.764 5**	**0.1194**		**6,173.749 3**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1751	1.4216	15.0642	0.0605	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,037.7413	6,037.7413	0.1073		6,040.4234
Total	**2.1751**	**1.4216**	**15.0642**	**0.0605**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,037.7413**	**6,037.7413**	**0.1073**		**6,040.4234**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1751	1.4216	15.0642	0.0605	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,037.741 3	6,037.741 3	0.1073		6,040.423 4
Total	**2.1751**	**1.4216**	**15.0642**	**0.0605**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,037.741 3**	**6,037.741 3**	**0.1073**		**6,040.423 4**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.0015	1.2925	14.0711	0.0593	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		5,921.672 2	5,921.672 2	0.0970		5,924.096 9
Total	**2.0015**	**1.2925**	**14.0711**	**0.0593**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**5,921.672 2**	**5,921.672 2**	**0.0970**		**5,924.096 9**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.0015	1.2925	14.0711	0.0593	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		5,921.6722	5,921.6722	0.0970		5,924.0969
Total	**2.0015**	**1.2925**	**14.0711**	**0.0593**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**5,921.6722**	**5,921.6722**	**0.0970**		**5,924.0969**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8593	1.1878	13.1630	0.0583	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		5,820.4105	5,820.4105	0.0876		5,822.6004
Total	**1.8593**	**1.1878**	**13.1630**	**0.0583**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**5,820.4105**	**5,820.4105**	**0.0876**		**5,822.6004**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8593	1.1878	13.1630	0.0583	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		5,820.4105	5,820.4105	0.0876		5,822.6004
Total	**1.8593**	**1.1878**	**13.1630**	**0.0583**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**5,820.4105**	**5,820.4105**	**0.0876**		**5,822.6004**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.0806	5,733.0806	0.0794		5,735.0656
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.0806**	**5,733.0806**	**0.0794**		**5,735.0656**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.0806	5,733.0806	0.0794		5,735.0656
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.0806**	**5,733.0806**	**0.0794**		**5,735.0656**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239		2,937.9648	2,937.9648	0.0992		2,940.4445
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**		**2,937.9648**	**2,937.9648**	**0.0992**		**2,940.4445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3039	0.8449	10.0261	0.0546	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,458.3089	5,458.3089	0.0556		5,459.6982
Total	**1.3039**	**0.8449**	**10.0261**	**0.0546**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,458.3089**	**5,458.3089**	**0.0556**		**5,459.6982**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239	0.0000	2,937.9648	2,937.9648	0.0992		2,940.4445
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.0992**		**2,940.4445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3039	0.8449	10.0261	0.0546	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,458.3089	5,458.3089	0.0556		5,459.6982
Total	**1.3039**	**0.8449**	**10.0261**	**0.0546**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,458.3089**	**5,458.3089**	**0.0556**		**5,459.6982**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0665**	**0.0599**	**0.5148**	**1.2100e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**120.0862**	**120.0862**	**4.8100e-003**		**120.2063**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0665**	**0.0599**	**0.5148**	**1.2100e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**120.0862**	**120.0862**	**4.8100e-003**		**120.2063**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1565	181.9760	51.7039	0.4450	10.8707	0.5752	11.4459	3.1288	0.5501	3.6789		46,813.1816	46,813.1816	2.2317		46,868.9737
Worker	24.0590	21.6853	186.2866	0.4368	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		43,455.1882	43,455.1882	1.7388		43,498.6577
Total	**30.2155**	**203.6614**	**237.9905**	**0.8818**	**55.4604**	**0.9475**	**56.4079**	**14.9561**	**0.8935**	**15.8496**		**90,268.3698**	**90,268.3698**	**3.9705**		**90,367.6315**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1565	181.9760	51.7039	0.4450	10.8707	0.5752	11.4459	3.1288	0.5501	3.6789		46,813.1816	46,813.1816	2.2317		46,868.9737
Worker	24.0590	21.6853	186.2866	0.4368	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		43,455.1882	43,455.1882	1.7388		43,498.6577
Total	**30.2155**	**203.6614**	**237.9905**	**0.8818**	**55.4604**	**0.9475**	**56.4079**	**14.9561**	**0.8935**	**15.8496**		**90,268.3698**	**90,268.3698**	**3.9705**		**90,367.6315**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6422	172.0742	46.9074	0.4410	10.8717	0.5014	11.3731	3.1291	0.4796	3.6087		46,408.9486	46,408.9486	2.1631		46,463.0269
Worker	22.3167	19.4317	169.6253	0.4213	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		41,926.0573	41,926.0573	1.5517		41,964.8500
Total	**27.9589**	**191.5059**	**216.5327**	**0.8622**	**55.4614**	**0.8603**	**56.3218**	**14.9564**	**0.8105**	**15.7669**		**88,335.0059**	**88,335.0059**	**3.7148**		**88,427.8769**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6422	172.0742	46.9074	0.4410	10.8717	0.5014	11.3731	3.1291	0.4796	3.6087		46,408.94 86	46,408.94 86	2.1631		46,463.02 69
Worker	22.3167	19.4317	169.6253	0.4213	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		41,926.05 73	41,926.05 73	1.5517		41,964.85 00
Total	**27.9589**	**191.5059**	**216.5327**	**0.8622**	**55.4614**	**0.8603**	**56.3218**	**14.9564**	**0.8105**	**15.7669**		**88,335.00 59**	**88,335.00 59**	**3.7148**		**88,427.87 69**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.2613	141.6809	40.2608	0.4330	10.8727	0.2158	11.0885	3.1295	0.2063	3.3358		45,586.9498	45,586.9498	1.7592		45,630.9296
Worker	20.7299	17.4147	154.1012	0.4055	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		40,372.8541	40,372.8541	1.3804		40,407.3642
Total	**24.9912**	**159.0956**	**194.3621**	**0.8385**	**55.4624**	**0.5633**	**56.0257**	**14.9568**	**0.5266**	**15.4834**		**85,959.8039**	**85,959.8039**	**3.1396**		**86,038.2938**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.2613	141.6809	40.2608	0.4330	10.8727	0.2158	11.0885	3.1295	0.2063	3.3358		45,586.9498	45,586.9498	1.7592		45,630.9296
Worker	20.7299	17.4147	154.1012	0.4055	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		40,372.8541	40,372.8541	1.3804		40,407.3642
Total	**24.9912**	**159.0956**	**194.3621**	**0.8385**	**55.4624**	**0.5633**	**56.0257**	**14.9568**	**0.5266**	**15.4834**		**85,959.8039**	**85,959.8039**	**3.1396**		**86,038.2938**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0276	138.3663	37.5439	0.4298	10.8736	0.2003	11.0739	3.1298	0.1915	3.3213		45,261.2123	45,261.2123	1.7357		45,304.6052
Worker	19.3486	15.6593	141.1102	0.3898	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		38,819.5505	38,819.5505	1.2332		38,850.3806
Total	**23.3762**	**154.0257**	**178.6541**	**0.8196**	**55.4633**	**0.5371**	**56.0004**	**14.9571**	**0.5018**	**15.4589**		**84,080.7628**	**84,080.7628**	**2.9689**		**84,154.9857**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0276	138.3663	37.5439	0.4298	10.8736	0.2003	11.0739	3.1298	0.1915	3.3213		45,261.2123	45,261.2123	1.7357		45,304.6052
Worker	19.3486	15.6593	141.1102	0.3898	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		38,819.5505	38,819.5505	1.2332		38,850.3806
Total	**23.3762**	**154.0257**	**178.6541**	**0.8196**	**55.4633**	**0.5371**	**56.0004**	**14.9571**	**0.5018**	**15.4589**		**84,080.7628**	**84,080.7628**	**2.9689**		**84,154.9857**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8269	135.4087	35.3423	0.4268	10.8745	0.1858	11.0602	3.1301	0.1776	3.3077		44,955.78 97	44,955.78 97	1.7115		44,998.57 72
Worker	18.1763	14.1704	129.7998	0.3742	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		37,282.14 94	37,282.14 94	1.1120		37,309.94 82
Total	**22.0033**	**149.5791**	**165.1421**	**0.8010**	**55.4642**	**0.5154**	**55.9796**	**14.9574**	**0.4812**	**15.4386**		**82,237.93 90**	**82,237.93 90**	**2.8235**		**82,308.52 54**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8269	135.4087	35.3423	0.4268	10.8745	0.1858	11.0602	3.1301	0.1776	3.3077		44,955.7897	44,955.7897	1.7115		44,998.5772
Worker	18.1763	14.1704	129.7998	0.3742	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		37,282.1494	37,282.1494	1.1120		37,309.9482
Total	**22.0033**	**149.5791**	**165.1421**	**0.8010**	**55.4642**	**0.5154**	**55.9796**	**14.9574**	**0.4812**	**15.4386**		**82,237.9390**	**82,237.9390**	**2.8235**		**82,308.5254**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6770	132.9750	33.7827	0.4245	10.8750	0.1757	11.0507	3.1303	0.1679	3.2983		44,724.6449	44,724.6449	1.6903		44,766.9019
Worker	17.1341	12.8595	119.2213	0.3587	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		35,741.7763	35,741.7763	0.9966		35,766.6920
Total	**20.8112**	**145.8345**	**153.0041**	**0.7832**	**55.4648**	**0.4918**	**55.9565**	**14.9576**	**0.4590**	**15.4166**		**80,466.4212**	**80,466.4212**	**2.6869**		**80,533.5939**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6770	132.9750	33.7827	0.4245	10.8750	0.1757	11.0507	3.1303	0.1679	3.2983		44,724.6449	44,724.6449	1.6903		44,766.9019
Worker	17.1341	12.8595	119.2213	0.3587	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		35,741.7763	35,741.7763	0.9966		35,766.6920
Total	**20.8112**	**145.8345**	**153.0041**	**0.7832**	**55.4648**	**0.4918**	**55.9565**	**14.9576**	**0.4590**	**15.4166**		**80,466.4212**	**80,466.4212**	**2.6869**		**80,533.5939**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5473	130.7444	32.3775	0.4225	10.8756	0.1666	11.0422	3.1305	0.1593	3.2898		44,522.29 38	44,522.29 38	1.6695		44,564.03 21
Worker	16.1546	11.6869	110.2338	0.3463	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		34,514.30 03	34,514.30 03	0.9008		34,536.82 08
Total	**19.7019**	**142.4313**	**142.6113**	**0.7688**	**55.4653**	**0.4643**	**55.9296**	**14.9578**	**0.4333**	**15.3911**		**79,036.59 41**	**79,036.59 41**	**2.5704**		**79,100.85 29**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5473	130.7444	32.3775	0.4225	10.8756	0.1666	11.0422	3.1305	0.1593	3.2898		44,522.2938	44,522.2938	1.6695		44,564.0321
Worker	16.1546	11.6869	110.2338	0.3463	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		34,514.3003	34,514.3003	0.9008		34,536.8208
Total	**19.7019**	**142.4313**	**142.6113**	**0.7688**	**55.4653**	**0.4643**	**55.9296**	**14.9578**	**0.4333**	**15.3911**		**79,036.5941**	**79,036.5941**	**2.5704**		**79,100.8529**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400	128.8816	31.3774	0.4209	10.8760	0.1585	11.0345	3.1307	0.1515	3.2822		44,354.25 21	44,354.25 21	1.6459		44,395.39 99
Worker	15.1551	10.6445	102.3594	0.3353	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		33,424.92 78	33,424.92 78	0.8186		33,445.39 23
Total	**18.5951**	**139.5261**	**133.7368**	**0.7561**	**55.4658**	**0.4355**	**55.9013**	**14.9580**	**0.4064**	**15.3644**		**77,779.17 99**	**77,779.17 99**	**2.4645**		**77,840.79 23**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400	128.8816	31.3774	0.4209	10.8760	0.1585	11.0345	3.1307	0.1515	3.2822		44,354.2521	44,354.2521	1.6459		44,395.3999
Worker	15.1551	10.6445	102.3594	0.3353	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		33,424.9278	33,424.9278	0.8186		33,445.3923
Total	**18.5951**	**139.5261**	**133.7368**	**0.7561**	**55.4658**	**0.4355**	**55.9013**	**14.9580**	**0.4064**	**15.3644**		**77,779.1799**	**77,779.1799**	**2.4645**		**77,840.7923**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3510	127.1858	30.5340	0.4194	10.8764	0.1511	11.0275	3.1308	0.1444	3.2752		44,208.6467	44,208.6467	1.6273		44,249.3299
Worker	14.0880	9.6678	94.7417	0.3255	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		32,457.2057	32,457.2057	0.7387		32,475.6726
Total	**17.4390**	**136.8537**	**125.2756**	**0.7449**	**55.4662**	**0.4088**	**55.8750**	**14.9581**	**0.3815**	**15.3397**		**76,665.8524**	**76,665.8524**	**2.3660**		**76,725.0025**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3510	127.1858	30.5340	0.4194	10.8764	0.1511	11.0275	3.1308	0.1444	3.2752		44,208.6467	44,208.6467	1.6273		44,249.3299
Worker	14.0880	9.6678	94.7417	0.3255	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		32,457.2057	32,457.2057	0.7387		32,475.6726
Total	**17.4390**	**136.8537**	**125.2756**	**0.7449**	**55.4662**	**0.4088**	**55.8750**	**14.9581**	**0.3815**	**15.3397**		**76,665.8524**	**76,665.8524**	**2.3660**		**76,725.0025**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2791	125.7355	29.9050	0.4183	10.8768	0.1449	11.0217	3.1310	0.1385	3.2694		44,095.97 38	44,095.97 38	1.6071		44,136.15 20
Worker	13.0256	8.7557	87.8491	0.3168	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		31,600.05 12	31,600.05 12	0.6665		31,616.71 34
Total	**16.3047**	**134.4912**	**117.7541**	**0.7351**	**55.4665**	**0.3846**	**55.8512**	**14.9583**	**0.3590**	**15.3173**		**75,696.02 50**	**75,696.02 50**	**2.2736**		**75,752.86 54**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2791	125.7355	29.9050	0.4183	10.8768	0.1449	11.0217	3.1310	0.1385	3.2694		44,095.97 38	44,095.97 38	1.6071		44,136.15 20
Worker	13.0256	8.7557	87.8491	0.3168	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		31,600.05 12	31,600.05 12	0.6665		31,616.71 34
Total	**16.3047**	**134.4912**	**117.7541**	**0.7351**	**55.4665**	**0.3846**	**55.8512**	**14.9583**	**0.3590**	**15.3173**		**75,696.02 50**	**75,696.02 50**	**2.2736**		**75,752.86 54**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2194	124.4854	29.3777	0.4175	10.8772	0.1396	11.0167	3.1311	0.1334	3.2645		44,012.3836	44,012.3836	1.5928		44,052.2035
Worker	11.8862	7.8695	81.1348	0.3091	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		30,842.4584	30,842.4584	0.5967		30,857.3767
Total	**15.1056**	**132.3549**	**110.5125**	**0.7266**	**55.4669**	**0.3627**	**55.8296**	**14.9584**	**0.3387**	**15.2970**		**74,854.8420**	**74,854.8420**	**2.1895**		**74,909.5802**

3.8 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2194	124.4854	29.3777	0.4175	10.8772	0.1396	11.0167	3.1311	0.1334	3.2645		44,012.38 36	44,012.38 36	1.5928		44,052.20 35
Worker	11.8862	7.8695	81.1348	0.3091	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		30,842.45 84	30,842.45 84	0.5967		30,857.37 67
Total	**15.1056**	**132.3549**	**110.5125**	**0.7266**	**55.4669**	**0.3627**	**55.8296**	**14.9584**	**0.3387**	**15.2970**		**74,854.84 20**	**74,854.84 20**	**2.1895**		**74,909.58 02**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1701	123.3862	28.9861	0.4170	10.8775	0.1348	11.0123	3.1312	0.1289	3.2601		43,960.78 31	43,960.78 31	1.5788		44,000.25 35
Worker	10.8717	7.1051	75.2933	0.3024	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		30,177.58 72	30,177.58 72	0.5362		30,190.99 29
Total	**14.0418**	**130.4913**	**104.2794**	**0.7194**	**55.4672**	**0.3427**	**55.8099**	**14.9585**	**0.3200**	**15.2785**		**74,138.37 03**	**74,138.37 03**	**2.1150**		**74,191.24 64**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1701	123.3862	28.9861	0.4170	10.8775	0.1348	11.0123	3.1312	0.1289	3.2601		43,960.78 31	43,960.78 31	1.5788		44,000.25 35
Worker	10.8717	7.1051	75.2933	0.3024	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		30,177.58 72	30,177.58 72	0.5362		30,190.99 29
Total	**14.0418**	**130.4913**	**104.2794**	**0.7194**	**55.4672**	**0.3427**	**55.8099**	**14.9585**	**0.3200**	**15.2785**		**74,138.37 03**	**74,138.37 03**	**2.1150**		**74,191.24 64**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1321	122.4188	28.6832	0.4167	10.8777	0.1305	11.0082	3.1313	0.1247	3.2560		43,930.63 39	43,930.63 39	1.5683		43,969.84 19
Worker	10.0040	6.4600	70.3295	0.2965	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		29,597.45 54	29,597.45 54	0.4848		29,609.57 46
Total	**13.1362**	**128.8788**	**99.0127**	**0.7132**	**55.4675**	**0.3246**	**55.7921**	**14.9586**	**0.3033**	**15.2619**		**73,528.08 92**	**73,528.08 92**	**2.0531**		**73,579.41 65**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1321	122.4188	28.6832	0.4167	10.8777	0.1305	11.0082	3.1313	0.1247	3.2560		43,930.6339	43,930.6339	1.5683		43,969.8419
Worker	10.0040	6.4600	70.3295	0.2965	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		29,597.4554	29,597.4554	0.4848		29,609.5746
Total	**13.1362**	**128.8788**	**99.0127**	**0.7132**	**55.4675**	**0.3246**	**55.7921**	**14.9586**	**0.3033**	**15.2619**		**73,528.0892**	**73,528.0892**	**2.0531**		**73,579.4165**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0972	121.5821	28.3947	0.4165	10.8780	0.1266	11.0046	3.1314	0.1210	3.2524		43,916.5113	43,916.5113	1.5584		43,955.4724
Worker	9.2929	5.9369	65.7905	0.2914	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		29,091.3334	29,091.3334	0.4378		29,102.2787
Total	**12.3901**	**127.5190**	**94.1852**	**0.7079**	**55.4677**	**0.3081**	**55.7758**	**14.9587**	**0.2880**	**15.2466**		**73,007.8447**	**73,007.8447**	**1.9963**		**73,057.7512**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0972	121.5821	28.3947	0.4165	10.8780	0.1266	11.0046	3.1314	0.1210	3.2524		43,916.511 3	43,916.511 3	1.5584		43,955.47 24
Worker	9.2929	5.9369	65.7905	0.2914	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		29,091.33 34	29,091.33 34	0.4378		29,102.27 87
Total	**12.3901**	**127.5190**	**94.1852**	**0.7079**	**55.4677**	**0.3081**	**55.7758**	**14.9587**	**0.2880**	**15.2466**		**73,007.84 47**	**73,007.84 47**	**1.9963**		**73,057.75 12**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9911	118.8457	27.3804	0.4178	10.8789	0.1146	10.9935	3.1317	0.1095	3.2412		44,051.4353	44,051.4353	1.5318		44,089.7306
Worker	6.5169	4.2231	50.1118	0.2731	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		27,281.4923	27,281.4923	0.2778		27,288.4364
Total	**9.5080**	**123.0688**	**77.4922**	**0.6909**	**55.4686**	**0.2455**	**55.7140**	**14.9590**	**0.2299**	**15.1889**		**71,332.9276**	**71,332.9276**	**1.8096**		**71,378.1670**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.547 1	2,897.547 1	0.1041		2,900.150 3
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.547 1**	**2,897.547 1**	**0.1041**		**2,900.150 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9911	118.8457	27.3804	0.4178	10.8789	0.1146	10.9935	3.1317	0.1095	3.2412		44,051.43 53	44,051.43 53	1.5318		44,089.73 06
Worker	6.5169	4.2231	50.1118	0.2731	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		27,281.49 23	27,281.49 23	0.2778		27,288.43 64
Total	**9.5080**	**123.0688**	**77.4922**	**0.6909**	**55.4686**	**0.2455**	**55.7140**	**14.9590**	**0.2299**	**15.1889**		**71,332.92 76**	**71,332.92 76**	**1.8096**		**71,378.16 70**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	41.7500	257.8061	464.2337	2.1313	234.5979	0.9677	235.5656	62.7579	0.8994	63.6574		217,269.1556	217,269.1556	8.2713		217,475.9385
Unmitigated	44.9874	271.2523	522.2701	2.4532	274.3836	1.1068	275.4904	73.4011	1.0289	74.4300		250,014.9992	250,014.9992	9.2064		250,245.1589

4.2 Trip Summary Information

Salinas CASP Model Full Buildout (2040) - 2016.3.2 - Monterey County, Winter

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
NaturalGas Unmitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11623.6	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6236	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Unmitigated	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3870					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.3084	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.5102	16,009.4118	31,682.9220	19.2095	1.3197	32,556.4241
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**955.3325**	**27.9542**	**1,364.9292**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.5102**	**16,602.0918**	**32,275.6020**	**19.7752**	**1.3197**	**33,163.2480**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2614					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**145.1233**	**22.4920**	**335.5832**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7389**	**24,479.7389**	**1.0236**	**0.4379**	**24,635.8315**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2020) - 20% Buildout

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Elementary School	550.00	Student	4.00	45,981.85	0
High School	105.00	Student	3.60	13,929.40	0
Junior High School	151.00	Student	2.00	17,751.81	0
Library	4.40	1000sqft	0.10	4,400.00	0
City Park	29.60	Acre	29.60	1,289,376.00	0
Apartments Mid Rise	16.60	Dwelling Unit	0.44	16,600.00	61
Condo/Townhouse	540.00	Dwelling Unit	34.00	540,000.00	1982
Single Family Housing	240.00	Dwelling Unit	77.92	432,000.00	882
Regional Shopping Center	40.00	1000sqft	0.92	40,000.00	0
Supermarket	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers) and EIR student projections. Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling. Pop estimated at 3.67 persons/du.

Construction Phase - Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT - Default values.

Demolition - No construction modeled under this scenario.

Grading - No construction modeled under this scenario.

Vehicle Trips - Fehr & Peers

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	1.06	4.00
tblLandUse	LotAcreage	0.32	3.60
tblLandUse	LotAcreage	0.41	2.00
tblLandUse	LotAcreage	33.75	34.00
tblLandUse	Population	47.00	61.00
tblLandUse	Population	1,544.00	1,982.00
tblLandUse	Population	686.00	882.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3402	3.4120	2.2474	4.2400e-003	0.0811	0.1663	0.2474	0.0142	0.1546	0.1688	0.0000	373.4998	373.4998	0.0973	0.0000	375.9322
Maximum	**0.3402**	**3.4120**	**2.2474**	**4.2400e-003**	**0.0811**	**0.1663**	**0.2474**	**0.0142**	**0.1546**	**0.1688**	**0.0000**	**373.4998**	**373.4998**	**0.0973**	**0.0000**	**375.9322**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3402	3.4120	2.2474	4.2400e-003	0.0457	0.1663	0.2120	8.8800e-003	0.1546	0.1635	0.0000	373.4994	373.4994	0.0973	0.0000	375.9318
Maximum	**0.3402**	**3.4120**	**2.2474**	**4.2400e-003**	**0.0457**	**0.1663**	**0.2120**	**8.8800e-003**	**0.1546**	**0.1635**	**0.0000**	**373.4994**	**373.4994**	**0.0973**	**0.0000**	**375.9318**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.65**	**0.00**	**14.31**	**37.64**	**0.00**	**3.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.2199	1.2199
2	**4-1-2020**	**6-30-2020**	1.2186	1.2186
3	**7-1-2020**	**9-30-2020**	1.2320	1.2320
		Highest	1.2320	1.2320

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.0302	0.2937	16.7600	0.0168		1.2488	1.2488		1.2488	1.2488	116.5939	132.5344	249.1283	0.1560	9.8200e-003	255.9549
Energy	0.1046	0.9000	0.4270	5.7000e-003		0.0723	0.0723		0.0723	0.0723	0.0000	1,034.9425	1,034.9425	0.0198	0.0190	1,041.0927
Mobile	4.0382	17.1286	46.3578	0.1146	8.4096	0.1338	8.5434	2.2592	0.1258	2.3850	0.0000	10,482.7976	10,482.7976	0.5892	0.0000	10,497.5278
Waste						0.0000	0.0000		0.0000	0.0000	180.9198	0.0000	180.9198	10.6921	0.0000	448.2210
Water						0.0000	0.0000		0.0000	0.0000	19.7408	0.0000	19.7408	2.0276	0.0479	84.6967
Total	**16.1730**	**18.3223**	**63.5448**	**0.1371**	**8.4096**	**1.4549**	**9.8645**	**2.2592**	**1.4468**	**3.7060**	**317.2544**	**11,650.2745**	**11,967.5289**	**13.4847**	**0.0767**	**12,327.4931**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1283	0.2489	8.3194	1.4100e-003		0.0578	0.0578		0.0578	0.0578	0.0000	191.1356	191.1356	0.0166	3.2600e-003	192.5201
Energy	0.1046	0.9000	0.4270	5.7000e-003		0.0723	0.0723		0.0723	0.0723	0.0000	1,034.9425	1,034.9425	0.0198	0.0190	1,041.0927
Mobile	3.7997	15.6149	41.4453	0.0992	7.1902	0.1164	7.3066	1.9316	0.1094	2.0410	0.0000	9,070.5927	9,070.5927	0.5239	0.0000	9,083.6898
Waste						0.0000	0.0000		0.0000	0.0000	180.9198	0.0000	180.9198	10.6921	0.0000	448.2210
Water						0.0000	0.0000		0.0000	0.0000	15.7926	0.0000	15.7926	1.6221	0.0383	67.7574
Total	**9.0326**	**16.7638**	**50.1916**	**0.1063**	**7.1902**	**0.2464**	**7.4367**	**1.9316**	**0.2394**	**2.1711**	**196.7124**	**10,296.6708**	**10,493.3831**	**12.8744**	**0.0605**	**10,833.2810**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**44.15**	**8.51**	**21.01**	**22.49**	**14.50**	**83.06**	**24.61**	**14.50**	**83.45**	**41.42**	**38.00**	**11.62**	**12.32**	**4.53**	**21.05**	**12.12**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	10/6/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0644	0.0000	0.0644	9.7500e-003	0.0000	9.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3312	3.3201	2.1753	3.8800e-003		0.1659	0.1659		0.1542	0.1542	0.0000	339.9861	339.9861	0.0960	0.0000	342.3855
Total	**0.3312**	**3.3201**	**2.1753**	**3.8800e-003**	**0.0644**	**0.1659**	**0.2302**	**9.7500e-003**	**0.1542**	**0.1639**	**0.0000**	**339.9861**	**339.9861**	**0.0960**	**0.0000**	**342.3855**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5600e-003	6.1000e-003	0.0546	1.3000e-004	0.0119	1.1000e-004	0.0120	3.1700e-003	1.0000e-004	3.2700e-003	0.0000	11.3376	11.3376	4.9000e-004	0.0000	11.3498
Total	**8.9800e-003**	**0.0919**	**0.0721**	**3.6000e-004**	**0.0167**	**4.4000e-004**	**0.0172**	**4.4900e-003**	**4.2000e-004**	**4.9100e-003**	**0.0000**	**33.5137**	**33.5137**	**1.3200e-003**	**0.0000**	**33.5467**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0290	0.0000	0.0290	4.3900e-003	0.0000	4.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3312	3.3201	2.1753	3.8800e-003		0.1659	0.1659		0.1542	0.1542	0.0000	339.9857	339.9857	0.0960	0.0000	342.3851
Total	**0.3312**	**3.3201**	**2.1753**	**3.8800e-003**	**0.0290**	**0.1659**	**0.1948**	**4.3900e-003**	**0.1542**	**0.1586**	**0.0000**	**339.9857**	**339.9857**	**0.0960**	**0.0000**	**342.3851**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5600e-003	6.1000e-003	0.0546	1.3000e-004	0.0119	1.1000e-004	0.0120	3.1700e-003	1.0000e-004	3.2700e-003	0.0000	11.3376	11.3376	4.9000e-004	0.0000	11.3498
Total	**8.9800e-003**	**0.0919**	**0.0721**	**3.6000e-004**	**0.0167**	**4.4000e-004**	**0.0172**	**4.4900e-003**	**4.2000e-004**	**4.9100e-003**	**0.0000**	**33.5137**	**33.5137**	**1.3200e-003**	**0.0000**	**33.5467**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7997	15.6149	41.4453	0.0992	7.1902	0.1164	7.3066	1.9316	0.1094	2.0410	0.0000	9,070.5927	9,070.5927	0.5239	0.0000	9,083.6898
Unmitigated	4.0382	17.1286	46.3578	0.1146	8.4096	0.1338	8.5434	2.2592	0.1258	2.3850	0.0000	10,482.7976	10,482.7976	0.5892	0.0000	10,497.5278

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	110.39	106.07	97.28	310,848	265,775
City Park	55.94	673.40	495.50	441,800	377,739
Condo/Townhouse	3,137.40	3,061.80	2613.60	8,791,814	7,517,001
Elementary School	709.50	0.00	0.00	1,117,432	955,404
General Office Building	275.75	61.50	26.25	500,653	428,058
High School	179.55	64.05	26.25	369,553	315,968
Junior High School	244.62	0.00	0.00	392,824	335,864
Library	247.46	204.82	112.16	376,320	321,754
Regional Shopping Center	1,708.00	1,998.80	1009.60	2,892,552	2,473,132
Single Family Housing	2,284.80	2,378.40	2068.80	6,531,881	5,584,758
Supermarket	511.20	887.95	832.20	694,840	594,088
Total	9,464.61	9,436.79	7,281.64	22,420,517	19,169,542

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Library	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.1046	0.9000	0.4270	5.7000e-003		0.0723	0.0723		0.0723	0.0723	0.0000	1,034.9425	1,034.9425	0.0198	0.0190	1,041.0927
NaturalGas Unmitigated	0.1046	0.9000	0.4270	5.7000e-003		0.0723	0.0723		0.0723	0.0723	0.0000	1,034.9425	1,034.9425	0.0198	0.0190	1,041.0927

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	143415	7.7000e-004	6.6100e-003	2.8100e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6532	7.6532	1.5000e-004	1.4000e-004	7.6986
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.01104e+007	0.0545	0.4659	0.1982	2.9700e-003		0.0377	0.0377		0.0377	0.0377	0.0000	539.5308	539.5308	0.0103	9.8900e-003	542.7370
Elementary School	847905	4.5700e-003	0.0416	0.0349	2.5000e-004		3.1600e-003	3.1600e-003		3.1600e-003	3.1600e-003	0.0000	45.2475	45.2475	8.7000e-004	8.3000e-004	45.5163
General Office Building	409250	2.2100e-003	0.0201	0.0169	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.8391	21.8391	4.2000e-004	4.0000e-004	21.9689
High School	256858	1.3900e-003	0.0126	0.0106	8.0000e-005		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	13.7069	13.7069	2.6000e-004	2.5000e-004	13.7884
Junior High School	327343	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4683	17.4683	3.3000e-004	3.2000e-004	17.5721
Library	116072	6.3000e-004	5.6900e-003	4.7800e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.1940	6.1940	1.2000e-004	1.1000e-004	6.2309
Regional Shopping Center	94800	5.1000e-004	4.6500e-003	3.9000e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0589	5.0589	1.0000e-004	9.0000e-005	5.0890
Single Family Housing	6.97562e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2457	372.2457	7.1300e-003	6.8200e-003	374.4578
Supermarket	112400	6.1000e-004	5.5100e-003	4.6300e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	5.9981	5.9981	1.1000e-004	1.1000e-004	6.0337
Total		**0.1046**	**0.9000**	**0.4270**	**5.7000e-003**		**0.0723**	**0.0723**		**0.0723**	**0.0723**	**0.0000**	**1,034.9425**	**1,034.9425**	**0.0198**	**0.0190**	**1,041.0927**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	143415	7.7000e-004	6.6100e-003	2.8100e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6532	7.6532	1.5000e-004	1.4000e-004	7.6986
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.01104e+007	0.0545	0.4659	0.1982	2.9700e-003		0.0377	0.0377		0.0377	0.0377	0.0000	539.5308	539.5308	0.0103	9.8900e-003	542.7370
Elementary School	847905	4.5700e-003	0.0416	0.0349	2.5000e-004		3.1600e-003	3.1600e-003		3.1600e-003	3.1600e-003	0.0000	45.2475	45.2475	8.7000e-004	8.3000e-004	45.5163
General Office Building	409250	2.2100e-003	0.0201	0.0169	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.8391	21.8391	4.2000e-004	4.0000e-004	21.9689
High School	256858	1.3900e-003	0.0126	0.0106	8.0000e-005		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	13.7069	13.7069	2.6000e-004	2.5000e-004	13.7884
Junior High School	327343	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4683	17.4683	3.3000e-004	3.2000e-004	17.5721
Library	116072	6.3000e-004	5.6900e-003	4.7800e-003	3.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	6.1940	6.1940	1.2000e-004	1.1000e-004	6.2309
Regional Shopping Center	94800	5.1000e-004	4.6500e-003	3.9000e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0589	5.0589	1.0000e-004	9.0000e-005	5.0890
Single Family Housing	6.97562e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2457	372.2457	7.1300e-003	6.8200e-003	374.4578
Supermarket	112400	6.1000e-004	5.5100e-003	4.6300e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	5.9981	5.9981	1.1000e-004	1.1000e-004	6.0337
Total		**0.1046**	**0.9000**	**0.4270**	**5.7000e-003**		**0.0723**	**0.0723**		**0.0723**	**0.0723**	**0.0000**	**1,034.9425**	**1,034.9425**	**0.0198**	**0.0190**	**1,041.0927**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	68530.6	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.72453e +006	0.0000	0.0000	0.0000	0.0000
Elementary School	247842	0.0000	0.0000	0.0000	0.0000
General Office Building	445750	0.0000	0.0000	0.0000	0.0000
High School	75079.5	0.0000	0.0000	0.0000	0.0000
Junior High School	95682.3	0.0000	0.0000	0.0000	0.0000
Library	36344	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	427600	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.94174e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	205150	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	68530.6	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.72453e+006	0.0000	0.0000	0.0000	0.0000
Elementary School	247842	0.0000	0.0000	0.0000	0.0000
General Office Building	445750	0.0000	0.0000	0.0000	0.0000
High School	75079.5	0.0000	0.0000	0.0000	0.0000
Junior High School	95682.3	0.0000	0.0000	0.0000	0.0000
Library	36344	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	427600	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.94174e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	205150	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1283	0.2489	8.3194	1.4100e-003		0.0578	0.0578		0.0578	0.0578	0.0000	191.1356	191.1356	0.0166	3.2600e-003	192.5201
Unmitigated	12.0302	0.2937	16.7600	0.0168		1.2488	1.2488		1.2488	1.2488	116.5939	132.5344	249.1283	0.1560	9.8200e-003	255.9549

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.7243					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.5868	0.1982	8.5059	0.0164		1.2034	1.2034		1.2034	1.2034	116.5939	119.0927	235.6866	0.1429	9.8200e-003	242.1845
Landscaping	0.2521	0.0954	8.2541	4.3000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	13.4418	13.4418	0.0132	0.0000	13.7704
Total	**12.0302**	**0.2937**	**16.7600**	**0.0168**		**1.2488**	**1.2488**		**1.2488**	**1.2488**	**116.5939**	**132.5344**	**249.1283**	**0.1561**	**9.8200e-003**	**255.9549**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.7243					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0180	0.1534	0.0653	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	177.6938	177.6938	3.4100e-003	3.2600e-003	178.7497
Landscaping	0.2521	0.0954	8.2541	4.3000e-004		0.0454	0.0454		0.0454	0.0454	0.0000	13.4418	13.4418	0.0132	0.0000	13.7704
Total	**5.1283**	**0.2489**	**8.3194**	**1.4100e-003**		**0.0578**	**0.0578**		**0.0578**	**0.0578**	**0.0000**	**191.1356**	**191.1356**	**0.0166**	**3.2600e-003**	**192.5201**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.7926	1.6221	0.0383	67.7574
Unmitigated	19.7408	2.0276	0.0479	84.6967

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.08156 / 0.681851	0.3431	0.0352	8.3000e-004	1.4722
City Park	0 / 35.2678	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	35.1832 / 22.1807	11.1620	1.1464	0.0271	47.8900
Elementary School	1.33333 / 3.42857	0.4230	0.0435	1.0300e-003	1.8149
General Office Building	4.44334 / 2.72334	1.4097	0.1448	3.4200e-003	6.0481
High School	0.462521 / 1.18934	0.1467	0.0151	3.6000e-004	0.6296
Junior High School	0.36606 / 0.941298	0.1161	0.0119	2.8000e-004	0.4983
Library	0.137671 / 0.215332	0.0437	4.4900e-003	1.1000e-004	0.1874
Regional Shopping Center	2.9629 / 1.81597	0.9400	0.0966	2.2800e-003	4.0330
Single Family Housing	15.637 / 9.85809	4.9609	0.5095	0.0120	21.2844
Supermarket	0.616341 / 0.0190621	0.1955	0.0201	4.7000e-004	0.8389
Total		**19.7408**	**2.0276**	**0.0479**	**84.6967**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.865245 / 0.640258	0.2745	0.0282	6.7000e-004	1.1777
City Park	0 / 33.1165	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	28.1465 / 20.8277	8.9296	0.9172	0.0217	38.3120
Elementary School	1.06667 / 3.21943	0.3384	0.0348	8.2000e-004	1.4519
General Office Building	3.55467 / 2.55722	1.1277	0.1158	2.7300e-003	4.8385
High School	0.370017 / 1.11679	0.1174	0.0121	2.8000e-004	0.5037
Junior High School	0.292848 / 0.883879	0.0929	9.5400e-003	2.3000e-004	0.3986
Library	0.110137 / 0.202197	0.0349	3.5900e-003	8.0000e-005	0.1499
Regional Shopping Center	2.37032 / 1.7052	0.7520	0.0772	1.8200e-003	3.2264
Single Family Housing	12.5096 / 9.25674	3.9687	0.4076	9.6200e-003	17.0276
Supermarket	0.493073 / 0.0178993	0.1564	0.0161	3.8000e-004	0.6712
Total		**15.7926**	**1.6221**	**0.0383**	**67.7574**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	180.9198	10.6921	0.0000	448.2210
Unmitigated	180.9198	10.6921	0.0000	448.2210

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	7.64	1.5509	0.0917	0.0000	3.8422
City Park	2.55	0.5176	0.0306	0.0000	1.2824
Condo/Townhouse	248.4	50.4230	2.9799	0.0000	124.9207
Elementary School	100.38	20.3762	1.2042	0.0000	50.4813
General Office Building	23.25	4.7195	0.2789	0.0000	11.6925
High School	19.16	3.8893	0.2299	0.0000	9.6356
Junior High School	27.56	5.5944	0.3306	0.0000	13.8600
Library	4.05	0.8221	0.0486	0.0000	2.0368
Regional Shopping Center	42	8.5256	0.5039	0.0000	21.1219
Single Family Housing	388.08	78.7767	4.6556	0.0000	195.1660
Supermarket	28.2	5.7244	0.3383	0.0000	14.1818
Total		**180.9198**	**10.6921**	**0.0000**	**448.2210**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	7.64	1.5509	0.0917	0.0000	3.8422
City Park	2.55	0.5176	0.0306	0.0000	1.2824
Condo/Townhouse	248.4	50.4230	2.9799	0.0000	124.9207
Elementary School	100.38	20.3762	1.2042	0.0000	50.4813
General Office Building	23.25	4.7195	0.2789	0.0000	11.6925
High School	19.16	3.8893	0.2299	0.0000	9.6356
Junior High School	27.56	5.5944	0.3306	0.0000	13.8600
Library	4.05	0.8221	0.0486	0.0000	2.0368
Regional Shopping Center	42	8.5256	0.5039	0.0000	21.1219
Single Family Housing	388.08	78.7767	4.6556	0.0000	195.1660
Supermarket	28.2	5.7244	0.3383	0.0000	14.1818
Total		**180.9198**	**10.6921**	**0.0000**	**448.2210**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2020) - 20% Buildout

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Elementary School	550.00	Student	4.00	45,981.85	0
High School	105.00	Student	3.60	13,929.40	0
Junior High School	151.00	Student	2.00	17,751.81	0
Library	4.40	1000sqft	0.10	4,400.00	0
City Park	29.60	Acre	29.60	1,289,376.00	0
Apartments Mid Rise	16.60	Dwelling Unit	0.44	16,600.00	61
Condo/Townhouse	540.00	Dwelling Unit	34.00	540,000.00	1982
Single Family Housing	240.00	Dwelling Unit	77.92	432,000.00	882
Regional Shopping Center	40.00	1000sqft	0.92	40,000.00	0
Supermarket	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Salinas CASP Model Full Buildout (2020) - 20% Buildout - Monterey County, Summer

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers) and EIR student projections. Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling. Pop estimated at 3.67 persons/du.

Construction Phase - Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT - Default values.

Demolition - No construction modeled under this scenario.

Grading - No construction modeled under this scenario.

Vehicle Trips - Fehr & Peers

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	1.06	4.00
tblLandUse	LotAcreage	0.32	3.60
tblLandUse	LotAcreage	0.41	2.00
tblLandUse	LotAcreage	33.75	34.00
tblLandUse	Population	47.00	61.00
tblLandUse	Population	1,544.00	1,982.00
tblLandUse	Population	686.00	882.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.4023	34.0942	22.4985	0.0425	0.8164	1.6631	2.4795	0.1437	1.5460	1.6897	0.0000	4,126.8872	4,126.8872	1.0725	0.0000	4,153.7005
Maximum	**3.4023**	**34.0942**	**22.4985**	**0.0425**	**0.8164**	**1.6631**	**2.4795**	**0.1437**	**1.5460**	**1.6897**	**0.0000**	**4,126.8872**	**4,126.8872**	**1.0725**	**0.0000**	**4,153.7005**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.4023	34.0942	22.4985	0.0425	0.4625	1.6631	2.1255	0.0901	1.5460	1.6361	0.0000	4,126.8872	4,126.8872	1.0725	0.0000	4,153.7005
Maximum	**3.4023**	**34.0942**	**22.4985**	**0.0425**	**0.4625**	**1.6631**	**2.1255**	**0.0901**	**1.5460**	**1.6361**	**0.0000**	**4,126.8872**	**4,126.8872**	**1.0725**	**0.0000**	**4,153.7005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	43.36	0.00	14.28	37.29	0.00	3.17	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	191.1168	5.5983	273.4942	0.4027		29.7152	29.7152		29.7152	29.7152	3,134.7021	3,320.4183	6,455.1204	3.9578	0.2639	6,632.7189
Energy	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643
Mobile	27.8988	104.6875	298.3533	0.7623	54.9863	0.8464	55.8327	14.7309	0.7954	15.5263		76,840.0353	76,840.0353	4.1735		76,944.3729
Total	**219.5887**	**115.2173**	**574.1870**	**1.1963**	**54.9863**	**30.9575**	**85.9437**	**14.7309**	**30.9065**	**45.6373**	**3,134.7021**	**86,411.5707**	**89,546.2728**	**8.2511**	**0.3785**	**89,865.3561**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	29.0750	4.5058	67.6250	0.0274		0.6655	0.6655		0.6655	0.6655	0.0000	4,895.9477	4,895.9477	0.2075	0.0876	4,927.2356
Energy	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643
Mobile	26.3617	95.7907	264.4851	0.6597	47.0133	0.7362	47.7495	12.5949	0.6918	13.2867		66,503.2793	66,503.2793	3.6976		66,595.7200
Total	**56.0098**	**105.2281**	**334.4496**	**0.7183**	**47.0133**	**1.7976**	**48.8109**	**12.5949**	**1.7531**	**14.3480**	**0.0000**	**77,650.3440**	**77,650.3440**	**4.0249**	**0.2022**	**77,811.2199**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	74.49	8.67	41.75	39.96	14.50	94.19	43.21	14.50	94.33	68.56	100.00	10.14	13.28	51.22	46.59	13.41

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	10/6/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6436	0.0000	0.6436	0.0975	0.0000	0.0975			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.6436**	**1.6587**	**2.3023**	**0.0975**	**1.5419**	**1.6393**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0239	0.8399	0.1689	2.3300e-003	0.0496	3.3100e-003	0.0529	0.0136	3.1600e-003	0.0168		246.4818	246.4818	8.9200e-003		246.7047
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0901**	**0.8932**	**0.7453**	**3.6600e-003**	**0.1729**	**4.3800e-003**	**0.1772**	**0.0463**	**4.1400e-003**	**0.0504**		**379.1823**	**379.1823**	**0.0146**		**379.5469**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2896	0.0000	0.2896	0.0439	0.0000	0.0439			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2896**	**1.6587**	**1.9483**	**0.0439**	**1.5419**	**1.5857**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0239	0.8399	0.1689	2.3300e-003	0.0496	3.3100e-003	0.0529	0.0136	3.1600e-003	0.0168		246.4818	246.4818	8.9200e-003		246.7047
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0901**	**0.8932**	**0.7453**	**3.6600e-003**	**0.1729**	**4.3800e-003**	**0.1772**	**0.0463**	**4.1400e-003**	**0.0504**		**379.1823**	**379.1823**	**0.0146**		**379.5469**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	26.3617	95.7907	264.4851	0.6597	47.0133	0.7362	47.7495	12.5949	0.6918	13.2867		66,503.2793	66,503.2793	3.6976		66,595.7200
Unmitigated	27.8988	104.6875	298.3533	0.7623	54.9863	0.8464	55.8327	14.7309	0.7954	15.5263		76,840.0353	76,840.0353	4.1735		76,944.3729

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	110.39	106.07	97.28	310,848	265,775
City Park	55.94	673.40	495.50	441,800	377,739
Condo/Townhouse	3,137.40	3,061.80	2613.60	8,791,814	7,517,001
Elementary School	709.50	0.00	0.00	1,117,432	955,404
General Office Building	275.75	61.50	26.25	500,653	428,058
High School	179.55	64.05	26.25	369,553	315,968
Junior High School	244.62	0.00	0.00	392,824	335,864
Library	247.46	204.82	112.16	376,320	321,754
Regional Shopping Center	1,708.00	1,998.80	1009.60	2,892,552	2,473,132
Single Family Housing	2,284.80	2,378.40	2068.80	6,531,881	5,584,758
Supermarket	511.20	887.95	832.20	694,840	594,088
Total	9,464.61	9,436.79	7,281.64	22,420,517	19,169,542

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Library	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643
NaturalGas Unmitigated	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	392.917	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.2256	46.2256	8.9000e-004	8.5000e-004	46.5003
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	27699.8	0.2987	2.5527	1.0863	0.0163		0.2064	0.2064		0.2064	0.2064		3,258.7995	3,258.7995	0.0625	0.0597	3,278.1649
Elementary School	2323.03	0.0251	0.2278	0.1913	1.3700e-003		0.0173	0.0173		0.0173	0.0173		273.2974	273.2974	5.2400e-003	5.0100e-003	274.9215
General Office Building	1121.23	0.0121	0.1099	0.0923	6.6000e-004		8.3500e-003	8.3500e-003		8.3500e-003	8.3500e-003		131.9098	131.9098	2.5300e-003	2.4200e-003	132.6936
High School	703.721	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7907	82.7907	1.5900e-003	1.5200e-003	83.2827
Junior High School	896.831	9.6700e-003	0.0879	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5096	105.5096	2.0200e-003	1.9300e-003	106.1365
Library	318.005	3.4300e-003	0.0312	0.0262	1.9000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003		37.4124	37.4124	7.2000e-004	6.9000e-004	37.6347
Regional Shopping Center	259.726	2.8000e-003	0.0255	0.0214	1.5000e-004		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003		30.5560	30.5560	5.9000e-004	5.6000e-004	30.7376
Single Family Housing	19111.3	0.2061	1.7612	0.7495	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3873	2,248.3873	0.0431	0.0412	2,261.7483
Supermarket	307.945	3.3200e-003	0.0302	0.0254	1.8000e-004		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003		36.2289	36.2289	6.9000e-004	6.6000e-004	36.4441
Total		**0.5730**	**4.9316**	**2.3395**	**0.0313**		**0.3959**	**0.3959**		**0.3959**	**0.3959**		**6,251.1171**	**6,251.1171**	**0.1198**	**0.1146**	**6,288.2643**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.392917	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.2256	46.2256	8.9000e-004	8.5000e-004	46.5003
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	27.6998	0.2987	2.5527	1.0863	0.0163		0.2064	0.2064		0.2064	0.2064		3,258.7995	3,258.7995	0.0625	0.0597	3,278.1649
Elementary School	2.32303	0.0251	0.2278	0.1913	1.3700e-003		0.0173	0.0173		0.0173	0.0173		273.2974	273.2974	5.2400e-003	5.0100e-003	274.9215
General Office Building	1.12123	0.0121	0.1099	0.0923	6.6000e-004		8.3500e-003	8.3500e-003		8.3500e-003	8.3500e-003		131.9098	131.9098	2.5300e-003	2.4200e-003	132.6936
High School	0.703721	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7907	82.7907	1.5900e-003	1.5200e-003	83.2827
Junior High School	0.896831	9.6700e-003	0.0879	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5096	105.5096	2.0200e-003	1.9300e-003	106.1365
Library	0.318005	3.4300e-003	0.0312	0.0262	1.9000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003		37.4124	37.4124	7.2000e-004	6.9000e-004	37.6347
Regional Shopping Center	0.259726	2.8000e-003	0.0255	0.0214	1.5000e-004		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003		30.5560	30.5560	5.9000e-004	5.6000e-004	30.7376
Single Family Housing	19.1113	0.2061	1.7612	0.7495	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3873	2,248.3873	0.0431	0.0412	2,261.7483
Supermarket	0.307945	3.3200e-003	0.0302	0.0254	1.8000e-004		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003		36.2289	36.2289	6.9000e-004	6.6000e-004	36.4441
Total		**0.5730**	**4.9316**	**2.3395**	**0.0313**		**0.3959**	**0.3959**		**0.3959**	**0.3959**		**6,251.1171**	**6,251.1171**	**0.1198**	**0.1146**	**6,288.2643**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	29.0750	4.5058	67.6250	0.0274		0.6655	0.6655		0.6655	0.6655	0.0000	4,895.947 7	4,895.947 7	0.2075	0.0876	4,927.235 6
Unmitigated	191.1168	5.5983	273.4942	0.4027		29.7152	29.7152		29.7152	29.7152	3,134.702 1	3,320.418 3	6,455.120 4	3.9578	0.2639	6,632.718 9

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.9688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	160.6547	4.8348	207.4617	0.3992		29.3523	29.3523		29.3523	29.3523	3,134.702 1	3,201.882 4	6,336.584 4	3.8419	0.2639	6,511.2848
Landscaping	2.0167	0.7635	66.0325	3.4800e-003		0.3629	0.3629		0.3629	0.3629		118.5360	118.5360	0.1159		121.4341
Total	**191.1168**	**5.5983**	**273.4942**	**0.4027**		**29.7152**	**29.7152**		**29.7152**	**29.7152**	**3,134.702 1**	**3,320.418 3**	**6,455.120 4**	**3.9578**	**0.2639**	**6,632.718 9**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.9688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	22.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4379	3.7423	1.5925	0.0239		0.3026	0.3026		0.3026	0.3026	0.0000	4,777.4118	4,777.4118	0.0916	0.0876	4,805.8015
Landscaping	2.0167	0.7635	66.0325	3.4800e-003		0.3629	0.3629		0.3629	0.3629		118.5360	118.5360	0.1159		121.4341
Total	**29.0750**	**4.5058**	**67.6250**	**0.0274**		**0.6655**	**0.6655**		**0.6655**	**0.6655**	**0.0000**	**4,895.9477**	**4,895.9477**	**0.2075**	**0.0876**	**4,927.2356**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2020) - 20% Buildout

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0
Elementary School	550.00	Student	4.00	45,981.85	0
High School	105.00	Student	3.60	13,929.40	0
Junior High School	151.00	Student	2.00	17,751.81	0
Library	4.40	1000sqft	0.10	4,400.00	0
City Park	29.60	Acre	29.60	1,289,376.00	0
Apartments Mid Rise	16.60	Dwelling Unit	0.44	16,600.00	61
Condo/Townhouse	540.00	Dwelling Unit	34.00	540,000.00	1982
Single Family Housing	240.00	Dwelling Unit	77.92	432,000.00	882
Regional Shopping Center	40.00	1000sqft	0.92	40,000.00	0
Supermarket	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers) and EIR student projections. Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling. Pop estimated at 3.67 persons/du.

Construction Phase - Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT - Default values.

Demolition - No construction modeled under this scenario.

Grading - No construction modeled under this scenario.

Vehicle Trips - Fehr & Peers

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	1.06	4.00
tblLandUse	LotAcreage	0.32	3.60
tblLandUse	LotAcreage	0.41	2.00
tblLandUse	LotAcreage	33.75	34.00
tblLandUse	Population	47.00	61.00
tblLandUse	Population	1,544.00	1,982.00
tblLandUse	Population	686.00	882.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.4089	34.1279	22.5031	0.0423	0.8164	1.6632	2.4796	0.1437	1.5461	1.6898	0.0000	4,113.5981	4,113.5981	1.0729	0.0000	4,140.4202
Maximum	**3.4089**	**34.1279**	**22.5031**	**0.0423**	**0.8164**	**1.6632**	**2.4796**	**0.1437**	**1.5461**	**1.6898**	**0.0000**	**4,113.5981**	**4,113.5981**	**1.0729**	**0.0000**	**4,140.4202**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.4089	34.1279	22.5031	0.0423	0.4625	1.6632	2.1256	0.0901	1.5461	1.6362	0.0000	4,113.5981	4,113.5981	1.0729	0.0000	4,140.4202
Maximum	**3.4089**	**34.1279**	**22.5031**	**0.0423**	**0.4625**	**1.6632**	**2.1256**	**0.0901**	**1.5461**	**1.6362**	**0.0000**	**4,113.5981**	**4,113.5981**	**1.0729**	**0.0000**	**4,140.4202**

Salinas CASP Model Full Buildout (2020) - 20% Buildout - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	43.36	0.00	14.28	37.29	0.00	3.17	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	191.1168	5.5983	273.4942	0.4027		29.7152	29.7152		29.7152	29.7152	3,134.7021	3,320.4183	6,455.1204	3.9578	0.2639	6,632.7189
Energy	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643
Mobile	26.1280	112.7127	313.7257	0.7221	54.9863	0.8559	55.8422	14.7309	0.8045	15.5354		72,769.5647	72,769.5647	4.2393		72,875.5471
Total	**217.8179**	**123.2426**	**589.5594**	**1.1561**	**54.9863**	**30.9670**	**85.9533**	**14.7309**	**30.9156**	**45.6464**	**3,134.7021**	**82,341.1000**	**85,475.8021**	**8.3169**	**0.3785**	**85,796.5303**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	29.0750	4.5058	67.6250	0.0274		0.6655	0.6655		0.6655	0.6655	0.0000	4,895.9477	4,895.9477	0.2075	0.0876	4,927.2356
Energy	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.2643
Mobile	24.6019	102.6805	282.1162	0.6247	47.0133	0.7457	47.7590	12.5949	0.7009	13.2958		62,950.9474	62,950.9474	3.7839		63,045.5451
Total	**54.2500**	**112.1179**	**352.0807**	**0.6834**	**47.0133**	**1.8071**	**48.8204**	**12.5949**	**1.7622**	**14.3571**	**0.0000**	**74,098.0122**	**74,098.0122**	**4.1112**	**0.2022**	**74,261.0450**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**75.09**	**9.03**	**40.28**	**40.89**	**14.50**	**94.16**	**43.20**	**14.50**	**94.30**	**68.55**	**100.00**	**10.01**	**13.31**	**50.57**	**46.59**	**13.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	10/6/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6436	0.0000	0.6436	0.0975	0.0000	0.0975			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.6436**	**1.6587**	**2.3023**	**0.0975**	**1.5419**	**1.6393**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0247	0.8597	0.1828	2.2800e-003	0.0496	3.3900e-003	0.0530	0.0136	3.2400e-003	0.0168		241.6436	241.6436	9.5300e-003		241.8820
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0968**	**0.9269**	**0.7499**	**3.5300e-003**	**0.1729**	**4.4600e-003**	**0.1773**	**0.0463**	**4.2200e-003**	**0.0505**		**365.8932**	**365.8932**	**0.0149**		**366.2666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2896	0.0000	0.2896	0.0439	0.0000	0.0439			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2896**	**1.6587**	**1.9483**	**0.0439**	**1.5419**	**1.5857**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0247	0.8597	0.1828	2.2800e-003	0.0496	3.3900e-003	0.0530	0.0136	3.2400e-003	0.0168		241.6436	241.6436	9.5300e-003		241.8820
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0968**	**0.9269**	**0.7499**	**3.5300e-003**	**0.1729**	**4.4600e-003**	**0.1773**	**0.0463**	**4.2200e-003**	**0.0505**		**365.8932**	**365.8932**	**0.0149**		**366.2666**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	24.6019	102.6805	282.1162	0.6247	47.0133	0.7457	47.7590	12.5949	0.7009	13.2958		62,950.9474	62,950.9474	3.7839		63,045.5451
Unmitigated	26.1280	112.7127	313.7257	0.7221	54.9863	0.8559	55.8422	14.7309	0.8045	15.5354		72,769.5647	72,769.5647	4.2393		72,875.5471

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	110.39	106.07	97.28	310,848	265,775
City Park	55.94	673.40	495.50	441,800	377,739
Condo/Townhouse	3,137.40	3,061.80	2613.60	8,791,814	7,517,001
Elementary School	709.50	0.00	0.00	1,117,432	955,404
General Office Building	275.75	61.50	26.25	500,653	428,058
High School	179.55	64.05	26.25	369,553	315,968
Junior High School	244.62	0.00	0.00	392,824	335,864
Library	247.46	204.82	112.16	376,320	321,754
Regional Shopping Center	1,708.00	1,998.80	1009.60	2,892,552	2,473,132
Single Family Housing	2,284.80	2,378.40	2068.80	6,531,881	5,584,758
Supermarket	511.20	887.95	832.20	694,840	594,088
Total	9,464.61	9,436.79	7,281.64	22,420,517	19,169,542

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Library	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.264 3
NaturalGas Unmitigated	0.5730	4.9316	2.3395	0.0313		0.3959	0.3959		0.3959	0.3959		6,251.1171	6,251.1171	0.1198	0.1146	6,288.264 3

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	392.917	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.2256	46.2256	8.9000e-004	8.5000e-004	46.5003
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	27699.8	0.2987	2.5527	1.0863	0.0163		0.2064	0.2064		0.2064	0.2064		3,258.7995	3,258.7995	0.0625	0.0597	3,278.1649
Elementary School	2323.03	0.0251	0.2278	0.1913	1.3700e-003		0.0173	0.0173		0.0173	0.0173		273.2974	273.2974	5.2400e-003	5.0100e-003	274.9215
General Office Building	1121.23	0.0121	0.1099	0.0923	6.6000e-004		8.3500e-003	8.3500e-003		8.3500e-003	8.3500e-003		131.9098	131.9098	2.5300e-003	2.4200e-003	132.6936
High School	703.721	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7907	82.7907	1.5900e-003	1.5200e-003	83.2827
Junior High School	896.831	9.6700e-003	0.0879	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5096	105.5096	2.0200e-003	1.9300e-003	106.1365
Library	318.005	3.4300e-003	0.0312	0.0262	1.9000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003		37.4124	37.4124	7.2000e-004	6.9000e-004	37.6347
Regional Shopping Center	259.726	2.8000e-003	0.0255	0.0214	1.5000e-004		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003		30.5560	30.5560	5.9000e-004	5.6000e-004	30.7376
Single Family Housing	19111.3	0.2061	1.7612	0.7495	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3873	2,248.3873	0.0431	0.0412	2,261.7483
Supermarket	307.945	3.3200e-003	0.0302	0.0254	1.8000e-004		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003		36.2289	36.2289	6.9000e-004	6.6000e-004	36.4441
Total		**0.5730**	**4.9316**	**2.3395**	**0.0313**		**0.3959**	**0.3959**		**0.3959**	**0.3959**		**6,251.1171**	**6,251.1171**	**0.1198**	**0.1146**	**6,288.2643**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.392917	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.2256	46.2256	8.9000e-004	8.5000e-004	46.5003
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	27.6998	0.2987	2.5527	1.0863	0.0163		0.2064	0.2064		0.2064	0.2064		3,258.7995	3,258.7995	0.0625	0.0597	3,278.1649
Elementary School	2.32303	0.0251	0.2278	0.1913	1.3700e-003		0.0173	0.0173		0.0173	0.0173		273.2974	273.2974	5.2400e-003	5.0100e-003	274.9215
General Office Building	1.12123	0.0121	0.1099	0.0923	6.6000e-004		8.3500e-003	8.3500e-003		8.3500e-003	8.3500e-003		131.9098	131.9098	2.5300e-003	2.4200e-003	132.6936
High School	0.703721	7.5900e-003	0.0690	0.0580	4.1000e-004		5.2400e-003	5.2400e-003		5.2400e-003	5.2400e-003		82.7907	82.7907	1.5900e-003	1.5200e-003	83.2827
Junior High School	0.896831	9.6700e-003	0.0879	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5096	105.5096	2.0200e-003	1.9300e-003	106.1365
Library	0.318005	3.4300e-003	0.0312	0.0262	1.9000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003		37.4124	37.4124	7.2000e-004	6.9000e-004	37.6347
Regional Shopping Center	0.259726	2.8000e-003	0.0255	0.0214	1.5000e-004		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003		30.5560	30.5560	5.9000e-004	5.6000e-004	30.7376
Single Family Housing	19.1113	0.2061	1.7612	0.7495	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3873	2,248.3873	0.0431	0.0412	2,261.7483
Supermarket	0.307945	3.3200e-003	0.0302	0.0254	1.8000e-004		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003		36.2289	36.2289	6.9000e-004	6.6000e-004	36.4441
Total		**0.5730**	**4.9316**	**2.3395**	**0.0313**		**0.3959**	**0.3959**		**0.3959**	**0.3959**		**6,251.1171**	**6,251.1171**	**0.1198**	**0.1146**	**6,288.2643**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	29.0750	4.5058	67.6250	0.0274		0.6655	0.6655		0.6655	0.6655	0.0000	4,895.947 7	4,895.947 7	0.2075	0.0876	4,927.235 6
Unmitigated	191.1168	5.5983	273.4942	0.4027		29.7152	29.7152		29.7152	29.7152	3,134.702 1	3,320.418 3	6,455.120 4	3.9578	0.2639	6,632.718 9

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.9688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	160.6547	4.8348	207.4617	0.3992		29.3523	29.3523		29.3523	29.3523	3,134.702 1	3,201.882 4	6,336.584 4	3.8419	0.2639	6,511.2848
Landscaping	2.0167	0.7635	66.0325	3.4800e-003		0.3629	0.3629		0.3629	0.3629		118.5360	118.5360	0.1159		121.4341
Total	**191.1168**	**5.5983**	**273.4942**	**0.4027**		**29.7152**	**29.7152**		**29.7152**	**29.7152**	**3,134.702 1**	**3,320.418 3**	**6,455.120 4**	**3.9578**	**0.2639**	**6,632.718 9**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.9688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	22.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4379	3.7423	1.5925	0.0239		0.3026	0.3026		0.3026	0.3026	0.0000	4,777.4118	4,777.4118	0.0916	0.0876	4,805.8015
Landscaping	2.0167	0.7635	66.0325	3.4800e-003		0.3629	0.3629		0.3629	0.3629		118.5360	118.5360	0.1159		121.4341
Total	**29.0750**	**4.5058**	**67.6250**	**0.0274**		**0.6655**	**0.6655**		**0.6655**	**0.6655**	**0.0000**	**4,895.9477**	**4,895.9477**	**0.2075**	**0.0876**	**4,927.2356**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2050) - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5225	5.5490	3.6100	6.9800e-003	1.3162	0.2535	1.5697	0.5059	0.2341	0.7400	0.0000	615.2342	615.2342	0.1784	0.0000	619.6942
2021	4.8278	20.0249	25.8524	0.0849	6.0110	0.3085	6.3195	1.5983	0.2880	1.8863	0.0000	7,817.5869	7,817.5869	0.4715	0.0000	7,829.3741
2022	6.1648	28.8633	35.4648	0.1313	9.0740	0.3090	9.3830	2.4248	0.2898	2.7146	0.0000	12,133.2052	12,133.2052	0.6203	0.0000	12,148.7123
2023	5.7352	24.3197	32.3826	0.1278	9.0741	0.2483	9.3224	2.4249	0.2321	2.6570	0.0000	11,814.2703	11,814.2703	0.5510	0.0000	11,828.0453
2024	5.5286	23.6029	30.3428	0.1258	9.1440	0.2284	9.3725	2.4436	0.2134	2.6570	0.0000	11,642.5103	11,642.5103	0.5312	0.0000	11,655.7907
2025	5.2880	22.6569	28.2412	0.1225	9.1093	0.2057	9.3149	2.4343	0.1921	2.6264	0.0000	11,341.0692	11,341.0692	0.5088	0.0000	11,353.7885
2026	5.1169	22.1549	26.4556	0.1197	9.1093	0.2023	9.3116	2.4343	0.1889	2.6232	0.0000	11,092.9651	11,092.9651	0.4900	0.0000	11,105.2154
2027	4.9581	21.6990	24.9315	0.1175	9.1094	0.1982	9.3076	2.4343	0.1851	2.6194	0.0000	10,893.1923	10,893.1923	0.4741	0.0000	10,905.0449
2028	4.7823	21.2272	23.5319	0.1151	9.0746	0.1932	9.2678	2.4250	0.1805	2.6055	0.0000	10,676.1354	10,676.1354	0.4580	0.0000	10,687.5851
2029	4.6366	20.9497	22.3724	0.1138	9.1095	0.1900	9.2995	2.4344	0.1775	2.6118	0.0000	10,561.3501	10,561.3501	0.4463	0.0000	10,572.5083
2030	4.5243	19.8116	21.4309	0.1135	9.1096	0.1214	9.2309	2.4344	0.1175	2.5519	0.0000	10,519.0542	10,519.0542	0.3062	0.0000	10,526.7090
2031	4.3548	19.5237	20.3553	0.1122	9.1096	0.1181	9.2277	2.4344	0.1145	2.5489	0.0000	10,400.9714	10,400.9714	0.2947	0.0000	10,408.3379
2032	4.2206	19.3467	19.5018	0.1115	9.1445	0.1155	9.2601	2.4437	0.1121	2.5559	0.0000	10,339.5807	10,339.5807	0.2856	0.0000	10,346.7197

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2033	4.0608	18.9831	18.5709	0.1097	9.0748	0.1120	9.1867	2.4251	0.1088	2.5339	0.0000	10,174.9403	10,174.9403	0.2749	0.0000	10,181.8127
2034	3.9553	18.8016	17.8542	0.1089	9.0748	0.1095	9.1843	2.4251	0.1065	2.5316	0.0000	10,101.7462	10,101.7462	0.2671	0.0000	10,108.4242
2035	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2036	3.8462	18.3894	17.3538	0.1090	9.1446	0.0804	9.2251	2.4438	0.0776	2.5214	0.0000	10,116.9069	10,116.9069	0.2588	0.0000	10,123.3769
2037	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2038	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2927	10,078.2927	0.2578	0.0000	10,084.7381
2039	3.8168	18.2491	17.2213	0.1082	9.0748	0.0798	9.1547	2.4251	0.0770	2.5021	0.0000	10,039.6786	10,039.6786	0.2568	0.0000	10,046.0992
2040	1.3991	15.6987	11.2354	0.0888	6.6471	0.0401	6.6872	1.7951	0.0382	1.8332	0.0000	8,282.3088	8,282.3088	0.2023	0.0000	8,287.3670
Maximum	**6.1648**	**28.8633**	**35.4648**	**0.1313**	**9.1446**	**0.3090**	**9.3830**	**2.4438**	**0.2898**	**2.7146**	**0.0000**	**12,133.2052**	**12,133.2052**	**0.6203**	**0.0000**	**12,148.7123**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5225	5.5489	3.6100	6.9800e-003	0.6185	0.2535	0.8720	0.2344	0.2341	0.4686	0.0000	615.2335	615.2335	0.1784	0.0000	619.6936
2021	4.8278	20.0249	25.8524	0.0849	6.0110	0.3085	6.3195	1.5983	0.2880	1.8863	0.0000	7,817.5862	7,817.5862	0.4715	0.0000	7,829.3733
2022	6.1648	28.8632	35.4648	0.1313	9.0740	0.3090	9.3830	2.4248	0.2898	2.7146	0.0000	12,133.2045	12,133.2045	0.6203	0.0000	12,148.7116

Salinas CASP Model Full Buildout (2050) - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	5.7352	24.3197	32.3826	0.1278	9.0741	0.2483	9.3224	2.4249	0.2321	2.6570	0.0000	11,814.2695	11,814.2695	0.5510	0.0000	11,828.0446
2024	5.5286	23.6029	30.3428	0.1258	9.1440	0.2284	9.3725	2.4436	0.2134	2.6570	0.0000	11,642.5096	11,642.5096	0.5312	0.0000	11,655.7900
2025	5.2880	22.6569	28.2412	0.1225	9.1093	0.2057	9.3149	2.4343	0.1921	2.6264	0.0000	11,341.0684	11,341.0684	0.5088	0.0000	11,353.7877
2026	5.1169	22.1549	26.4556	0.1197	9.1093	0.2023	9.3116	2.4343	0.1889	2.6232	0.0000	11,092.9644	11,092.9644	0.4900	0.0000	11,105.2147
2027	4.9581	21.6990	24.9315	0.1175	9.1094	0.1982	9.3076	2.4343	0.1851	2.6194	0.0000	10,893.1916	10,893.1916	0.4741	0.0000	10,905.0442
2028	4.7823	21.2272	23.5319	0.1151	9.0746	0.1932	9.2678	2.4250	0.1805	2.6055	0.0000	10,676.1347	10,676.1347	0.4580	0.0000	10,687.5844
2029	4.6366	20.9497	22.3724	0.1138	9.1095	0.1900	9.2995	2.4344	0.1775	2.6118	0.0000	10,561.3494	10,561.3494	0.4463	0.0000	10,572.5076
2030	4.5243	19.8116	21.4309	0.1135	9.1096	0.1214	9.2309	2.4344	0.1175	2.5519	0.0000	10,519.0533	10,519.0533	0.3062	0.0000	10,526.7082
2031	4.3548	19.5237	20.3553	0.1122	9.1096	0.1181	9.2277	2.4344	0.1145	2.5489	0.0000	10,400.9706	10,400.9706	0.2947	0.0000	10,408.3370
2032	4.2206	19.3467	19.5018	0.1115	9.1445	0.1155	9.2601	2.4437	0.1121	2.5559	0.0000	10,339.5798	10,339.5798	0.2856	0.0000	10,346.7188
2033	4.0608	18.9831	18.5709	0.1097	9.0748	0.1120	9.1867	2.4251	0.1088	2.5339	0.0000	10,174.9395	10,174.9395	0.2749	0.0000	10,181.8118
2034	3.9553	18.8016	17.8542	0.1089	9.0748	0.1095	9.1843	2.4251	0.1065	2.5316	0.0000	10,101.7454	10,101.7454	0.2671	0.0000	10,108.4234
2035	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2036	3.8462	18.3894	17.3538	0.1090	9.1446	0.0804	9.2251	2.4438	0.0776	2.5214	0.0000	10,116.9061	10,116.9061	0.2588	0.0000	10,123.3761
2037	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2038	3.8315	18.3193	17.2875	0.1086	9.1097	0.0801	9.1899	2.4345	0.0773	2.5117	0.0000	10,078.2919	10,078.2919	0.2578	0.0000	10,084.7373
2039	3.8168	18.2491	17.2213	0.1082	9.0748	0.0798	9.1547	2.4251	0.0770	2.5021	0.0000	10,039.6778	10,039.6778	0.2568	0.0000	10,046.0984
2040	1.3991	15.6987	11.2354	0.0888	6.6471	0.0401	6.6872	1.7951	0.0382	1.8332	0.0000	8,282.3084	8,282.3084	0.2023	0.0000	8,287.3666

Maximum	**6.1648**	**28.8632**	**35.4648**	**0.1313**	**9.1446**	**0.3090**	**9.3830**	**2.4438**	**0.2898**	**2.7146**	**0.0000**	**12,133.2045**	**12,133.2045**	**0.6203**	**0.0000**	**12,148.7116**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.39**	**0.00**	**0.39**	**0.57**	**0.00**	**0.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**4-1-2020**	**6-30-2020**	1.4443	1.4443
3	**7-1-2020**	**9-30-2020**	2.6250	2.6250
4	**10-1-2020**	**12-31-2020**	1.9485	1.9485
5	**1-1-2021**	**3-31-2021**	1.8861	1.8861
6	**4-1-2021**	**6-30-2021**	3.9354	3.9354
7	**7-1-2021**	**9-30-2021**	9.3066	9.3066
8	**10-1-2021**	**12-31-2021**	9.6234	9.6234
9	**1-1-2022**	**3-31-2022**	8.7938	8.7938
10	**4-1-2022**	**6-30-2022**	8.6140	8.6140
11	**7-1-2022**	**9-30-2022**	8.7087	8.7087
12	**10-1-2022**	**12-31-2022**	8.9892	8.9892
13	**1-1-2023**	**3-31-2023**	7.5535	7.5535
14	**4-1-2023**	**6-30-2023**	7.3987	7.3987
15	**7-1-2023**	**9-30-2023**	7.4800	7.4800
16	**10-1-2023**	**12-31-2023**	7.7214	7.7214
17	**1-1-2024**	**3-31-2024**	7.3397	7.3397
18	**4-1-2024**	**6-30-2024**	7.1229	7.1229
19	**7-1-2024**	**9-30-2024**	7.2012	7.2012
20	**10-1-2024**	**12-31-2024**	7.4204	7.4204
21	**1-1-2025**	**3-31-2025**	6.9849	6.9849
22	**4-1-2025**	**6-30-2025**	6.8642	6.8642

23	**7-1-2025**	**9-30-2025**	6.9396	6.9396
24	**10-1-2025**	**12-31-2025**	7.1401	7.1401
25	**1-1-2026**	**3-31-2026**	6.8111	6.8111
26	**4-1-2026**	**6-30-2026**	6.7041	6.7041
27	**7-1-2026**	**9-30-2026**	6.7778	6.7778
28	**10-1-2026**	**12-31-2026**	6.9624	6.9624
29	**1-1-2027**	**3-31-2027**	6.6522	6.6522
30	**4-1-2027**	**6-30-2027**	6.5580	6.5580
31	**7-1-2027**	**9-30-2027**	6.6301	6.6301
32	**10-1-2027**	**12-31-2027**	6.8000	6.8000
33	**1-1-2028**	**3-31-2028**	6.5824	6.5824
34	**4-1-2028**	**6-30-2028**	6.4277	6.4277
35	**7-1-2028**	**9-30-2028**	6.4983	6.4983
36	**10-1-2028**	**12-31-2028**	6.6548	6.6548
37	**1-1-2029**	**3-31-2029**	6.3739	6.3739
38	**4-1-2029**	**6-30-2029**	6.3031	6.3031
39	**7-1-2029**	**9-30-2029**	6.3724	6.3724
40	**10-1-2029**	**12-31-2029**	6.5156	6.5156
41	**1-1-2030**	**3-31-2030**	6.0587	6.0587
42	**4-1-2030**	**6-30-2030**	5.9969	5.9969
43	**7-1-2030**	**9-30-2030**	6.0628	6.0628
44	**10-1-2030**	**12-31-2030**	6.1933	6.1933
45	**1-1-2031**	**3-31-2031**	5.9385	5.9385
46	**4-1-2031**	**6-30-2031**	5.8881	5.8881
47	**7-1-2031**	**9-30-2031**	5.9528	5.9528
48	**10-1-2031**	**12-31-2031**	6.0704	6.0704
49	**1-1-2032**	**3-31-2032**	5.8977	5.8977

50	**4-1-2032**	**6-30-2032**	5.7926	5.7926
51	**7-1-2032**	**9-30-2032**	5.8563	5.8563
52	**10-1-2032**	**12-31-2032**	5.9626	5.9626
53	**1-1-2033**	**3-31-2033**	5.7423	5.7423
54	**4-1-2033**	**6-30-2033**	5.7105	5.7105
55	**7-1-2033**	**9-30-2033**	5.7733	5.7733
56	**10-1-2033**	**12-31-2033**	5.8699	5.8699
57	**1-1-2034**	**3-31-2034**	5.6666	5.6666
58	**4-1-2034**	**6-30-2034**	5.6416	5.6416
59	**7-1-2034**	**9-30-2034**	5.7036	5.7036
60	**10-1-2034**	**12-31-2034**	5.7926	5.7926
61	**1-1-2035**	**3-31-2035**	5.4918	5.4918
62	**4-1-2035**	**6-30-2035**	5.4712	5.4712
63	**7-1-2035**	**9-30-2035**	5.5313	5.5313
64	**10-1-2035**	**12-31-2035**	5.6139	5.6139
65	**1-1-2036**	**3-31-2036**	5.5528	5.5528
66	**4-1-2036**	**6-30-2036**	5.4712	5.4712
67	**7-1-2036**	**9-30-2036**	5.5313	5.5313
68	**10-1-2036**	**12-31-2036**	5.6139	5.6139
69	**1-1-2037**	**3-31-2037**	5.4918	5.4918
70	**4-1-2037**	**6-30-2037**	5.4712	5.4712
71	**7-1-2037**	**9-30-2037**	5.5313	5.5313
72	**10-1-2037**	**12-31-2037**	5.6139	5.6139
73	**1-1-2038**	**3-31-2038**	5.4918	5.4918
74	**4-1-2038**	**6-30-2038**	5.4712	5.4712
75	**7-1-2038**	**9-30-2038**	5.5313	5.5313
76	**10-1-2038**	**12-31-2038**	5.6139	5.6139

77	**1-1-2039**	**3-31-2039**	5.4918	5.4918
78	**4-1-2039**	**6-30-2039**	5.4712	5.4712
79	**7-1-2039**	**9-30-2039**	5.5313	5.5313
80	**10-1-2039**	**12-31-2039**	5.6139	5.6139
81	**1-1-2040**	**3-31-2040**	4.8419	4.8419
82	**4-1-2040**	**6-30-2040**	4.5212	4.5212
83	**7-1-2040**	**9-30-2040**	4.5709	4.5709
		Highest	9.6234	9.6234

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	60.1199	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6720	1,245.6416	0.7786	0.0491	1,279.7350
Energy	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.8921	5,174.8921	0.0992	0.0949	5,205.6439
Mobile	6.0495	41.0435	68.7332	0.3841	41.9668	0.1419	42.1087	11.2575	0.1320	11.3895	0.0000	35,565.3862	35,565.3862	1.1932	0.0000	35,595.2159
Waste						0.0000	0.0000		0.0000	0.0000	904.1258	0.0000	904.1258	53.4323	0.0000	2,239.9334
Water						0.0000	0.0000		0.0000	0.0000	98.7060	0.0000	98.7060	10.1381	0.2394	423.4929
Total	**66.6923**	**47.0074**	**154.3504**	**0.4967**	**41.9668**	**6.7484**	**48.7151**	**11.2575**	**6.7385**	**17.9960**	**1,585.8013**	**41,402.9504**	**42,988.7517**	**65.6414**	**0.3833**	**44,744.0211**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	25.6101	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Energy	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.8921	5,174.8921	0.0992	0.0949	5,205.6439
Mobile	5.5747	39.2011	60.6329	0.3342	35.8816	0.1237	36.0053	9.6251	0.1151	9.7402	0.0000	30,955.7183	30,955.7183	1.0710	0.0000	30,982.4928
Waste						0.0000	0.0000		0.0000	0.0000	904.1258	0.0000	904.1258	53.4323	0.0000	2,239.9334
Water						0.0000	0.0000		0.0000	0.0000	78.9648	0.0000	78.9648	8.1104	0.1915	338.7943
Total	**31.7077**	**44.9411**	**104.0470**	**0.3698**	**35.8816**	**0.7750**	**36.6566**	**9.6251**	**0.7664**	**10.3915**	**983.0906**	**37,086.2882**	**38,069.3788**	**62.7941**	**0.3027**	**39,729.4258**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**52.46**	**4.40**	**32.59**	**25.54**	**14.50**	**88.52**	**24.75**	**14.50**	**88.63**	**42.26**	**38.01**	**10.43**	**11.44**	**4.34**	**21.04**	**11.21**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40

Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0644	0.0000	0.0644	9.7500e-003	0.0000	9.7500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3486	0.2284	4.1000e-004		0.0174	0.0174		0.0162	0.0162	0.0000	35.6985	35.6985	0.0101	0.0000	35.9505
Total	**0.0348**	**0.3486**	**0.2284**	**4.1000e-004**	**0.0644**	**0.0174**	**0.0818**	**9.7500e-003**	**0.0162**	**0.0259**	**0.0000**	**35.6985**	**35.6985**	**0.0101**	**0.0000**	**35.9505**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	6.4000e-004	5.7400e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1905	1.1905	5.0000e-005	0.0000	1.1917
Total	**3.1100e-003**	**0.0864**	**0.0232**	**2.4000e-004**	**6.0700e-003**	**3.4000e-004**	**6.4100e-003**	**1.6500e-003**	**3.3000e-004**	**1.9800e-003**	**0.0000**	**23.3666**	**23.3666**	**8.8000e-004**	**0.0000**	**23.3887**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0290	0.0000	0.0290	4.3900e-003	0.0000	4.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3486	0.2284	4.1000e-004		0.0174	0.0174		0.0162	0.0162	0.0000	35.6985	35.6985	0.0101	0.0000	35.9504
Total	**0.0348**	**0.3486**	**0.2284**	**4.1000e-004**	**0.0290**	**0.0174**	**0.0464**	**4.3900e-003**	**0.0162**	**0.0206**	**0.0000**	**35.6985**	**35.6985**	**0.0101**	**0.0000**	**35.9504**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4200e-003	0.0858	0.0175	2.3000e-004	4.8200e-003	3.3000e-004	5.1500e-003	1.3200e-003	3.2000e-004	1.6400e-003	0.0000	22.1761	22.1761	8.3000e-004	0.0000	22.1969
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	6.4000e-004	5.7400e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1905	1.1905	5.0000e-005	0.0000	1.1917
Total	**3.1100e-003**	**0.0864**	**0.0232**	**2.4000e-004**	**6.0700e-003**	**3.4000e-004**	**6.4100e-003**	**1.6500e-003**	**3.3000e-004**	**1.9800e-003**	**0.0000**	**23.3666**	**23.3666**	**8.8000e-004**	**0.0000**	**23.3887**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6052	0.0000	0.6052	0.3327	0.0000	0.3327	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2600	2.7939	1.7993	3.3800e-003		0.1284	0.1284		0.1187	0.1187	0.0000	296.4177	296.4177	0.0912	0.0000	298.6973
Total	**0.2600**	**2.7939**	**1.7993**	**3.3800e-003**	**0.6052**	**0.1284**	**0.7336**	**0.3327**	**0.1187**	**0.4513**	**0.0000**	**296.4177**	**296.4177**	**0.0912**	**0.0000**	**298.6973**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1300e-003	4.7700e-003	0.0427	1.0000e-004	0.0174	8.0000e-005	0.0175	4.4500e-003	8.0000e-005	4.5300e-003	0.0000	8.8622	8.8622	3.8000e-004	0.0000	8.8718
Total	**5.1300e-003**	**4.7700e-003**	**0.0427**	**1.0000e-004**	**0.0174**	**8.0000e-005**	**0.0175**	**4.4500e-003**	**8.0000e-005**	**4.5300e-003**	**0.0000**	**8.8622**	**8.8622**	**3.8000e-004**	**0.0000**	**8.8718**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2724	0.0000	0.2724	0.1497	0.0000	0.1497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2600	2.7939	1.7993	3.3800e-003		0.1284	0.1284		0.1187	0.1187	0.0000	296.4174	296.4174	0.0912	0.0000	298.6969
Total	**0.2600**	**2.7939**	**1.7993**	**3.3800e-003**	**0.2724**	**0.1284**	**0.4007**	**0.1497**	**0.1187**	**0.2684**	**0.0000**	**296.4174**	**296.4174**	**0.0912**	**0.0000**	**298.6969**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1300e-003	4.7700e-003	0.0427	1.0000e-004	0.0174	8.0000e-005	0.0175	4.4500e-003	8.0000e-005	4.5300e-003	0.0000	8.8622	8.8622	3.8000e-004	0.0000	8.8718
Total	**5.1300e-003**	**4.7700e-003**	**0.0427**	**1.0000e-004**	**0.0174**	**8.0000e-005**	**0.0175**	**4.4500e-003**	**8.0000e-005**	**4.5300e-003**	**0.0000**	**8.8622**	**8.8622**	**3.8000e-004**	**0.0000**	**8.8718**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5989	0.0000	0.5989	0.1511	0.0000	0.1511	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0740	177.0740	0.0573	0.0000	178.5057
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.5989**	**0.0707**	**0.6696**	**0.1511**	**0.0650**	**0.2161**	**0.0000**	**177.0740**	**177.0740**	**0.0573**	**0.0000**	**178.5057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.6400e-003	0.0237	5.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	4.9130	4.9130	2.1000e-004	0.0000	4.9182
Total	**2.8400e-003**	**2.6400e-003**	**0.0237**	**5.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9130**	**4.9130**	**2.1000e-004**	**0.0000**	**4.9182**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2695	0.0000	0.2695	0.0680	0.0000	0.0680	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0737	177.0737	0.0573	0.0000	178.5055
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.2695**	**0.0707**	**0.3402**	**0.0680**	**0.0650**	**0.1330**	**0.0000**	**177.0737**	**177.0737**	**0.0573**	**0.0000**	**178.5055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	2.6400e-003	0.0237	5.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	4.9130	4.9130	2.1000e-004	0.0000	4.9182
Total	**2.8400e-003**	**2.6400e-003**	**0.0237**	**5.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9130**	**4.9130**	**2.1000e-004**	**0.0000**	**4.9182**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0682	0.6776	0.4220	7.1000e-004		0.0365	0.0365		0.0338	0.0338	0.0000	62.2509	62.2509	0.0181	0.0000	62.7036
Total	**0.0682**	**0.6776**	**0.4220**	**7.1000e-004**		**0.0365**	**0.0365**		**0.0338**	**0.0338**	**0.0000**	**62.2509**	**62.2509**	**0.0181**	**0.0000**	**62.7036**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8500e-003	3.5800e-003	0.0321	7.0000e-005	0.0191	6.0000e-005	0.0192	4.8300e-003	6.0000e-005	4.8900e-003	0.0000	6.6514	6.6514	2.9000e-004	0.0000	6.6586
Total	**3.8500e-003**	**3.5800e-003**	**0.0321**	**7.0000e-005**	**0.0191**	**6.0000e-005**	**0.0192**	**4.8300e-003**	**6.0000e-005**	**4.8900e-003**	**0.0000**	**6.6514**	**6.6514**	**2.9000e-004**	**0.0000**	**6.6586**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0682	0.6776	0.4220	7.1000e-004		0.0365	0.0365		0.0338	0.0338	0.0000	62.2508	62.2508	0.0181	0.0000	62.7035
Total	**0.0682**	**0.6776**	**0.4220**	**7.1000e-004**		**0.0365**	**0.0365**		**0.0338**	**0.0338**	**0.0000**	**62.2508**	**62.2508**	**0.0181**	**0.0000**	**62.7035**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8500e-003	3.5800e-003	0.0321	7.0000e-005	0.0191	6.0000e-005	0.0192	4.8300e-003	6.0000e-005	4.8900e-003	0.0000	6.6514	6.6514	2.9000e-004	0.0000	6.6586
Total	**3.8500e-003**	**3.5800e-003**	**0.0321**	**7.0000e-005**	**0.0191**	**6.0000e-005**	**0.0192**	**4.8300e-003**	**6.0000e-005**	**4.8900e-003**	**0.0000**	**6.6514**	**6.6514**	**2.9000e-004**	**0.0000**	**6.6586**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0666	0.6662	0.4339	7.5000e-004		0.0345	0.0345		0.0320	0.0320	0.0000	65.0894	65.0894	0.0189	0.0000	65.5609
Total	**0.0666**	**0.6662**	**0.4339**	**7.5000e-004**		**0.0345**	**0.0345**		**0.0320**	**0.0320**	**0.0000**	**65.0894**	**65.0894**	**0.0189**	**0.0000**	**65.5609**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	3.3400e-003	0.0305	7.0000e-005	0.0200	6.0000e-005	0.0200	5.0500e-003	6.0000e-005	5.1100e-003	0.0000	6.7207	6.7207	2.7000e-004	0.0000	6.7274
Total	**3.7100e-003**	**3.3400e-003**	**0.0305**	**7.0000e-005**	**0.0200**	**6.0000e-005**	**0.0200**	**5.0500e-003**	**6.0000e-005**	**5.1100e-003**	**0.0000**	**6.7207**	**6.7207**	**2.7000e-004**	**0.0000**	**6.7274**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0666	0.6662	0.4339	7.5000e-004		0.0345	0.0345		0.0320	0.0320	0.0000	65.0893	65.0893	0.0189	0.0000	65.5609
Total	**0.0666**	**0.6662**	**0.4339**	**7.5000e-004**		**0.0345**	**0.0345**		**0.0320**	**0.0320**	**0.0000**	**65.0893**	**65.0893**	**0.0189**	**0.0000**	**65.5609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	3.3400e-003	0.0305	7.0000e-005	0.0200	6.0000e-005	0.0200	5.0500e-003	6.0000e-005	5.1100e-003	0.0000	6.7207	6.7207	2.7000e-004	0.0000	6.7274
Total	**3.7100e-003**	**3.3400e-003**	**0.0305**	**7.0000e-005**	**0.0200**	**6.0000e-005**	**0.0200**	**5.0500e-003**	**6.0000e-005**	**5.1100e-003**	**0.0000**	**6.7207**	**6.7207**	**2.7000e-004**	**0.0000**	**6.7274**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1769	1.7335	1.9765	3.0900e-003		0.0926	0.0926		0.0861	0.0861	0.0000	270.9208	270.9208	0.0798	0.0000	272.9162
Total	**1.9294**	**1.7335**	**1.9765**	**3.0900e-003**		**0.0926**	**0.0926**		**0.0861**	**0.0861**	**0.0000**	**270.9208**	**270.9208**	**0.0798**	**0.0000**	**272.9162**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5259	0.4729	4.3135	0.0106	1.9309	8.9400e-003	1.9398	0.4951	8.2400e-003	0.5034	0.0000	952.0043	952.0043	0.0378	0.0000	952.9486
Total	**0.5259**	**0.4729**	**4.3135**	**0.0106**	**1.9309**	**8.9400e-003**	**1.9398**	**0.4951**	**8.2400e-003**	**0.5034**	**0.0000**	**952.0043**	**952.0043**	**0.0378**	**0.0000**	**952.9486**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1769	1.7335	1.9765	3.0900e-003		0.0926	0.0926		0.0861	0.0861	0.0000	270.9205	270.9205	0.0798	0.0000	272.9159
Total	**1.9294**	**1.7335**	**1.9765**	**3.0900e-003**		**0.0926**	**0.0926**		**0.0861**	**0.0861**	**0.0000**	**270.9205**	**270.9205**	**0.0798**	**0.0000**	**272.9159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5259	0.4729	4.3135	0.0106	1.9309	8.9400e-003	1.9398	0.4951	8.2400e-003	0.5034	0.0000	952.0043	952.0043	0.0378	0.0000	952.9486
Total	**0.5259**	**0.4729**	**4.3135**	**0.0106**	**1.9309**	**8.9400e-003**	**1.9398**	**0.4951**	**8.2400e-003**	**0.5034**	**0.0000**	**952.0043**	**952.0043**	**0.0378**	**0.0000**	**952.9486**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1700	1.6293	2.1312	3.3500e-003		0.0845	0.0845		0.0785	0.0785	0.0000	293.5505	293.5505	0.0864	0.0000	295.7097
Total	**2.0684**	**1.6293**	**2.1312**	**3.3500e-003**		**0.0845**	**0.0845**		**0.0785**	**0.0785**	**0.0000**	**293.5505**	**293.5505**	**0.0864**	**0.0000**	**295.7097**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5281	0.4591	4.2605	0.0110	2.0918	9.3400e-003	2.1011	0.5364	8.6100e-003	0.5450	0.0000	995.0453	995.0453	0.0366	0.0000	995.9595
Total	**0.5281**	**0.4591**	**4.2605**	**0.0110**	**2.0918**	**9.3400e-003**	**2.1011**	**0.5364**	**8.6100e-003**	**0.5450**	**0.0000**	**995.0453**	**995.0453**	**0.0366**	**0.0000**	**995.9595**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1700	1.6293	2.1312	3.3500e-003		0.0845	0.0845		0.0785	0.0785	0.0000	293.5502	293.5502	0.0864	0.0000	295.7094
Total	**2.0684**	**1.6293**	**2.1312**	**3.3500e-003**		**0.0845**	**0.0845**		**0.0785**	**0.0785**	**0.0000**	**293.5502**	**293.5502**	**0.0864**	**0.0000**	**295.7094**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5281	0.4591	4.2605	0.0110	2.0918	9.3400e-003	2.1011	0.5364	8.6100e-003	0.5450	0.0000	995.0453	995.0453	0.0366	0.0000	995.9595
Total	**0.5281**	**0.4591**	**4.2605**	**0.0110**	**2.0918**	**9.3400e-003**	**2.1011**	**0.5364**	**8.6100e-003**	**0.5450**	**0.0000**	**995.0453**	**995.0453**	**0.0366**	**0.0000**	**995.9595**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1592	1.4943	2.1314	3.3500e-003		0.0755	0.0755		0.0702	0.0702	0.0000	293.5416	293.5416	0.0862	0.0000	295.6963
Total	**2.0576**	**1.4943**	**2.1314**	**3.3500e-003**		**0.0755**	**0.0755**		**0.0702**	**0.0702**	**0.0000**	**293.5416**	**293.5416**	**0.0862**	**0.0000**	**295.6963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4902	0.4115	3.8768	0.0106	2.0918	9.0400e-003	2.1008	0.5364	8.3300e-003	0.5447	0.0000	958.1812	958.1812	0.0326	0.0000	958.9962
Total	**0.4902**	**0.4115**	**3.8768**	**0.0106**	**2.0918**	**9.0400e-003**	**2.1008**	**0.5364**	**8.3300e-003**	**0.5447**	**0.0000**	**958.1812**	**958.1812**	**0.0326**	**0.0000**	**958.9962**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1592	1.4943	2.1314	3.3500e-003		0.0755	0.0755		0.0702	0.0702	0.0000	293.5412	293.5412	0.0862	0.0000	295.6959
Total	**2.0576**	**1.4943**	**2.1314**	**3.3500e-003**		**0.0755**	**0.0755**		**0.0702**	**0.0702**	**0.0000**	**293.5412**	**293.5412**	**0.0862**	**0.0000**	**295.6959**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4902	0.4115	3.8768	0.0106	2.0918	9.0400e-003	2.1008	0.5364	8.3300e-003	0.5447	0.0000	958.1812	958.1812	0.0326	0.0000	958.9962
Total	**0.4902**	**0.4115**	**3.8768**	**0.0106**	**2.0918**	**9.0400e-003**	**2.1008**	**0.5364**	**8.3300e-003**	**0.5447**	**0.0000**	**958.1812**	**958.1812**	**0.0326**	**0.0000**	**958.9962**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1531	1.4074	2.1531	3.3800e-003		0.0694	0.0694		0.0645	0.0645	0.0000	295.7952	295.7952	0.0867	0.0000	297.9635
Total	**2.0662**	**1.4074**	**2.1531**	**3.3800e-003**		**0.0694**	**0.0694**		**0.0645**	**0.0645**	**0.0000**	**295.7952**	**295.7952**	**0.0867**	**0.0000**	**297.9635**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4604	0.3729	3.5817	0.0103	2.1079	8.8300e-003	2.1167	0.5405	8.1300e-003	0.5487	0.0000	928.4017	928.4017	0.0294	0.0000	929.1367
Total	**0.4604**	**0.3729**	**3.5817**	**0.0103**	**2.1079**	**8.8300e-003**	**2.1167**	**0.5405**	**8.1300e-003**	**0.5487**	**0.0000**	**928.4017**	**928.4017**	**0.0294**	**0.0000**	**929.1367**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1531	1.4074	2.1531	3.3800e-003		0.0694	0.0694		0.0645	0.0645	0.0000	295.7948	295.7948	0.0867	0.0000	297.9631
Total	**2.0662**	**1.4074**	**2.1531**	**3.3800e-003**		**0.0694**	**0.0694**		**0.0645**	**0.0645**	**0.0000**	**295.7948**	**295.7948**	**0.0867**	**0.0000**	**297.9631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4604	0.3729	3.5817	0.0103	2.1079	8.8300e-003	2.1167	0.5405	8.1300e-003	0.5487	0.0000	928.4017	928.4017	0.0294	0.0000	929.1367
Total	**0.4604**	**0.3729**	**3.5817**	**0.0103**	**2.1079**	**8.8300e-003**	**2.1167**	**0.5405**	**8.1300e-003**	**0.5487**	**0.0000**	**928.4017**	**928.4017**	**0.0294**	**0.0000**	**929.1367**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4303	0.3361	3.2847	9.8300e-003	2.0998	8.6100e-003	2.1084	0.5385	7.9300e-003	0.5464	0.0000	888.2280	888.2280	0.0264	0.0000	888.8891
Total	**0.4303**	**0.3361**	**3.2847**	**9.8300e-003**	**2.0998**	**8.6100e-003**	**2.1084**	**0.5385**	**7.9300e-003**	**0.5464**	**0.0000**	**888.2280**	**888.2280**	**0.0264**	**0.0000**	**888.8891**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4303	0.3361	3.2847	9.8300e-003	2.0998	8.6100e-003	2.1084	0.5385	7.9300e-003	0.5464	0.0000	888.2280	888.2280	0.0264	0.0000	888.8891
Total	**0.4303**	**0.3361**	**3.2847**	**9.8300e-003**	**2.0998**	**8.6100e-003**	**2.1084**	**0.5385**	**7.9300e-003**	**0.5464**	**0.0000**	**888.2280**	**888.2280**	**0.0264**	**0.0000**	**888.8891**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4049	0.3050	3.0188	9.4200e-003	2.0998	8.2500e-003	2.1081	0.5385	7.6000e-003	0.5461	0.0000	851.5289	851.5289	0.0237	0.0000	852.1219
Total	**0.4049**	**0.3050**	**3.0188**	**9.4200e-003**	**2.0998**	**8.2500e-003**	**2.1081**	**0.5385**	**7.6000e-003**	**0.5461**	**0.0000**	**851.5289**	**851.5289**	**0.0237**	**0.0000**	**852.1219**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4049	0.3050	3.0188	9.4200e-003	2.0998	8.2500e-003	2.1081	0.5385	7.6000e-003	0.5461	0.0000	851.5289	851.5289	0.0237	0.0000	852.1219
Total	**0.4049**	**0.3050**	**3.0188**	**9.4200e-003**	**2.0998**	**8.2500e-003**	**2.1081**	**0.5385**	**7.6000e-003**	**0.5461**	**0.0000**	**851.5289**	**851.5289**	**0.0237**	**0.0000**	**852.1219**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3811	0.2772	2.7935	9.0900e-003	2.0998	7.7700e-003	2.1076	0.5385	7.1500e-003	0.5456	0.0000	822.2877	822.2877	0.0215	0.0000	822.8242
Total	**0.3811**	**0.2772**	**2.7935**	**9.0900e-003**	**2.0998**	**7.7700e-003**	**2.1076**	**0.5385**	**7.1500e-003**	**0.5456**	**0.0000**	**822.2877**	**822.2877**	**0.0215**	**0.0000**	**822.8242**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3811	0.2772	2.7935	9.0900e-003	2.0998	7.7700e-003	2.1076	0.5385	7.1500e-003	0.5456	0.0000	822.2877	822.2877	0.0215	0.0000	822.8242
Total	**0.3811**	**0.2772**	**2.7935**	**9.0900e-003**	**2.0998**	**7.7700e-003**	**2.1076**	**0.5385**	**7.1500e-003**	**0.5456**	**0.0000**	**822.2877**	**822.2877**	**0.0215**	**0.0000**	**822.8242**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1412	1.2645	2.1303	3.3500e-003		0.0611	0.0611		0.0568	0.0568	0.0000	293.4426	293.4426	0.0860	0.0000	295.5921
Total	**2.0397**	**1.2645**	**2.1303**	**3.3500e-003**		**0.0611**	**0.0611**		**0.0568**	**0.0568**	**0.0000**	**293.4426**	**293.4426**	**0.0860**	**0.0000**	**295.5921**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3557	0.2515	2.5857	8.7700e-003	2.0918	7.2100e-003	2.0990	0.5364	6.6300e-003	0.5430	0.0000	793.2863	793.2863	0.0194	0.0000	793.7724
Total	**0.3557**	**0.2515**	**2.5857**	**8.7700e-003**	**2.0918**	**7.2100e-003**	**2.0990**	**0.5364**	**6.6300e-003**	**0.5430**	**0.0000**	**793.2863**	**793.2863**	**0.0194**	**0.0000**	**793.7724**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1412	1.2645	2.1303	3.3500e-003		0.0611	0.0611		0.0568	0.0568	0.0000	293.4423	293.4423	0.0860	0.0000	295.5918
Total	**2.0397**	**1.2645**	**2.1303**	**3.3500e-003**		**0.0611**	**0.0611**		**0.0568**	**0.0568**	**0.0000**	**293.4423**	**293.4423**	**0.0860**	**0.0000**	**295.5918**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3557	0.2515	2.5857	8.7700e-003	2.0918	7.2100e-003	2.0990	0.5364	6.6300e-003	0.5430	0.0000	793.2863	793.2863	0.0194	0.0000	793.7724
Total	**0.3557**	**0.2515**	**2.5857**	**8.7700e-003**	**2.0918**	**7.2100e-003**	**2.0990**	**0.5364**	**6.6300e-003**	**0.5430**	**0.0000**	**793.2863**	**793.2863**	**0.0194**	**0.0000**	**793.7724**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5712	294.5712	0.0863	0.0000	296.7290
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5712**	**294.5712**	**0.0863**	**0.0000**	**296.7290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3315	0.2293	2.4044	8.5500e-003	2.0998	6.7300e-003	2.1065	0.5385	6.1900e-003	0.5446	0.0000	773.2868	773.2868	0.0176	0.0000	773.7275
Total	**0.3315**	**0.2293**	**2.4044**	**8.5500e-003**	**2.0998**	**6.7300e-003**	**2.1065**	**0.5385**	**6.1900e-003**	**0.5446**	**0.0000**	**773.2868**	**773.2868**	**0.0176**	**0.0000**	**773.7275**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1417	1.2694	2.1385	3.3600e-003		0.0613	0.0613		0.0570	0.0570	0.0000	294.5709	294.5709	0.0863	0.0000	296.7287
Total	**2.0475**	**1.2694**	**2.1385**	**3.3600e-003**		**0.0613**	**0.0613**		**0.0570**	**0.0570**	**0.0000**	**294.5709**	**294.5709**	**0.0863**	**0.0000**	**296.7287**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3315	0.2293	2.4044	8.5500e-003	2.0998	6.7300e-003	2.1065	0.5385	6.1900e-003	0.5446	0.0000	773.2868	773.2868	0.0176	0.0000	773.7275
Total	**0.3315**	**0.2293**	**2.4044**	**8.5500e-003**	**2.0998**	**6.7300e-003**	**2.1065**	**0.5385**	**6.1900e-003**	**0.5446**	**0.0000**	**773.2868**	**773.2868**	**0.0176**	**0.0000**	**773.7275**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8186	347.8186	0.0161	0.0000	348.2209
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8186**	**347.8186**	**0.0161**	**0.0000**	**348.2209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3062	0.2077	2.2313	8.3200e-003	2.0998	6.2600e-003	2.1061	0.5385	5.7600e-003	0.5442	0.0000	752.8711	752.8711	0.0159	0.0000	753.2689
Total	**0.3062**	**0.2077**	**2.2313**	**8.3200e-003**	**2.0998**	**6.2600e-003**	**2.1061**	**0.5385**	**5.7600e-003**	**0.5442**	**0.0000**	**752.8711**	**752.8711**	**0.0159**	**0.0000**	**753.2689**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8182	347.8182	0.0161	0.0000	348.2205
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8182**	**347.8182**	**0.0161**	**0.0000**	**348.2205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3062	0.2077	2.2313	8.3200e-003	2.0998	6.2600e-003	2.1061	0.5385	5.7600e-003	0.5442	0.0000	752.8711	752.8711	0.0159	0.0000	753.2689
Total	**0.3062**	**0.2077**	**2.2313**	**8.3200e-003**	**2.0998**	**6.2600e-003**	**2.1061**	**0.5385**	**5.7600e-003**	**0.5442**	**0.0000**	**752.8711**	**752.8711**	**0.0159**	**0.0000**	**753.2689**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8186	347.8186	0.0161	0.0000	348.2209
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8186**	**347.8186**	**0.0161**	**0.0000**	**348.2209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2792	0.1866	2.0628	8.1200e-003	2.0998	5.8300e-003	2.1056	0.5385	5.3600e-003	0.5438	0.0000	734.8279	734.8279	0.0143	0.0000	735.1844
Total	**0.2792**	**0.1866**	**2.0628**	**8.1200e-003**	**2.0998**	**5.8300e-003**	**2.1056**	**0.5385**	**5.3600e-003**	**0.5438**	**0.0000**	**734.8279**	**734.8279**	**0.0143**	**0.0000**	**735.1844**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1977	1.0409	2.3030	4.0500e-003		0.0458	0.0458		0.0458	0.0458	0.0000	347.8182	347.8182	0.0161	0.0000	348.2205
Total	**2.1035**	**1.0409**	**2.3030**	**4.0500e-003**		**0.0458**	**0.0458**		**0.0458**	**0.0458**	**0.0000**	**347.8182**	**347.8182**	**0.0161**	**0.0000**	**348.2205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2792	0.1866	2.0628	8.1200e-003	2.0998	5.8300e-003	2.1056	0.5385	5.3600e-003	0.5438	0.0000	734.8279	734.8279	0.0143	0.0000	735.1844
Total	**0.2792**	**0.1866**	**2.0628**	**8.1200e-003**	**2.0998**	**5.8300e-003**	**2.1056**	**0.5385**	**5.3600e-003**	**0.5438**	**0.0000**	**734.8279**	**734.8279**	**0.0143**	**0.0000**	**735.1844**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1985	1.0449	2.3118	4.0600e-003		0.0460	0.0460		0.0460	0.0460	0.0000	349.1513	349.1513	0.0162	0.0000	349.5551
Total	**2.1116**	**1.0449**	**2.3118**	**4.0600e-003**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**0.0000**	**349.1513**	**349.1513**	**0.0162**	**0.0000**	**349.5551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2561	0.1692	1.9235	7.9700e-003	2.1079	5.4500e-003	2.1133	0.5405	5.0100e-003	0.5455	0.0000	721.7480	721.7480	0.0129	0.0000	722.0698
Total	**0.2561**	**0.1692**	**1.9235**	**7.9700e-003**	**2.1079**	**5.4500e-003**	**2.1133**	**0.5405**	**5.0100e-003**	**0.5455**	**0.0000**	**721.7480**	**721.7480**	**0.0129**	**0.0000**	**722.0698**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1985	1.0449	2.3118	4.0600e-003		0.0460	0.0460		0.0460	0.0460	0.0000	349.1509	349.1509	0.0162	0.0000	349.5547
Total	**2.1116**	**1.0449**	**2.3118**	**4.0600e-003**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**0.0000**	**349.1509**	**349.1509**	**0.0162**	**0.0000**	**349.5547**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2561	0.1692	1.9235	7.9700e-003	2.1079	5.4500e-003	2.1133	0.5405	5.0100e-003	0.5455	0.0000	721.7480	721.7480	0.0129	0.0000	722.0698
Total	**0.2561**	**0.1692**	**1.9235**	**7.9700e-003**	**2.1079**	**5.4500e-003**	**2.1133**	**0.5405**	**5.0100e-003**	**0.5455**	**0.0000**	**721.7480**	**721.7480**	**0.0129**	**0.0000**	**722.0698**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4860	346.4860	0.0160	0.0000	346.8868
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4860**	**346.4860**	**0.0160**	**0.0000**	**346.8868**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2337	0.1527	1.7847	7.7600e-003	2.0918	5.0500e-003	2.0968	0.5364	4.6400e-003	0.5410	0.0000	702.4748	702.4748	0.0116	0.0000	702.7637
Total	**0.2337**	**0.1527**	**1.7847**	**7.7600e-003**	**2.0918**	**5.0500e-003**	**2.0968**	**0.5364**	**4.6400e-003**	**0.5410**	**0.0000**	**702.4748**	**702.4748**	**0.0116**	**0.0000**	**702.7637**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4856	346.4856	0.0160	0.0000	346.8863
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4856**	**346.4856**	**0.0160**	**0.0000**	**346.8863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2337	0.1527	1.7847	7.7600e-003	2.0918	5.0500e-003	2.0968	0.5364	4.6400e-003	0.5410	0.0000	702.4748	702.4748	0.0116	0.0000	702.7637
Total	**0.2337**	**0.1527**	**1.7847**	**7.7600e-003**	**2.0918**	**5.0500e-003**	**2.0968**	**0.5364**	**4.6400e-003**	**0.5410**	**0.0000**	**702.4748**	**702.4748**	**0.0116**	**0.0000**	**702.7637**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4860	346.4860	0.0160	0.0000	346.8868
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4860**	**346.4860**	**0.0160**	**0.0000**	**346.8868**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2168	0.1403	1.6712	7.6200e-003	2.0918	4.7200e-003	2.0965	0.5364	4.3400e-003	0.5407	0.0000	690.4668	690.4668	0.0104	0.0000	690.7279
Total	**0.2168**	**0.1403**	**1.6712**	**7.6200e-003**	**2.0918**	**4.7200e-003**	**2.0965**	**0.5364**	**4.3400e-003**	**0.5407**	**0.0000**	**690.4668**	**690.4668**	**0.0104**	**0.0000**	**690.7279**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1970	1.0369	2.2941	4.0300e-003		0.0456	0.0456		0.0456	0.0456	0.0000	346.4856	346.4856	0.0160	0.0000	346.8863
Total	**2.0955**	**1.0369**	**2.2941**	**4.0300e-003**		**0.0456**	**0.0456**		**0.0456**	**0.0456**	**0.0000**	**346.4856**	**346.4856**	**0.0160**	**0.0000**	**346.8863**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2168	0.1403	1.6712	7.6200e-003	2.0918	4.7200e-003	2.0965	0.5364	4.3400e-003	0.5407	0.0000	690.4668	690.4668	0.0104	0.0000	690.7279
Total	**0.2168**	**0.1403**	**1.6712**	**7.6200e-003**	**2.0918**	**4.7200e-003**	**2.0965**	**0.5364**	**4.3400e-003**	**0.5407**	**0.0000**	**690.4668**	**690.4668**	**0.0104**	**0.0000**	**690.7279**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1649	0.7380	2.3075	4.0600e-003		0.0259	0.0259		0.0259	0.0259	0.0000	349.1513	349.1513	0.0134	0.0000	349.4859
Total	**2.0779**	**0.7380**	**2.3075**	**4.0600e-003**		**0.0259**	**0.0259**		**0.0259**	**0.0259**	**0.0000**	**349.1513**	**349.1513**	**0.0134**	**0.0000**	**349.4859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2035	0.1315	1.5844	7.5600e-003	2.1079	4.4600e-003	2.1123	0.5405	4.1000e-003	0.5446	0.0000	685.3424	685.3424	9.5500e-003	0.0000	685.5810
Total	**0.2035**	**0.1315**	**1.5844**	**7.5600e-003**	**2.1079**	**4.4600e-003**	**2.1123**	**0.5405**	**4.1000e-003**	**0.5446**	**0.0000**	**685.3424**	**685.3424**	**9.5500e-003**	**0.0000**	**685.5810**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1649	0.7380	2.3075	4.0600e-003		0.0259	0.0259		0.0259	0.0259	0.0000	349.1509	349.1509	0.0134	0.0000	349.4855
Total	**2.0779**	**0.7380**	**2.3075**	**4.0600e-003**		**0.0259**	**0.0259**		**0.0259**	**0.0259**	**0.0000**	**349.1509**	**349.1509**	**0.0134**	**0.0000**	**349.4855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2035	0.1315	1.5844	7.5600e-003	2.1079	4.4600e-003	2.1123	0.5405	4.1000e-003	0.5446	0.0000	685.3424	685.3424	9.5500e-003	0.0000	685.5810
Total	**0.2035**	**0.1315**	**1.5844**	**7.5600e-003**	**2.1079**	**4.4600e-003**	**2.1123**	**0.5405**	**4.1000e-003**	**0.5446**	**0.0000**	**685.3424**	**685.3424**	**9.5500e-003**	**0.0000**	**685.5810**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8186	347.8186	0.0133	0.0000	348.1520
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8186**	**347.8186**	**0.0133**	**0.0000**	**348.1520**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9058					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	0.7352	2.2987	4.0500e-003		0.0258	0.0258		0.0258	0.0258	0.0000	347.8182	347.8182	0.0133	0.0000	348.1516
Total	**2.0700**	**0.7352**	**2.2987**	**4.0500e-003**		**0.0258**	**0.0258**		**0.0258**	**0.0258**	**0.0000**	**347.8182**	**347.8182**	**0.0133**	**0.0000**	**348.1516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2027	0.1310	1.5784	7.5400e-003	2.0998	4.4400e-003	2.1043	0.5385	4.0800e-003	0.5425	0.0000	682.7266	682.7266	9.5100e-003	0.0000	682.9643
Total	**0.2027**	**0.1310**	**1.5784**	**7.5400e-003**	**2.0998**	**4.4400e-003**	**2.1043**	**0.5385**	**4.0800e-003**	**0.5425**	**0.0000**	**682.7266**	**682.7266**	**9.5100e-003**	**0.0000**	**682.9643**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1636	0.7324	2.2899	4.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	346.4860	346.4860	0.0133	0.0000	346.8181
Total	**2.0621**	**0.7324**	**2.2899**	**4.0300e-003**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**346.4860**	**346.4860**	**0.0133**	**0.0000**	**346.8181**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2019	0.1305	1.5723	7.5100e-003	2.0918	4.4200e-003	2.0962	0.5364	4.0700e-003	0.5405	0.0000	680.1108	680.1108	9.4700e-003	0.0000	680.3476
Total	**0.2019**	**0.1305**	**1.5723**	**7.5100e-003**	**2.0918**	**4.4200e-003**	**2.0962**	**0.5364**	**4.0700e-003**	**0.5405**	**0.0000**	**680.1108**	**680.1108**	**9.4700e-003**	**0.0000**	**680.3476**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1636	0.7324	2.2899	4.0300e-003		0.0257	0.0257		0.0257	0.0257	0.0000	346.4856	346.4856	0.0133	0.0000	346.8177
Total	**2.0621**	**0.7324**	**2.2899**	**4.0300e-003**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**346.4856**	**346.4856**	**0.0133**	**0.0000**	**346.8177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2019	0.1305	1.5723	7.5100e-003	2.0918	4.4200e-003	2.0962	0.5364	4.0700e-003	0.5405	0.0000	680.1108	680.1108	9.4700e-003	0.0000	680.3476
Total	**0.2019**	**0.1305**	**1.5723**	**7.5100e-003**	**2.0918**	**4.4200e-003**	**2.0962**	**0.5364**	**4.0700e-003**	**0.5405**	**0.0000**	**680.1108**	**680.1108**	**9.4700e-003**	**0.0000**	**680.3476**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.0548	0.2201	3.9000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	33.3160	33.3160	1.1200e-003	0.0000	33.3441
Total	**0.1966**	**0.0548**	**0.2201**	**3.9000e-004**		**1.5500e-003**	**1.5500e-003**		**1.5500e-003**	**1.5500e-003**	**0.0000**	**33.3160**	**33.3160**	**1.1200e-003**	**0.0000**	**33.3441**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0145	9.6000e-003	0.1231	6.9000e-004	0.2011	3.3000e-004	0.2015	0.0516	3.0000e-004	0.0519	0.0000	62.2621	62.2621	6.4000e-004	0.0000	62.2781
Total	**0.0145**	**9.6000e-003**	**0.1231**	**6.9000e-004**	**0.2011**	**3.3000e-004**	**0.2015**	**0.0516**	**3.0000e-004**	**0.0519**	**0.0000**	**62.2621**	**62.2621**	**6.4000e-004**	**0.0000**	**62.2781**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.0548	0.2201	3.9000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	33.3159	33.3159	1.1200e-003	0.0000	33.3440
Total	**0.1966**	**0.0548**	**0.2201**	**3.9000e-004**		**1.5500e-003**	**1.5500e-003**		**1.5500e-003**	**1.5500e-003**	**0.0000**	**33.3159**	**33.3159**	**1.1200e-003**	**0.0000**	**33.3440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0145	9.6000e-003	0.1231	6.9000e-004	0.2011	3.3000e-004	0.2015	0.0516	3.0000e-004	0.0519	0.0000	62.2621	62.2621	6.4000e-004	0.0000	62.2781
Total	**0.0145**	**9.6000e-003**	**0.1231**	**6.9000e-004**	**0.2011**	**3.3000e-004**	**0.2015**	**0.0516**	**3.0000e-004**	**0.0519**	**0.0000**	**62.2621**	**62.2621**	**6.4000e-004**	**0.0000**	**62.2781**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0546	0.5620	0.6374	9.9000e-004		0.0295	0.0295		0.0271	0.0271	0.0000	87.1021	87.1021	0.0282	0.0000	87.8064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0546**	**0.5620**	**0.6374**	**9.9000e-004**		**0.0295**	**0.0295**		**0.0271**	**0.0271**	**0.0000**	**87.1021**	**87.1021**	**0.0282**	**0.0000**	**87.8064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6300e-003	2.3700e-003	0.0216	5.0000e-005	5.1800e-003	4.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.7666	4.7666	1.9000e-004	0.0000	4.7713
Total	**2.6300e-003**	**2.3700e-003**	**0.0216**	**5.0000e-005**	**5.1800e-003**	**4.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.7666**	**4.7666**	**1.9000e-004**	**0.0000**	**4.7713**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0546	0.5620	0.6374	9.9000e-004		0.0295	0.0295		0.0271	0.0271	0.0000	87.1020	87.1020	0.0282	0.0000	87.8063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0546**	**0.5620**	**0.6374**	**9.9000e-004**		**0.0295**	**0.0295**		**0.0271**	**0.0271**	**0.0000**	**87.1020**	**87.1020**	**0.0282**	**0.0000**	**87.8063**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6300e-003	2.3700e-003	0.0216	5.0000e-005	5.1800e-003	4.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.7666	4.7666	1.9000e-004	0.0000	4.7713
Total	**2.6300e-003**	**2.3700e-003**	**0.0216**	**5.0000e-005**	**5.1800e-003**	**4.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.7666**	**4.7666**	**1.9000e-004**	**0.0000**	**4.7713**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1435	1.3161	1.2514	2.0300e-003		0.0724	0.0724		0.0681	0.0681	0.0000	174.8861	174.8861	0.0422	0.0000	175.9410
Total	**0.1435**	**1.3161**	**1.2514**	**2.0300e-003**		**0.0724**	**0.0724**		**0.0681**	**0.0681**	**0.0000**	**174.8861**	**174.8861**	**0.0422**	**0.0000**	**175.9410**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4479	13.7813	3.6230	0.0342	0.7987	0.0423	0.8410	0.2308	0.0405	0.2713	0.0000	3,262.3529	3,262.3529	0.1454	0.0000	3,265.9890
Worker	1.6536	1.4872	13.5646	0.0332	3.2563	0.0281	3.2844	0.8659	0.0259	0.8918	0.0000	2,993.7439	2,993.7439	0.1188	0.0000	2,996.7133
Total	**2.1015**	**15.2685**	**17.1876**	**0.0673**	**4.0550**	**0.0704**	**4.1254**	**1.0967**	**0.0664**	**1.1631**	**0.0000**	**6,256.0968**	**6,256.0968**	**0.2642**	**0.0000**	**6,262.7023**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1435	1.3161	1.2514	2.0300e-003		0.0724	0.0724		0.0681	0.0681	0.0000	174.8859	174.8859	0.0422	0.0000	175.9407
Total	**0.1435**	**1.3161**	**1.2514**	**2.0300e-003**		**0.0724**	**0.0724**		**0.0681**	**0.0681**	**0.0000**	**174.8859**	**174.8859**	**0.0422**	**0.0000**	**175.9407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4479	13.7813	3.6230	0.0342	0.7987	0.0423	0.8410	0.2308	0.0405	0.2713	0.0000	3,262.3529	3,262.3529	0.1454	0.0000	3,265.9890
Worker	1.6536	1.4872	13.5646	0.0332	3.2563	0.0281	3.2844	0.8659	0.0259	0.8918	0.0000	2,993.7439	2,993.7439	0.1188	0.0000	2,996.7133
Total	**2.1015**	**15.2685**	**17.1876**	**0.0673**	**4.0550**	**0.0704**	**4.1254**	**1.0967**	**0.0664**	**1.1631**	**0.0000**	**6,256.0968**	**6,256.0968**	**0.2642**	**0.0000**	**6,262.7023**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7067	22.4502	5.6515	0.0583	1.3753	0.0634	1.4388	0.3975	0.0607	0.4581	0.0000	5,569.9723	5,569.9723	0.2424	0.0000	5,576.0328
Worker	2.6398	2.2946	21.2944	0.0551	5.6069	0.0467	5.6535	1.4910	0.0430	1.5340	0.0000	4,973.3942	4,973.3942	0.1828	0.0000	4,977.9633
Total	**3.3464**	**24.7448**	**26.9459**	**0.1134**	**6.9822**	**0.1101**	**7.0923**	**1.8884**	**0.1037**	**1.9921**	**0.0000**	**10,543.3665**	**10,543.3665**	**0.4252**	**0.0000**	**10,553.9961**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7067	22.4502	5.6515	0.0583	1.3753	0.0634	1.4388	0.3975	0.0607	0.4581	0.0000	5,569.9723	5,569.9723	0.2424	0.0000	5,576.0328
Worker	2.6398	2.2946	21.2944	0.0551	5.6069	0.0467	5.6535	1.4910	0.0430	1.5340	0.0000	4,973.3942	4,973.3942	0.1828	0.0000	4,977.9633
Total	**3.3464**	**24.7448**	**26.9459**	**0.1134**	**6.9822**	**0.1101**	**7.0923**	**1.8884**	**0.1037**	**1.9921**	**0.0000**	**10,543.3665**	**10,543.3665**	**0.4252**	**0.0000**	**10,553.9961**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5331	18.4874	4.8857	0.0573	1.3755	0.0275	1.4030	0.3975	0.0263	0.4238	0.0000	5,472.0598	5,472.0598	0.1976	0.0000	5,476.9998
Worker	2.4499	2.0566	19.3770	0.0530	5.6069	0.0452	5.6521	1.4910	0.0416	1.5326	0.0000	4,789.1415	4,789.1415	0.1629	0.0000	4,793.2148
Total	**2.9830**	**20.5439**	**24.2626**	**0.1103**	**6.9824**	**0.0727**	**7.0551**	**1.8885**	**0.0680**	**1.9564**	**0.0000**	**10,261.2013**	**10,261.2013**	**0.3605**	**0.0000**	**10,270.2146**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5331	18.4874	4.8857	0.0573	1.3755	0.0275	1.4030	0.3975	0.0263	0.4238	0.0000	5,472.0598	5,472.0598	0.1976	0.0000	5,476.9998
Worker	2.4499	2.0566	19.3770	0.0530	5.6069	0.0452	5.6521	1.4910	0.0416	1.5326	0.0000	4,789.1415	4,789.1415	0.1629	0.0000	4,793.2148
Total	**2.9830**	**20.5439**	**24.2626**	**0.1103**	**6.9824**	**0.0727**	**7.0551**	**1.8885**	**0.0680**	**1.9564**	**0.0000**	**10,261.2013**	**10,261.2013**	**0.3605**	**0.0000**	**10,270.2146**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5080	18.1979	4.5881	0.0573	1.3862	0.0258	1.4120	0.4006	0.0246	0.4253	0.0000	5,474.2926	5,474.2926	0.1963	0.0000	5,479.2000
Worker	2.3012	1.8636	17.9021	0.0514	5.6500	0.0441	5.6941	1.5024	0.0407	1.5431	0.0000	4,640.2986	4,640.2986	0.1470	0.0000	4,643.9726
Total	**2.8092**	**20.0615**	**22.4902**	**0.1086**	**7.0362**	**0.0699**	**7.1061**	**1.9030**	**0.0653**	**1.9683**	**0.0000**	**10,114.5912**	**10,114.5912**	**0.3433**	**0.0000**	**10,123.1726**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5080	18.1979	4.5881	0.0573	1.3862	0.0258	1.4120	0.4006	0.0246	0.4253	0.0000	5,474.2926	5,474.2926	0.1963	0.0000	5,479.2000
Worker	2.3012	1.8636	17.9021	0.0514	5.6500	0.0441	5.6941	1.5024	0.0407	1.5431	0.0000	4,640.2986	4,640.2986	0.1470	0.0000	4,643.9726
Total	**2.8092**	**20.0615**	**22.4902**	**0.1086**	**7.0362**	**0.0699**	**7.1061**	**1.9030**	**0.0653**	**1.9683**	**0.0000**	**10,114.5912**	**10,114.5912**	**0.3433**	**0.0000**	**10,123.1726**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4811	17.7442	4.3014	0.0567	1.3810	0.0239	1.4049	0.3991	0.0228	0.4219	0.0000	5,416.1107	5,416.1107	0.1927	0.0000	5,420.9286
Worker	2.1506	1.6799	16.4175	0.0491	5.6285	0.0430	5.6715	1.4967	0.0396	1.5363	0.0000	4,439.5043	4,439.5043	0.1322	0.0000	4,442.8083
Total	**2.6318**	**19.4241**	**20.7190**	**0.1058**	**7.0094**	**0.0669**	**7.0763**	**1.8958**	**0.0624**	**1.9583**	**0.0000**	**9,855.6150**	**9,855.6150**	**0.3249**	**0.0000**	**9,863.7369**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4811	17.7442	4.3014	0.0567	1.3810	0.0239	1.4049	0.3991	0.0228	0.4219	0.0000	5,416.1107	5,416.1107	0.1927	0.0000	5,420.9286
Worker	2.1506	1.6799	16.4175	0.0491	5.6285	0.0430	5.6715	1.4967	0.0396	1.5363	0.0000	4,439.5043	4,439.5043	0.1322	0.0000	4,442.8083
Total	**2.6318**	**19.4241**	**20.7190**	**0.1058**	**7.0094**	**0.0669**	**7.0763**	**1.8958**	**0.0624**	**1.9583**	**0.0000**	**9,855.6150**	**9,855.6150**	**0.3249**	**0.0000**	**9,863.7369**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4625	17.4287	4.1106	0.0564	1.3811	0.0226	1.4036	0.3992	0.0216	0.4207	0.0000	5,388.1339	5,388.1339	0.1903	0.0000	5,392.8908
Worker	2.0236	1.5245	15.0886	0.0471	5.6285	0.0413	5.6697	1.4967	0.0380	1.5347	0.0000	4,256.0762	4,256.0762	0.1186	0.0000	4,259.0402
Total	**2.4861**	**18.9532**	**19.1992**	**0.1034**	**7.0095**	**0.0638**	**7.0733**	**1.8959**	**0.0596**	**1.9554**	**0.0000**	**9,644.2101**	**9,644.2101**	**0.3088**	**0.0000**	**9,651.9310**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4625	17.4287	4.1106	0.0564	1.3811	0.0226	1.4036	0.3992	0.0216	0.4207	0.0000	5,388.1339	5,388.1339	0.1903	0.0000	5,392.8908
Worker	2.0236	1.5245	15.0886	0.0471	5.6285	0.0413	5.6697	1.4967	0.0380	1.5347	0.0000	4,256.0762	4,256.0762	0.1186	0.0000	4,259.0402
Total	**2.4861**	**18.9532**	**19.1992**	**0.1034**	**7.0095**	**0.0638**	**7.0733**	**1.8959**	**0.0596**	**1.9554**	**0.0000**	**9,644.2101**	**9,644.2101**	**0.3088**	**0.0000**	**9,651.9310**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4464	17.1399	3.9384	0.0561	1.3811	0.0214	1.4026	0.3992	0.0205	0.4197	0.0000	5,363.7547	5,363.7547	0.1879	0.0000	5,368.4523
Worker	1.9047	1.3853	13.9621	0.0454	5.6285	0.0389	5.6673	1.4967	0.0358	1.5325	0.0000	4,109.9239	4,109.9239	0.1073	0.0000	4,112.6058
Total	**2.3511**	**18.5252**	**17.9005**	**0.1015**	**7.0096**	**0.0603**	**7.0699**	**1.8959**	**0.0562**	**1.9521**	**0.0000**	**9,473.6785**	**9,473.6785**	**0.2952**	**0.0000**	**9,481.0581**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr							MT/yr			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4464	17.1399	3.9384	0.0561	1.3811	0.0214	1.4026	0.3992	0.0205	0.4197	0.0000	5,363.7547	5,363.7547	0.1879	0.0000	5,368.4523
Worker	1.9047	1.3853	13.9621	0.0454	5.6285	0.0389	5.6673	1.4967	0.0358	1.5325	0.0000	4,109.9239	4,109.9239	0.1073	0.0000	4,112.6058
Total	**2.3511**	**18.5252**	**17.9005**	**0.1015**	**7.0096**	**0.0603**	**7.0699**	**1.8959**	**0.0562**	**1.9521**	**0.0000**	**9,473.6785**	**9,473.6785**	**0.2952**	**0.0000**	**9,481.0581**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4314	16.8333	3.8013	0.0557	1.3759	0.0203	1.3962	0.3977	0.0194	0.4171	0.0000	5,322.9404	5,322.9404	0.1845	0.0000	5,327.5536
Worker	1.7778	1.2569	12.9236	0.0438	5.6069	0.0360	5.6429	1.4910	0.0331	1.5241	0.0000	3,964.9707	3,964.9707	0.0972	0.0000	3,967.3999
Total	**2.2092**	**18.0901**	**16.7249**	**0.0995**	**6.9828**	**0.0563**	**7.0391**	**1.8886**	**0.0526**	**1.9412**	**0.0000**	**9,287.9112**	**9,287.9112**	**0.2817**	**0.0000**	**9,294.9535**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4314	16.8333	3.8013	0.0557	1.3759	0.0203	1.3962	0.3977	0.0194	0.4171	0.0000	5,322.9404	5,322.9404	0.1845	0.0000	5,327.5536
Worker	1.7778	1.2569	12.9236	0.0438	5.6069	0.0360	5.6429	1.4910	0.0331	1.5241	0.0000	3,964.9707	3,964.9707	0.0972	0.0000	3,967.3999
Total	**2.2092**	**18.0901**	**16.7249**	**0.0995**	**6.9828**	**0.0563**	**7.0391**	**1.8886**	**0.0526**	**1.9412**	**0.0000**	**9,287.9112**	**9,287.9112**	**0.2817**	**0.0000**	**9,294.9535**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4220	16.6778	3.7127	0.0557	1.3813	0.0195	1.4007	0.3992	0.0186	0.4178	0.0000	5,325.8273	5,325.8273	0.1831	0.0000	5,330.4058
Worker	1.6571	1.1460	12.0178	0.0427	5.6285	0.0336	5.6621	1.4967	0.0310	1.5277	0.0000	3,865.0099	3,865.0099	0.0881	0.0000	3,867.2125
Total	**2.0792**	**17.8238**	**15.7304**	**0.0984**	**7.0097**	**0.0531**	**7.0628**	**1.8959**	**0.0496**	**1.9455**	**0.0000**	**9,190.8372**	**9,190.8372**	**0.2712**	**0.0000**	**9,197.6183**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4220	16.6778	3.7127	0.0557	1.3813	0.0195	1.4007	0.3992	0.0186	0.4178	0.0000	5,325.8273	5,325.8273	0.1831	0.0000	5,330.4058
Worker	1.6571	1.1460	12.0178	0.0427	5.6285	0.0336	5.6621	1.4967	0.0310	1.5277	0.0000	3,865.0099	3,865.0099	0.0881	0.0000	3,867.2125
Total	**2.0792**	**17.8238**	**15.7304**	**0.0984**	**7.0097**	**0.0531**	**7.0628**	**1.8959**	**0.0496**	**1.9455**	**0.0000**	**9,190.8372**	**9,190.8372**	**0.2712**	**0.0000**	**9,197.6183**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4131	16.4897	3.6355	0.0556	1.3813	0.0187	1.4000	0.3992	0.0179	0.4171	0.0000	5,312.3620	5,312.3620	0.1809	0.0000	5,316.8840
Worker	1.5306	1.0379	11.1526	0.0416	5.6285	0.0313	5.6597	1.4967	0.0288	1.5255	0.0000	3,762.9688	3,762.9688	0.0796	0.0000	3,764.9575
Total	**1.9437**	**17.5276**	**14.7881**	**0.0971**	**7.0098**	**0.0500**	**7.0597**	**1.8959**	**0.0466**	**1.9426**	**0.0000**	**9,075.3308**	**9,075.3308**	**0.2604**	**0.0000**	**9,081.8415**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4131	16.4897	3.6355	0.0556	1.3813	0.0187	1.4000	0.3992	0.0179	0.4171	0.0000	5,312.3620	5,312.3620	0.1809	0.0000	5,316.8840
Worker	1.5306	1.0379	11.1526	0.0416	5.6285	0.0313	5.6597	1.4967	0.0288	1.5255	0.0000	3,762.9688	3,762.9688	0.0796	0.0000	3,764.9575
Total	**1.9437**	**17.5276**	**14.7881**	**0.0971**	**7.0098**	**0.0500**	**7.0597**	**1.8959**	**0.0466**	**1.9426**	**0.0000**	**9,075.3308**	**9,075.3308**	**0.2604**	**0.0000**	**9,081.8415**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4057	16.3278	3.5707	0.0554	1.3813	0.0180	1.3994	0.3993	0.0172	0.4165	0.0000	5,302.5051	5,302.5051	0.1793	0.0000	5,306.9867
Worker	1.3955	0.9329	10.3103	0.0406	5.6285	0.0291	5.6576	1.4967	0.0268	1.5235	0.0000	3,672.7862	3,672.7862	0.0713	0.0000	3,674.5682
Total	**1.8012**	**17.2607**	**13.8810**	**0.0960**	**7.0098**	**0.0471**	**7.0569**	**1.8960**	**0.0440**	**1.9399**	**0.0000**	**8,975.2913**	**8,975.2913**	**0.2506**	**0.0000**	**8,981.5548**

3.8 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4057	16.3278	3.5707	0.0554	1.3813	0.0180	1.3994	0.3993	0.0172	0.4165	0.0000	5,302.505 1	5,302.505 1	0.1793	0.0000	5,306.986 7
Worker	1.3955	0.9329	10.3103	0.0406	5.6285	0.0291	5.6576	1.4967	0.0268	1.5235	0.0000	3,672.786 2	3,672.786 2	0.0713	0.0000	3,674.568 2
Total	**1.8012**	**17.2607**	**13.8810**	**0.0960**	**7.0098**	**0.0471**	**7.0569**	**1.8960**	**0.0440**	**1.9399**	**0.0000**	**8,975.291 3**	**8,975.291 3**	**0.2506**	**0.0000**	**8,981.554 8**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3479	344.3479	0.0138	0.0000	344.6933
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3479**	**344.3479**	**0.0138**	**0.0000**	**344.6933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4012	16.2476	3.5359	0.0556	1.3867	0.0175	1.4041	0.4008	0.0167	0.4175	0.0000	5,316.9228	5,316.9228	0.1784	0.0000	5,321.3823
Worker	1.2802	0.8456	9.6140	0.0398	5.6500	0.0272	5.6772	1.5024	0.0251	1.5275	0.0000	3,607.4107	3,607.4107	0.0643	0.0000	3,609.0192
Total	**1.6814**	**17.0931**	**13.1499**	**0.0954**	**7.0367**	**0.0447**	**7.0814**	**1.9032**	**0.0417**	**1.9450**	**0.0000**	**8,924.3335**	**8,924.3335**	**0.2427**	**0.0000**	**8,930.4015**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3475	344.3475	0.0138	0.0000	344.6929
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3475**	**344.3475**	**0.0138**	**0.0000**	**344.6929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4012	16.2476	3.5359	0.0556	1.3867	0.0175	1.4041	0.4008	0.0167	0.4175	0.0000	5,316.9228	5,316.9228	0.1784	0.0000	5,321.3823
Worker	1.2802	0.8456	9.6140	0.0398	5.6500	0.0272	5.6772	1.5024	0.0251	1.5275	0.0000	3,607.4107	3,607.4107	0.0643	0.0000	3,609.0192
Total	**1.6814**	**17.0931**	**13.1499**	**0.0954**	**7.0367**	**0.0447**	**7.0814**	**1.9032**	**0.0417**	**1.9450**	**0.0000**	**8,924.3335**	**8,924.3335**	**0.2427**	**0.0000**	**8,930.4015**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3934	15.9991	3.4714	0.0551	1.3761	0.0168	1.3929	0.3978	0.0161	0.4138	0.0000	5,273.1800	5,273.1800	0.1758	0.0000	5,277.5761
Worker	1.1680	0.7630	8.9202	0.0388	5.6069	0.0252	5.6321	1.4910	0.0232	1.5142	0.0000	3,511.0802	3,511.0802	0.0578	0.0000	3,512.5241
Total	**1.5614**	**16.7620**	**12.3916**	**0.0939**	**6.9830**	**0.0420**	**7.0250**	**1.8887**	**0.0393**	**1.9280**	**0.0000**	**8,784.2602**	**8,784.2602**	**0.2336**	**0.0000**	**8,790.1002**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3934	15.9991	3.4714	0.0551	1.3761	0.0168	1.3929	0.3978	0.0161	0.4138	0.0000	5,273.1800	5,273.1800	0.1758	0.0000	5,277.5761
Worker	1.1680	0.7630	8.9202	0.0388	5.6069	0.0252	5.6321	1.4910	0.0232	1.5142	0.0000	3,511.0802	3,511.0802	0.0578	0.0000	3,512.5241
Total	**1.5614**	**16.7620**	**12.3916**	**0.0939**	**6.9830**	**0.0420**	**7.0250**	**1.8887**	**0.0393**	**1.9280**	**0.0000**	**8,784.2602**	**8,784.2602**	**0.2336**	**0.0000**	**8,790.1002**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3891	15.8917	3.4355	0.0551	1.3762	0.0163	1.3925	0.3978	0.0156	0.4133	0.0000	5,272.0116	5,272.0116	0.1747	0.0000	5,276.3801
Worker	1.0838	0.7012	8.3529	0.0381	5.6069	0.0236	5.6305	1.4910	0.0217	1.5127	0.0000	3,451.0626	3,451.0626	0.0522	0.0000	3,452.3674
Total	**1.4728**	**16.5929**	**11.7884**	**0.0932**	**6.9830**	**0.0399**	**7.0229**	**1.8887**	**0.0373**	**1.9260**	**0.0000**	**8,723.0741**	**8,723.0741**	**0.2269**	**0.0000**	**8,728.7475**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3891	15.8917	3.4355	0.0551	1.3762	0.0163	1.3925	0.3978	0.0156	0.4133	0.0000	5,272.0116	5,272.0116	0.1747	0.0000	5,276.3801
Worker	1.0838	0.7012	8.3529	0.0381	5.6069	0.0236	5.6305	1.4910	0.0217	1.5127	0.0000	3,451.0626	3,451.0626	0.0522	0.0000	3,452.3674
Total	**1.4728**	**16.5929**	**11.7884**	**0.0932**	**6.9830**	**0.0399**	**7.0229**	**1.8887**	**0.0373**	**1.9260**	**0.0000**	**8,723.0741**	**8,723.0741**	**0.2269**	**0.0000**	**8,728.7475**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3479	344.3479	0.0128	0.0000	344.6686
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3479**	**344.3479**	**0.0128**	**0.0000**	**344.6686**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3883	15.9243	3.4312	0.0555	1.3868	0.0160	1.4028	0.4008	0.0153	0.4161	0.0000	5,312.6155	5,312.6155	0.1753	0.0000	5,316.9989
Worker	1.0171	0.6574	7.9192	0.0378	5.6500	0.0223	5.6723	1.5024	0.0205	1.5229	0.0000	3,425.4498	3,425.4498	0.0477	0.0000	3,426.6426
Total	**1.4054**	**16.5817**	**11.3504**	**0.0934**	**7.0368**	**0.0383**	**7.0751**	**1.9033**	**0.0358**	**1.9391**	**0.0000**	**8,738.0653**	**8,738.0653**	**0.2231**	**0.0000**	**8,743.6414**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3475	344.3475	0.0128	0.0000	344.6682
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3475**	**344.3475**	**0.0128**	**0.0000**	**344.6682**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3883	15.9243	3.4312	0.0555	1.3868	0.0160	1.4028	0.4008	0.0153	0.4161	0.0000	5,312.6155	5,312.6155	0.1753	0.0000	5,316.9989
Worker	1.0171	0.6574	7.9192	0.0378	5.6500	0.0223	5.6723	1.5024	0.0205	1.5229	0.0000	3,425.4498	3,425.4498	0.0477	0.0000	3,426.6426
Total	**1.4054**	**16.5817**	**11.3504**	**0.0934**	**7.0368**	**0.0383**	**7.0751**	**1.9033**	**0.0358**	**1.9391**	**0.0000**	**8,738.0653**	**8,738.0653**	**0.2231**	**0.0000**	**8,743.6414**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.3383	5,292.3383	0.1747	0.0000	5,296.7050
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.3756	3,412.3756	0.0475	0.0000	3,413.5638
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.7139**	**8,704.7139**	**0.2222**	**0.0000**	**8,710.2688**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3868	15.8635	3.4182	0.0553	1.3815	0.0160	1.3974	0.3993	0.0153	0.4146	0.0000	5,292.338 3	5,292.338 3	0.1747	0.0000	5,296.705 0
Worker	1.0132	0.6549	7.8889	0.0377	5.6285	0.0222	5.6506	1.4967	0.0204	1.5171	0.0000	3,412.375 6	3,412.375 6	0.0475	0.0000	3,413.563 8
Total	**1.4000**	**16.5185**	**11.3071**	**0.0930**	**7.0099**	**0.0382**	**7.0481**	**1.8960**	**0.0357**	**1.9317**	**0.0000**	**8,704.713 9**	**8,704.713 9**	**0.2222**	**0.0000**	**8,710.268 8**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9310	2.0953	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.7193	341.7193	0.0127	0.0000	342.0375
Total	**0.1582**	**0.9310**	**2.0953**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.7193**	**341.7193**	**0.0127**	**0.0000**	**342.0375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3854	15.8028	3.4051	0.0551	1.3762	0.0159	1.3921	0.3978	0.0152	0.4130	0.0000	5,272.0611	5,272.0611	0.1740	0.0000	5,276.4111
Worker	1.0093	0.6524	7.8587	0.0375	5.6069	0.0221	5.6290	1.4910	0.0203	1.5113	0.0000	3,399.3014	3,399.3014	0.0473	0.0000	3,400.4850
Total	**1.3947**	**16.4552**	**11.2638**	**0.0926**	**6.9831**	**0.0380**	**7.0211**	**1.8887**	**0.0355**	**1.9243**	**0.0000**	**8,671.3625**	**8,671.3625**	**0.2213**	**0.0000**	**8,676.8961**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1582	0.9310	2.0953	4.0200e-003		0.0118	0.0118		0.0118	0.0118	0.0000	341.7189	341.7189	0.0127	0.0000	342.0371
Total	**0.1582**	**0.9310**	**2.0953**	**4.0200e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**341.7189**	**341.7189**	**0.0127**	**0.0000**	**342.0371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3854	15.8028	3.4051	0.0551	1.3762	0.0159	1.3921	0.3978	0.0152	0.4130	0.0000	5,272.0611	5,272.0611	0.1740	0.0000	5,276.4111
Worker	1.0093	0.6524	7.8587	0.0375	5.6069	0.0221	5.6290	1.4910	0.0203	1.5113	0.0000	3,399.3014	3,399.3014	0.0473	0.0000	3,400.4850
Total	**1.3947**	**16.4552**	**11.2638**	**0.0926**	**6.9831**	**0.0380**	**7.0211**	**1.8887**	**0.0355**	**1.9243**	**0.0000**	**8,671.3625**	**8,671.3625**	**0.2213**	**0.0000**	**8,676.8961**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1436	0.8268	1.9342	3.7100e-003		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	315.4333	315.4333	0.0113	0.0000	315.7167
Total	**0.1436**	**0.8268**	**1.9342**	**3.7100e-003**		**8.8500e-003**	**8.8500e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**315.4333**	**315.4333**	**0.0113**	**0.0000**	**315.7167**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3470	14.3469	3.0532	0.0511	1.2704	0.0137	1.2841	0.3672	0.0130	0.3802	0.0000	4,883.8173	4,883.8173	0.1585	0.0000	4,887.7802
Worker	0.6973	0.4605	5.9049	0.0330	5.1756	0.0157	5.1913	1.3763	0.0144	1.3907	0.0000	2,987.4802	2,987.4802	0.0307	0.0000	2,988.2480
Total	**1.0443**	**14.8074**	**8.9580**	**0.0840**	**6.4460**	**0.0294**	**6.4753**	**1.7435**	**0.0275**	**1.7710**	**0.0000**	**7,871.2975**	**7,871.2975**	**0.1892**	**0.0000**	**7,876.0282**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1436	0.8268	1.9342	3.7100e-003		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	315.4329	315.4329	0.0113	0.0000	315.7163
Total	**0.1436**	**0.8268**	**1.9342**	**3.7100e-003**		**8.8500e-003**	**8.8500e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**315.4329**	**315.4329**	**0.0113**	**0.0000**	**315.7163**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3470	14.3469	3.0532	0.0511	1.2704	0.0137	1.2841	0.3672	0.0130	0.3802	0.0000	4,883.8173	4,883.8173	0.1585	0.0000	4,887.7802
Worker	0.6973	0.4605	5.9049	0.0330	5.1756	0.0157	5.1913	1.3763	0.0144	1.3907	0.0000	2,987.4802	2,987.4802	0.0307	0.0000	2,988.2480
Total	**1.0443**	**14.8074**	**8.9580**	**0.0840**	**6.4460**	**0.0294**	**6.4753**	**1.7435**	**0.0275**	**1.7710**	**0.0000**	**7,871.2975**	**7,871.2975**	**0.1892**	**0.0000**	**7,876.0282**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.5747	39.2011	60.6329	0.3342	35.8816	0.1237	36.0053	9.6251	0.1151	9.7402	0.0000	30,955.7183	30,955.7183	1.0710	0.0000	30,982.4928
Unmitigated	6.0495	41.0435	68.7332	0.3841	41.9668	0.1419	42.1087	11.2575	0.1320	11.3895	0.0000	35,565.3862	35,565.3862	1.1932	0.0000	35,595.2159

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Library	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.892 1	5,174.892 1	0.0992	0.0949	5,205.643 9
NaturalGas Unmitigated	0.5229	4.5002	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.892 1	5,174.892 1	0.0992	0.0949	5,205.643 9

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24261e+006	0.0229	0.2080	0.1747	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4018	226.4018	4.3400e-003	4.1500e-003	227.7472
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.8921**	**5,174.8921**	**0.0992**	**0.0949**	**5,205.6439**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24261e+006	0.0229	0.2080	0.1747	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4018	226.4018	4.3400e-003	4.1500e-003	227.7472
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.8921**	**5,174.8921**	**0.0992**	**0.0949**	**5,205.6439**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e +007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24011e +006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e +006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e +006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e +006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e +007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24011e +006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e +006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e +006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e +006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	25.6101	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Unmitigated	60.1199	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6720	1,245.6416	0.7786	0.0491	1,279.7350

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	22.3356					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	32.9342	0.9911	42.5297	0.0818		6.0172	6.0172		6.0172	6.0172	582.9695	595.4633	1,178.4328	0.7145	0.0491	1,210.9223
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**60.1199**	**1.4637**	**83.4823**	**0.0840**		**6.2452**	**6.2452**		**6.2452**	**6.2452**	**582.9695**	**662.6720**	**1,245.6416**	**0.7787**	**0.0491**	**1,279.7350**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6217					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	20.6702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0898	0.7672	0.3265	4.9000e-003		0.0620	0.0620		0.0620	0.0620	0.0000	888.4690	888.4690	0.0170	0.0163	893.7487
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**25.6101**	**1.2397**	**41.2791**	**7.0700e-003**		**0.2900**	**0.2900**		**0.2900**	**0.2900**	**0.0000**	**955.6778**	**955.6778**	**0.0812**	**0.0163**	**962.5614**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	78.9648	8.1104	0.1915	338.7943
Unmitigated	98.7060	10.1381	0.2394	423.4929

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.40778 / 3.40926	1.7156	0.1762	4.1600e-003	7.3609
City Park	0 / 176.339	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	175.916 / 110.903	55.8100	5.7322	0.1354	239.4499
Elementary School	6.67151 / 17.1553	2.1166	0.2174	5.1300e-003	9.0810
General Office Building	22.2167 / 13.6167	7.0483	0.7239	0.0171	30.2405
High School	2.31701 / 5.95802	0.7351	0.0755	1.7800e-003	3.1538
Junior High School	1.82788 / 4.70026	0.5799	0.0596	1.4100e-003	2.4880
Library	0.688356 / 1.07666	0.2184	0.0224	5.3000e-004	0.9370
Regional Shopping Center	14.8145 / 9.07986	4.7000	0.4827	0.0114	20.1649
Single Family Housing	78.1848 / 49.2904	24.8044	2.5477	0.0602	106.4222
Supermarket	3.08171 / 0.0953105	0.9777	0.1004	2.3700e-003	4.1947
Total		**98.7060**	**10.1380**	**0.2394**	**423.4929**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.32623 / 3.20129	1.3725	0.1410	3.3300e-003	5.8887
City Park	0 / 165.583	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	140.733 / 104.138	44.6480	4.5858	0.1083	191.5599
Elementary School	5.33721 / 16.1088	1.6933	0.1739	4.1100e-003	7.2648
General Office Building	17.7734 / 12.7861	5.6387	0.5792	0.0137	24.1924
High School	1.85361 / 5.59458	0.5881	0.0604	1.4300e-003	2.5231
Junior High School	1.4623 / 4.41354	0.4639	0.0477	1.1300e-003	1.9904
Library	0.550685 / 1.01098	0.1747	0.0179	4.2000e-004	0.7496
Regional Shopping Center	11.8516 / 8.52599	3.7600	0.3862	9.1200e-003	16.1319
Single Family Housing	62.5479 / 46.2837	19.8436	2.0381	0.0481	85.1377
Supermarket	2.46536 / 0.0894965	0.7822	0.0803	1.9000e-003	3.3558
Total		**78.9648**	**8.1104**	**0.1915**	**338.7943**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	904.1258	53.4323	0.0000	2,239.933 4
Unmitigated	904.1258	53.4323	0.0000	2,239.933 4

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.24	101.9502	6.0251	0.0000	252.5773
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1258**	**53.4323**	**0.0000**	**2,239.9334**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.24	101.9502	6.0251	0.0000	252.5773
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1258**	**53.4323**	**0.0000**	**2,239.9334**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2050) - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9168	83.5230	55.0563	0.1039	18.6037	3.8351	22.4387	10.0683	3.5441	13.6124	0.0000	10,063.2047	10,063.2047	3.0136	0.0000	10,138.5444
2021	50.2955	232.9484	305.9940	1.0706	72.1351	3.8549	74.8625	19.2255	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150
2022	47.5103	217.5362	281.7078	1.0468	72.1361	2.3673	74.5034	19.2259	2.2195	21.4454	0.0000	106,603.9970	106,603.9970	5.2779	0.0000	106,735.9443
2023	44.2115	183.4410	257.9472	1.0185	72.1370	1.9068	74.0438	19.2262	1.7828	21.0090	0.0000	103,777.0289	103,777.0289	4.6999	0.0000	103,894.5249
2024	42.2743	176.8921	240.0173	0.9950	72.1380	1.7412	73.8791	19.2265	1.6269	20.8535	0.0000	101,443.3024	101,443.3024	4.4903	0.0000	101,555.5604
2025	40.5748	170.6301	224.2991	0.9719	72.1388	1.5738	73.7126	19.2268	1.4699	20.6967	0.0000	99,149.6531	99,149.6531	4.3114	0.0000	99,257.4371
2026	39.2381	167.0425	210.0605	0.9496	72.1394	1.5479	73.6873	19.2270	1.4456	20.6726	0.0000	96,935.1028	96,935.1028	4.1464	0.0000	97,038.7618
2027	38.0007	163.7839	197.9743	0.9317	72.1399	1.5172	73.6572	19.2272	1.4168	20.6441	0.0000	95,155.0545	95,155.0545	4.0072	0.0000	95,255.2333
2028	36.7816	160.9933	187.5626	0.9159	72.1404	1.4847	73.6251	19.2274	1.3866	20.6140	0.0000	93,586.4215	93,586.4215	3.8817	0.0000	93,683.4638
2029	35.5144	158.4269	177.6301	0.9020	72.1408	1.4546	73.5954	19.2276	1.3586	20.5861	0.0000	92,198.3602	92,198.3602	3.7642	0.0000	92,292.4650
2030	34.6435	149.8773	170.0934	0.8990	72.1412	0.9287	73.0698	19.2277	0.8994	20.1270	0.0000	91,779.4128	91,779.4128	2.5768	0.0000	91,843.8334
2031	33.3386	147.8350	161.5536	0.8884	72.1415	0.9036	73.0452	19.2278	0.8761	20.1039	0.0000	90,729.0454	90,729.0454	2.4756	0.0000	90,790.9366
2032	32.1798	146.0551	154.1724	0.8793	72.1418	0.8808	73.0226	19.2279	0.8549	20.0829	0.0000	89,831.9896	89,831.9896	2.3864	0.0000	89,891.6484

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2033	31.1907	144.5170	147.9177	0.8716	72.1421	0.8602	73.0023	19.2280	0.8359	20.0639	0.0000	89,066.9785	89,066.9785	2.3114	0.0000	89,124.7647
2034	30.3654	143.2235	142.1749	0.8650	72.1423	0.8414	72.9838	19.2281	0.8184	20.0465	0.0000	88,413.8085	88,413.8085	2.2428	0.0000	88,469.8776
2035	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2036	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2037	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2038	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2039	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2040	26.6726	134.3852	122.2625	0.8432	72.1432	0.4677	72.6109	19.2284	0.4501	19.6785	0.0000	86,278.6393	86,278.6393	1.9661	0.0000	86,327.7905
Maximum	**50.2955**	**232.9484**	**305.9940**	**1.0706**	**72.1432**	**3.8549**	**74.8625**	**19.2284**	**3.5736**	**21.7826**	**0.0000**	**108,962.3895**	**108,962.3895**	**5.5810**	**0.0000**	**109,101.9150**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9168	83.5230	55.0563	0.1039	8.6672	3.8351	12.5023	4.6064	3.5441	8.1505	0.0000	10,063.2047	10,063.2047	3.0136	0.0000	10,138.5444
2021	50.2955	232.9484	305.9940	1.0706	72.1351	3.8549	74.8625	19.2255	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150
2022	47.5103	217.5362	281.7078	1.0468	72.1361	2.3673	74.5034	19.2259	2.2195	21.4454	0.0000	106,603.9970	106,603.9970	5.2779	0.0000	106,735.9443

Salinas CASP Model Full Buildout (2050) - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	44.2115	183.4410	257.9472	1.0185	72.1370	1.9068	74.0438	19.2262	1.7828	21.0090	0.0000	103,777.0289	103,777.0289	4.6999	0.0000	103,894.5249
2024	42.2743	176.8921	240.0173	0.9950	72.1380	1.7412	73.8791	19.2265	1.6269	20.8535	0.0000	101,443.3024	101,443.3024	4.4903	0.0000	101,555.5604
2025	40.5748	170.6301	224.2991	0.9719	72.1388	1.5738	73.7126	19.2268	1.4699	20.6967	0.0000	99,149.6531	99,149.6531	4.3114	0.0000	99,257.4371
2026	39.2381	167.0425	210.0605	0.9496	72.1394	1.5479	73.6873	19.2270	1.4456	20.6726	0.0000	96,935.1028	96,935.1028	4.1464	0.0000	97,038.7618
2027	38.0007	163.7839	197.9743	0.9317	72.1399	1.5172	73.6572	19.2272	1.4168	20.6441	0.0000	95,155.0545	95,155.0545	4.0072	0.0000	95,255.2333
2028	36.7816	160.9933	187.5626	0.9159	72.1404	1.4847	73.6251	19.2274	1.3866	20.6140	0.0000	93,586.4215	93,586.4215	3.8817	0.0000	93,683.4638
2029	35.5144	158.4269	177.6301	0.9020	72.1408	1.4546	73.5954	19.2276	1.3586	20.5861	0.0000	92,198.3602	92,198.3602	3.7642	0.0000	92,292.4650
2030	34.6435	149.8773	170.0934	0.8990	72.1412	0.9287	73.0698	19.2277	0.8994	20.1270	0.0000	91,779.4128	91,779.4128	2.5768	0.0000	91,843.8334
2031	33.3386	147.8350	161.5536	0.8884	72.1415	0.9036	73.0452	19.2278	0.8761	20.1039	0.0000	90,729.0454	90,729.0454	2.4756	0.0000	90,790.9366
2032	32.1798	146.0551	154.1724	0.8793	72.1418	0.8808	73.0226	19.2279	0.8549	20.0829	0.0000	89,831.9896	89,831.9896	2.3864	0.0000	89,891.6484
2033	31.1907	144.5170	147.9177	0.8716	72.1421	0.8602	73.0023	19.2280	0.8359	20.0639	0.0000	89,066.9785	89,066.9785	2.3114	0.0000	89,124.7647
2034	30.3654	143.2235	142.1749	0.8650	72.1423	0.8414	72.9838	19.2281	0.8184	20.0465	0.0000	88,413.8085	88,413.8085	2.2428	0.0000	88,469.8776
2035	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2036	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2037	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2038	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2039	29.2863	139.0570	137.1006	0.8593	72.1425	0.6133	72.7558	19.2282	0.5915	19.8197	0.0000	87,859.8687	87,859.8687	2.1530	0.0000	87,913.6925
2040	26.6726	134.3852	122.2625	0.8432	72.1432	0.4677	72.6109	19.2284	0.4501	19.6785	0.0000	86,278.6393	86,278.6393	1.9661	0.0000	86,327.7905

Maximum	50.2955	232.9484	305.9940	1.0706	72.1432	3.8549	74.8625	19.2284	3.5736	21.7826	0.0000	108,962.3895	108,962.3895	5.5810	0.0000	109,101.9150

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.68	0.00	0.67	1.38	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	42.2596	261.5310	449.4275	2.5477	274.4191	0.9012	275.3203	73.4109	0.8383	74.2492		259,901.9775	259,901.9775	8.2801		260,108.9807
Total	**1,000.4573**	**314.1440**	**1,826.0551**	**4.7176**	**274.4191**	**151.4660**	**425.8851**	**73.4109**	**151.4031**	**224.8140**	**15,673.5102**	**307,760.7384**	**323,434.2486**	**28.6545**	**1.8927**	**324,714.6405**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	39.2708	250.6348	394.4230	2.2178	234.6284	0.7861	235.4145	62.7663	0.7312	63.4975		226,340.7946	226,340.7946	7.4210		226,526.3202
Total	**187.2592**	**297.7856**	**741.7045**	**2.5109**	**234.6284**	**6.1025**	**240.7308**	**62.7663**	**6.0475**	**68.8138**	**0.0000**	**282,077.2026**	**282,077.2026**	**9.0437**	**1.0110**	**282,604.5636**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	81.28	5.21	59.38	46.78	14.50	95.97	43.48	14.50	96.01	69.39	100.00	8.35	12.79	68.44	46.59	12.97

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1292	0.0000	6.1292	0.9282	0.0000	0.9282			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**6.1292**	**1.6587**	**7.7879**	**0.9282**	**1.5419**	**2.4701**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2275	7.9989	1.6088	0.0222	0.4726	0.0315	0.5041	0.1295	0.0301	0.1596		2,347.4455	2,347.4455	0.0849		2,349.5686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.2938**	**8.0523**	**2.1852**	**0.0235**	**0.5958**	**0.0326**	**0.6284**	**0.1621**	**0.0311**	**0.1932**		**2,480.1460**	**2,480.1460**	**0.0906**		**2,482.4107**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7582	0.0000	2.7582	0.4177	0.0000	0.4177			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**2.7582**	**1.6587**	**4.4169**	**0.4177**	**1.5419**	**1.9596**	**0.0000**	**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2275	7.9989	1.6088	0.0222	0.4726	0.0315	0.5041	0.1295	0.0301	0.1596		2,347.445 5	2,347.445 5	0.0849		2,349.568 6
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.2938**	**8.0523**	**2.1852**	**0.0235**	**0.5958**	**0.0326**	**0.6284**	**0.1621**	**0.0311**	**0.1932**		**2,480.146 0**	**2,480.146 0**	**0.0906**		**2,482.410 7**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418		9,753.570 2	9,753.570 2	3.0004		9,828.579 3
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**18.0663**	**3.8326**	**21.8989**	**9.9307**	**3.5418**	**13.4725**		**9,753.570 2**	**9,753.570 2**	**3.0004**		**9,828.579 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1546	0.1245	1.3448	3.1100e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		309.6345	309.6345	0.0132		309.9651
Total	**0.1546**	**0.1245**	**1.3448**	**3.1100e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**309.6345**	**309.6345**	**0.0132**		**309.9651**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418	0.0000	9,753.570 2	9,753.570 2	3.0004		9,828.579 3
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**8.1298**	**3.8326**	**11.9624**	**4.4688**	**3.5418**	**8.0107**	**0.0000**	**9,753.570 2**	**9,753.570 2**	**3.0004**		**9,828.579 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1546	0.1245	1.3448	3.1100e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		309.6345	309.6345	0.0132		309.9651
Total	**0.1546**	**0.1245**	**1.3448**	**3.1100e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**309.6345**	**309.6345**	**0.0132**		**309.9651**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.4290	0.0000	18.4290	4.6499	0.0000	4.6499			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**18.4290**	**2.1739**	**20.6029**	**4.6499**	**2.0000**	**6.6499**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0711	0.7685	1.7800e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		176.9340	176.9340	7.5500e-003		177.1229
Total	**0.0883**	**0.0711**	**0.7685**	**1.7800e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**176.9340**	**176.9340**	**7.5500e-003**		**177.1229**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2930	0.0000	8.2930	2.0925	0.0000	2.0925			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.2930**	**2.1739**	**10.4669**	**2.0925**	**2.0000**	**4.0924**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0711	0.7685	1.7800e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		176.9340	176.9340	7.5500e-003		177.1229
Total	**0.0883**	**0.0711**	**0.7685**	**1.7800e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**176.9340**	**176.9340**	**7.5500e-003**		**177.1229**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720		6,238.1646	6,238.1646	1.8147		6,283.5320
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**		**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3533	0.2845	3.0739	7.1200e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		707.7361	707.7361	0.0302		708.4915
Total	**0.3533**	**0.2845**	**3.0739**	**7.1200e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**707.7361**	**707.7361**	**0.0302**		**708.4915**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720	0.0000	6,238.164 6	6,238.164 6	1.8147		6,283.531 9
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**	**0.0000**	**6,238.164 6**	**6,238.164 6**	**1.8147**		**6,283.531 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3533	0.2845	3.0739	7.1200e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		707.7361	707.7361	0.0302		708.4915
Total	**0.3533**	**0.2845**	**3.0739**	**7.1200e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**707.7361**	**707.7361**	**0.0302**		**708.4915**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822		6,239.0208	6,239.0208	1.8080		6,284.2216
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**		**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2216**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3259	0.2539	2.8000	6.8700e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		684.0237	684.0237	0.0270		684.6975
Total	**0.3259**	**0.2539**	**2.8000**	**6.8700e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**684.0237**	**684.0237**	**0.0270**		**684.6975**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822	0.0000	6,239.0208	6,239.0208	1.8080		6,284.2215
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**	**0.0000**	**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2215**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3259	0.2539	2.8000	6.8700e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		684.0237	684.0237	0.0270		684.6975
Total	**0.3259**	**0.2539**	**2.8000**	**6.8700e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**684.0237**	**684.0237**	**0.0270**		**684.6975**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176		2,488.6589	2,488.6589	0.7332		2,506.9882
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**		**2,488.6589**	**2,488.6589**	**0.7332**		**2,506.9882**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4237	3.4471	38.0097	0.0933	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		9,285.6213	9,285.6213	0.3659		9,294.7684
Total	**4.4237**	**3.4471**	**38.0097**	**0.0933**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**9,285.6213**	**9,285.6213**	**0.3659**		**9,294.7684**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176	0.0000	2,488.658 9	2,488.658 9	0.7332		2,506.988 2
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**	**0.0000**	**2,488.658 9**	**2,488.658 9**	**0.7332**		**2,506.988 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4237	3.4471	38.0097	0.0933	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		9,285.621 3	9,285.621 3	0.3659		9,294.768 4
Total	**4.4237**	**3.4471**	**38.0097**	**0.0933**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**9,285.621 3**	**9,285.621 3**	**0.3659**		**9,294.768 4**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042		2,489.1084	2,489.1084	0.7323		2,507.4165
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**		**2,489.1084**	**2,489.1084**	**0.7323**		**2,507.4165**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1006	3.0893	34.7247	0.0900	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,958.7479	8,958.7479	0.3274		8,966.9323
Total	**4.1006**	**3.0893**	**34.7247**	**0.0900**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,958.7479**	**8,958.7479**	**0.3274**		**8,966.9323**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042	0.0000	2,489.108 3	2,489.108 3	0.7323		2,507.416 5
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**	**0.0000**	**2,489.108 3**	**2,489.108 3**	**0.7323**		**2,507.416 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1006	3.0893	34.7247	0.0900	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,958.747 9	8,958.747 9	0.3274		8,966.932 3
Total	**4.1006**	**3.0893**	**34.7247**	**0.0900**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,958.747 9**	**8,958.747 9**	**0.3274**		**8,966.932 3**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402		2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**		**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8042	2.7695	31.6724	0.0866	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,626.720 3	8,626.720 3	0.2924		8,634.029 0
Total	**3.8042**	**2.7695**	**31.6724**	**0.0866**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,626.720 3**	**8,626.720 3**	**0.2924**		**8,634.029 0**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402	0.0000	2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**	**0.0000**	**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8042	2.7695	31.6724	0.0866	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,626.720 3	8,626.720 3	0.2924		8,634.029 0
Total	**3.8042**	**2.7695**	**31.6724**	**0.0866**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,626.720 3**	**8,626.720 3**	**0.2924**		**8,634.029 0**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920		2,488.9953	2,488.9953	0.7298		2,507.2406
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**		**2,488.9953**	**2,488.9953**	**0.7298**		**2,507.2406**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5434	2.4909	29.0931	0.0833	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		8,294.6617	8,294.6617	0.2621		8,301.2140
Total	**3.5434**	**2.4909**	**29.0931**	**0.0833**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**8,294.6617**	**8,294.6617**	**0.2621**		**8,301.2140**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920	0.0000	2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**	**0.0000**	**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5434	2.4909	29.0931	0.0833	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		8,294.661 7	8,294.661 7	0.2621		8,301.214 0
Total	**3.5434**	**2.4909**	**29.0931**	**0.0833**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**8,294.661 7**	**8,294.661 7**	**0.2621**		**8,301.214 0**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3221	2.2544	26.8185	0.0800	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,965.940 1	7,965.940 1	0.2369		7,971.861 3
Total	**3.3221**	**2.2544**	**26.8185**	**0.0800**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,965.940 1**	**7,965.940 1**	**0.2369**		**7,971.861 3**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3221	2.2544	26.8185	0.0800	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,965.940 1	7,965.940 1	0.2369		7,971.861 3
Total	**3.3221**	**2.2544**	**26.8185**	**0.0800**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,965.940 1**	**7,965.940 1**	**0.2369**		**7,971.861 3**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1223	2.0461	24.6745	0.0766	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,636.760 5	7,636.760 5	0.2127		7,642.076 8
Total	**3.1223**	**2.0461**	**24.6745**	**0.0766**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,636.760 5**	**7,636.760 5**	**0.2127**		**7,642.076 8**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1223	2.0461	24.6745	0.0766	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,636.760 5	7,636.760 5	0.2127		7,642.076 8
Total	**3.1223**	**2.0461**	**24.6745**	**0.0766**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,636.760 5**	**7,636.760 5**	**0.2127**		**7,642.076 8**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9360	1.8594	22.8671	0.0740	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		7,374.760 7	7,374.760 7	0.1926		7,379.576 3
Total	**2.9360**	**1.8594**	**22.8671**	**0.0740**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**7,374.760 7**	**7,374.760 7**	**0.1926**		**7,379.576 3**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9360	1.8594	22.8671	0.0740	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		7,374.7607	7,374.7607	0.1926		7,379.5763
Total	**2.9360**	**1.8594**	**22.8671**	**0.0740**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**7,374.7607**	**7,374.7607**	**0.1926**		**7,379.5763**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7493	1.6938	21.2785	0.0716	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		7,142.345 3	7,142.345 3	0.1753		7,146.727 4
Total	**2.7493**	**1.6938**	**21.2785**	**0.0716**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**7,142.345 3**	**7,142.345 3**	**0.1753**		**7,146.727 4**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7493	1.6938	21.2785	0.0716	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		7,142.345 3	7,142.345 3	0.1753		7,146.727 4
Total	**2.7493**	**1.6938**	**21.2785**	**0.0716**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**7,142.345 3**	**7,142.345 3**	**0.1753**		**7,146.727 4**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5517	1.5389	19.7466	0.0696	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,936.052 6	6,936.052 6	0.1585		6,940.015 1
Total	**2.5517**	**1.5389**	**19.7466**	**0.0696**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,936.052 6**	**6,936.052 6**	**0.1585**		**6,940.015 1**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5517	1.5389	19.7466	0.0696	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,936.0526	6,936.0526	0.1585		6,940.0151
Total	**2.5517**	**1.5389**	**19.7466**	**0.0696**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,936.0526**	**6,936.0526**	**0.1585**		**6,940.0151**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3557	1.3943	18.3608	0.0677	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,753.4510	6,753.4510	0.1433		6,757.0326
Total	**2.3557**	**1.3943**	**18.3608**	**0.0677**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,753.4510**	**6,753.4510**	**0.1433**		**6,757.0326**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3557	1.3943	18.3608	0.0677	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,753.4510	6,753.4510	0.1433		6,757.0326
Total	**2.3557**	**1.3943**	**18.3608**	**0.0677**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,753.4510**	**6,753.4510**	**0.1433**		**6,757.0326**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1473	1.2541	17.0151	0.0661	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,592.1781	6,592.1781	0.1286		6,595.3919
Total	**2.1473**	**1.2541**	**17.0151**	**0.0661**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,592.1781**	**6,592.1781**	**0.1286**		**6,595.3919**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1473	1.2541	17.0151	0.0661	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,592.1781	6,592.1781	0.1286		6,595.3919
Total	**2.1473**	**1.2541**	**17.0151**	**0.0661**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,592.1781**	**6,592.1781**	**0.1286**		**6,595.3919**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9617	1.1331	15.8430	0.0646	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,450.6606	6,450.6606	0.1158		6,453.5545
Total	**1.9617**	**1.1331**	**15.8430**	**0.0646**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,450.6606**	**6,450.6606**	**0.1158**		**6,453.5545**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9617	1.1331	15.8430	0.0646	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,450.660 6	6,450.660 6	0.1158		6,453.554 5
Total	**1.9617**	**1.1331**	**15.8430**	**0.0646**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,450.660 6**	**6,450.660 6**	**0.1158**		**6,453.554 5**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8027	1.0308	14.8460	0.0634	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		6,327.171 4	6,327.171 4	0.1048		6,329.792 4
Total	**1.8027**	**1.0308**	**14.8460**	**0.0634**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**6,327.171 4**	**6,327.171 4**	**0.1048**		**6,329.792 4**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8027	1.0308	14.8460	0.0634	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		6,327.1714	6,327.1714	0.1048		6,329.7924
Total	**1.8027**	**1.0308**	**14.8460**	**0.0634**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**6,327.1714**	**6,327.1714**	**0.1048**		**6,329.7924**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6705	0.9478	13.9325	0.0623	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		6,219.4196	6,219.4196	0.0949		6,221.7915
Total	**1.6705**	**0.9478**	**13.9325**	**0.0623**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**6,219.4196**	**6,219.4196**	**0.0949**		**6,221.7915**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6705	0.9478	13.9325	0.0623	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		6,219.4196	6,219.4196	0.0949		6,221.7915
Total	**1.6705**	**0.9478**	**13.9325**	**0.0623**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**6,219.4196**	**6,219.4196**	**0.0949**		**6,221.7915**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.4752	6,126.4752	0.0862		6,128.6296
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.4752**	**6,126.4752**	**0.0862**		**6,128.6296**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5535	0.8821	13.1359	0.0614	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		6,126.475 2	6,126.475 2	0.0862		6,128.629 6
Total	**1.5535**	**0.8821**	**13.1359**	**0.0614**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**6,126.475 2**	**6,126.475 2**	**0.0862**		**6,128.629 6**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239		2,937.9648	2,937.9648	0.0992		2,940.4445
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**		**2,937.9648**	**2,937.9648**	**0.0992**		**2,940.4445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1549	0.6752	10.7838	0.0584	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,833.9404	5,833.9404	0.0610		5,835.4646
Total	**1.1549**	**0.6752**	**10.7838**	**0.0584**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,833.9404**	**5,833.9404**	**0.0610**		**5,835.4646**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239	0.0000	2,937.9648	2,937.9648	0.0992		2,940.4445
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.0992**		**2,940.4445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1549	0.6752	10.7838	0.0584	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,833.9404	5,833.9404	0.0610		5,835.4646
Total	**1.1549**	**0.6752**	**10.7838**	**0.0584**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,833.9404**	**5,833.9404**	**0.0610**		**5,835.4646**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0611**	**0.0476**	**0.5250**	**1.2900e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**128.2544**	**128.2544**	**5.0500e-003**		**128.3808**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0611**	**0.0476**	**0.5250**	**1.2900e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**128.2544**	**128.2544**	**5.0500e-003**		**128.3808**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7825	180.3940	44.9595	0.4582	10.8707	0.5501	11.4208	3.1288	0.5262	3.6549		48,223.7395	48,223.7395	2.0372		48,274.6696
Worker	22.1103	17.2293	189.9787	0.4664	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		46,411.0058	46,411.0058	1.8288		46,456.7245
Total	**27.8928**	**197.6232**	**234.9382**	**0.9246**	**55.4604**	**0.9225**	**56.3829**	**14.9561**	**0.8695**	**15.8256**		**94,634.7454**	**94,634.7454**	**3.8660**		**94,731.3941**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7825	180.3940	44.9595	0.4582	10.8707	0.5501	11.4208	3.1288	0.5262	3.6549		48,223.7395	48,223.7395	2.0372		48,274.6696
Worker	22.1103	17.2293	189.9787	0.4664	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		46,411.0058	46,411.0058	1.8288		46,456.7245
Total	**27.8928**	**197.6232**	**234.9382**	**0.9246**	**55.4604**	**0.9225**	**56.3829**	**14.9561**	**0.8695**	**15.8256**		**94,634.7454**	**94,634.7454**	**3.8660**		**94,731.3941**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2973	170.8573	40.6662	0.4543	10.8717	0.4779	11.3496	3.1291	0.4571	3.5862		47,824.5666	47,824.5666	1.9700		47,873.8156
Worker	20.4952	15.4406	173.5595	0.4498	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		44,777.2407	44,777.2407	1.6363		44,818.1476
Total	**25.7925**	**186.2979**	**214.2257**	**0.9041**	**55.4614**	**0.8369**	**56.2983**	**14.9564**	**0.7880**	**15.7444**		**92,601.8072**	**92,601.8072**	**3.6062**		**92,691.9633**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2973	170.8573	40.6662	0.4543	10.8717	0.4779	11.3496	3.1291	0.4571	3.5862		47,824.5666	47,824.5666	1.9700		47,873.8156
Worker	20.4952	15.4406	173.5595	0.4498	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		44,777.2407	44,777.2407	1.6363		44,818.1476
Total	**25.7925**	**186.2979**	**214.2257**	**0.9041**	**55.4614**	**0.8369**	**56.2983**	**14.9564**	**0.7880**	**15.7444**		**92,601.8072**	**92,601.8072**	**3.6062**		**92,691.9633**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9928	140.9499	35.3320	0.4462	10.8727	0.2090	11.0817	3.1295	0.1998	3.3293		46,988.3521	46,988.3521	1.6076		47,028.5432
Worker	19.0137	13.8421	158.3035	0.4330	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		43,117.7144	43,117.7144	1.4612		43,154.2442
Total	**23.0066**	**154.7920**	**193.6355**	**0.8791**	**55.4624**	**0.5565**	**56.0189**	**14.9568**	**0.5201**	**15.4769**		**90,106.0665**	**90,106.0665**	**3.0688**		**90,182.7873**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9928	140.9499	35.3320	0.4462	10.8727	0.2090	11.0817	3.1295	0.1998	3.3293		46,988.3521	46,988.3521	1.6076		47,028.5432
Worker	19.0137	13.8421	158.3035	0.4330	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		43,117.7144	43,117.7144	1.4612		43,154.2442
Total	**23.0066**	**154.7920**	**193.6355**	**0.8791**	**55.4624**	**0.5565**	**56.0189**	**14.9568**	**0.5201**	**15.4769**		**90,106.0665**	**90,106.0665**	**3.0688**		**90,182.7873**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.698 9	2,555.698 9	0.6044		2,570.807 7
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.698 9**	**2,555.698 9**	**0.6044**		**2,570.807 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7766	137.7640	32.9097	0.4428	10.8736	0.1942	11.0678	3.1298	0.1857	3.3155		46,645.91 39	46,645.91 39	1.5841		46,685.51 58
Worker	17.7102	12.4500	145.4118	0.4162	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		41,458.03 27	41,458.03 27	1.3100		41,490.78 23
Total	**21.4868**	**150.2140**	**178.3216**	**0.8590**	**55.4633**	**0.5310**	**55.9944**	**14.9571**	**0.4960**	**15.4531**		**88,103.94 66**	**88,103.94 66**	**2.8941**		**88,176.29 81**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7766	137.7640	32.9097	0.4428	10.8736	0.1942	11.0678	3.1298	0.1857	3.3155		46,645.9139	46,645.9139	1.5841		46,685.5158
Worker	17.7102	12.4500	145.4118	0.4162	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		41,458.0327	41,458.0327	1.3100		41,490.7823
Total	**21.4868**	**150.2140**	**178.3216**	**0.8590**	**55.4633**	**0.5310**	**55.9944**	**14.9571**	**0.4960**	**15.4531**		**88,103.9466**	**88,103.9466**	**2.8941**		**88,176.2981**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5916	134.9108	30.9659	0.4397	10.8745	0.1807	11.0551	3.1301	0.1727	3.3028		46,324.0150	46,324.0150	1.5607		46,363.0325
Worker	16.6042	11.2680	134.0430	0.3996	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		39,815.0304	39,815.0304	1.1838		39,844.6255
Total	**20.1957**	**146.1788**	**165.0089**	**0.8393**	**55.4642**	**0.5103**	**55.9745**	**14.9574**	**0.4763**	**15.4337**		**86,139.0454**	**86,139.0454**	**2.7445**		**86,207.6580**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5916	134.9108	30.9659	0.4397	10.8745	0.1807	11.0551	3.1301	0.1727	3.3028		46,324.01 50	46,324.01 50	1.5607		46,363.03 25
Worker	16.6042	11.2680	134.0430	0.3996	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		39,815.03 04	39,815.03 04	1.1838		39,844.62 55
Total	**20.1957**	**146.1788**	**165.0089**	**0.8393**	**55.4642**	**0.5103**	**55.9745**	**14.9574**	**0.4763**	**15.4337**		**86,139.04 54**	**86,139.04 54**	**2.7445**		**86,207.65 80**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4529	132.5728	29.5872	0.4373	10.8750	0.1710	11.0461	3.1303	0.1635	3.2938		46,083.9365	46,083.9365	1.5408		46,122.4573
Worker	15.6058	10.2268	123.3270	0.3830	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		38,169.7383	38,169.7383	1.0629		38,196.3100
Total	**19.0587**	**142.7996**	**152.9142**	**0.8203**	**55.4648**	**0.4871**	**55.9519**	**14.9576**	**0.4546**	**15.4122**		**84,253.6748**	**84,253.6748**	**2.6037**		**84,318.7673**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4529	132.5728	29.5872	0.4373	10.8750	0.1710	11.0461	3.1303	0.1635	3.2938		46,083.9365	46,083.9365	1.5408		46,122.4573
Worker	15.6058	10.2268	123.3270	0.3830	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		38,169.7383	38,169.7383	1.0629		38,196.3100
Total	**19.0587**	**142.7996**	**152.9142**	**0.8203**	**55.4648**	**0.4871**	**55.9519**	**14.9576**	**0.4546**	**15.4122**		**84,253.6748**	**84,253.6748**	**2.6037**		**84,318.7673**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3330	130.4343	28.3423	0.4353	10.8756	0.1624	11.0380	3.1305	0.1553	3.2858		45,875.40 40	45,875.40 40	1.5218		45,913.44 82
Worker	14.6746	9.2934	114.2931	0.3698	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		36,860.22 22	36,860.22 22	0.9628		36,884.29 11
Total	**18.0076**	**139.7278**	**142.6355**	**0.8050**	**55.4653**	**0.4601**	**55.9254**	**14.9578**	**0.4292**	**15.3870**		**82,735.62 62**	**82,735.62 62**	**2.4845**		**82,797.73 93**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3330	130.4343	28.3423	0.4353	10.8756	0.1624	11.0380	3.1305	0.1553	3.2858		45,875.4040	45,875.4040	1.5218		45,913.4482
Worker	14.6746	9.2934	114.2931	0.3698	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		36,860.2222	36,860.2222	0.9628		36,884.2911
Total	**18.0076**	**139.7278**	**142.6355**	**0.8050**	**55.4653**	**0.4601**	**55.9254**	**14.9578**	**0.4292**	**15.3870**		**82,735.6262**	**82,735.6262**	**2.4845**		**82,797.7393**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2342	128.6371	27.4589	0.4335	10.8760	0.1547	11.0307	3.1307	0.1479	3.2786		45,700.83 56	45,700.83 56	1.5003		45,738.34 30
Worker	13.7412	8.4657	106.3534	0.3580	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		35,698.57 31	35,698.57 31	0.8761		35,720.47 56
Total	**16.9754**	**137.1028**	**133.8123**	**0.7916**	**55.4658**	**0.4317**	**55.8975**	**14.9580**	**0.4028**	**15.3607**		**81,399.40 87**	**81,399.40 87**	**2.3764**		**81,458.81 86**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2342	128.6371	27.4589	0.4335	10.8760	0.1547	11.0307	3.1307	0.1479	3.2786		45,700.83 56	45,700.83 56	1.5003		45,738.34 30
Worker	13.7412	8.4657	106.3534	0.3580	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		35,698.57 31	35,698.57 31	0.8761		35,720.47 56
Total	**16.9754**	**137.1028**	**133.8123**	**0.7916**	**55.4658**	**0.4317**	**55.8975**	**14.9580**	**0.4028**	**15.3607**		**81,399.40 87**	**81,399.40 87**	**2.3764**		**81,458.81 86**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1521	126.9994	26.7148	0.4321	10.8764	0.1477	11.0241	3.1308	0.1412	3.2720		45,550.15 07	45,550.15 07	1.4835		45,587.23 74
Worker	12.7536	7.6917	98.6969	0.3476	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		34,667.48 93	34,667.48 93	0.7922		34,687.29 47
Total	**15.9057**	**134.6911**	**125.4117**	**0.7797**	**55.4662**	**0.4055**	**55.8716**	**14.9581**	**0.3783**	**15.3364**		**80,217.64 00**	**80,217.64 00**	**2.2757**		**80,274.53 22**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1521	126.9994	26.7148	0.4321	10.8764	0.1477	11.0241	3.1308	0.1412	3.2720		45,550.1507	45,550.1507	1.4835		45,587.2374
Worker	12.7536	7.6917	98.6969	0.3476	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		34,667.4893	34,667.4893	0.7922		34,687.2947
Total	**15.9057**	**134.6911**	**125.4117**	**0.7797**	**55.4662**	**0.4055**	**55.8716**	**14.9581**	**0.3783**	**15.3364**		**80,217.6400**	**80,217.6400**	**2.2757**		**80,274.5322**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0858	125.6027	26.1580	0.4309	10.8768	0.1418	11.0186	3.1310	0.1356	3.2665		45,435.6328	45,435.6328	1.4653		45,472.2661
Worker	11.7741	6.9691	91.7703	0.3384	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		33,754.8175	33,754.8175	0.7161		33,772.7189
Total	**14.8598**	**132.5718**	**117.9284**	**0.7693**	**55.4665**	**0.3816**	**55.8482**	**14.9583**	**0.3561**	**15.3144**		**79,190.4503**	**79,190.4503**	**2.1814**		**79,244.9850**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0858	125.6027	26.1580	0.4309	10.8768	0.1418	11.0186	3.1310	0.1356	3.2665		45,435.6328	45,435.6328	1.4653		45,472.2661
Worker	11.7741	6.9691	91.7703	0.3384	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		33,754.8175	33,754.8175	0.7161		33,772.7189
Total	**14.8598**	**132.5718**	**117.9284**	**0.7693**	**55.4665**	**0.3816**	**55.8482**	**14.9583**	**0.3561**	**15.3144**		**79,190.4503**	**79,190.4503**	**2.1814**		**79,244.9850**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0307	124.4014	25.6902	0.4301	10.8772	0.1368	11.0140	3.1311	0.1308	3.2619		45,352.60 57	45,352.60 57	1.4524		45,388.91 57
Worker	10.7326	6.2684	85.0440	0.3302	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		32,948.75 01	32,948.75 01	0.6425		32,964.81 32
Total	**13.7633**	**130.6698**	**110.7343**	**0.7604**	**55.4669**	**0.3599**	**55.8268**	**14.9584**	**0.3360**	**15.2944**		**78,301.35 58**	**78,301.35 58**	**2.0949**		**78,353.72 89**

3.8 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0307	124.4014	25.6902	0.4301	10.8772	0.1368	11.0140	3.1311	0.1308	3.2619		45,352.60 57	45,352.60 57	1.4524		45,388.91 57
Worker	10.7326	6.2684	85.0440	0.3302	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		32,948.75 01	32,948.75 01	0.6425		32,964.81 32
Total	**13.7633**	**130.6698**	**110.7343**	**0.7604**	**55.4669**	**0.3599**	**55.8268**	**14.9584**	**0.3360**	**15.2944**		**78,301.35 58**	**78,301.35 58**	**2.0949**		**78,353.72 89**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9852	123.3475	25.3394	0.4297	10.8775	0.1323	11.0097	3.1312	0.1264	3.2576		45,304.3944	45,304.3944	1.4399		45,340.3906
Worker	9.8049	5.6634	79.1857	0.3231	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		32,241.4231	32,241.4231	0.5786		32,255.8875
Total	**12.7901**	**129.0109**	**104.5251**	**0.7527**	**55.4672**	**0.3401**	**55.8073**	**14.9585**	**0.3176**	**15.2761**		**77,545.8175**	**77,545.8175**	**2.0184**		**77,596.2780**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9852	123.3475	25.3394	0.4297	10.8775	0.1323	11.0097	3.1312	0.1264	3.2576		45,304.39 44	45,304.39 44	1.4399		45,340.39 06
Worker	9.8049	5.6634	79.1857	0.3231	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		32,241.42 31	32,241.42 31	0.5786		32,255.88 75
Total	**12.7901**	**129.0109**	**104.5251**	**0.7527**	**55.4672**	**0.3401**	**55.8073**	**14.9585**	**0.3176**	**15.2761**		**77,545.81 75**	**77,545.81 75**	**2.0184**		**77,596.27 80**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9499	122.4228	25.0647	0.4294	10.8777	0.1282	11.0059	3.1313	0.1225	3.2538		45,280.0911	45,280.0911	1.4304		45,315.8513
Worker	9.0101	5.1523	74.2027	0.3168	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		31,624.2045	31,624.2045	0.5240		31,637.3051
Total	**11.9600**	**127.5751**	**99.2675**	**0.7462**	**55.4675**	**0.3223**	**55.7898**	**14.9586**	**0.3011**	**15.2596**		**76,904.2956**	**76,904.2956**	**1.9544**		**76,953.1564**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9499	122.4228	25.0647	0.4294	10.8777	0.1282	11.0059	3.1313	0.1225	3.2538		45,280.091 1	45,280.091 1	1.4304		45,315.85 13
Worker	9.0101	5.1523	74.2027	0.3168	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		31,624.20 45	31,624.20 45	0.5240		31,637.30 51
Total	**11.9600**	**127.5751**	**99.2675**	**0.7462**	**55.4675**	**0.3223**	**55.7898**	**14.9586**	**0.3011**	**15.2596**		**76,904.29 56**	**76,904.29 56**	**1.9544**		**76,953.15 64**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9175	121.6274	24.8011	0.4293	10.8780	0.1245	11.0025	3.1314	0.1190	3.2504		45,273.2329	45,273.2329	1.4215		45,308.7711
Worker	8.3495	4.7372	69.6370	0.3114	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		31,085.6444	31,085.6444	0.4742		31,097.4992
Total	**11.2669**	**126.3646**	**94.4382**	**0.7407**	**55.4677**	**0.3060**	**55.7737**	**14.9587**	**0.2860**	**15.2446**		**76,358.8773**	**76,358.8773**	**1.8957**		**76,406.2703**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9175	121.6274	24.8011	0.4293	10.8780	0.1245	11.0025	3.1314	0.1190	3.2504		45,273.2329	45,273.2329	1.4215		45,308.7711
Worker	8.3495	4.7372	69.6370	0.3114	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		31,085.6444	31,085.6444	0.4742		31,097.4992
Total	**11.2669**	**126.3646**	**94.4382**	**0.7407**	**55.4677**	**0.3060**	**55.7737**	**14.9587**	**0.2860**	**15.2446**		**76,358.8773**	**76,358.8773**	**1.8957**		**76,406.2703**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.78 85	45,276.78 85	1.4155		45,312.17 62
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.09 34	30,621.09 34	0.4307		30,631.86 13
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.88 19**	**75,897.88 19**	**1.8462**		**75,944.03 74**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8895	120.9709	24.5768	0.4294	10.8782	0.1215	10.9997	3.1315	0.1161	3.2476		45,276.7885	45,276.7885	1.4155		45,312.1762
Worker	7.7646	4.4088	65.6555	0.3067	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		30,621.0934	30,621.0934	0.4307		30,631.8613
Total	**10.6541**	**125.3797**	**90.2323**	**0.7360**	**55.4679**	**0.2915**	**55.7594**	**14.9588**	**0.2725**	**15.2313**		**75,897.8819**	**75,897.8819**	**1.8462**		**75,944.0374**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8186	119.0611	23.8512	0.4310	10.8789	0.1131	10.9919	3.1317	0.1081	3.2398		45,450.2292	45,450.2292	1.3970		45,485.1550
Worker	5.7725	3.3750	53.8991	0.2919	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		29,158.9579	29,158.9579	0.3047		29,166.5761
Total	**8.5910**	**122.4360**	**77.7503**	**0.7229**	**55.4686**	**0.2439**	**55.7125**	**14.9590**	**0.2284**	**15.1874**		**74,609.1871**	**74,609.1871**	**1.7018**		**74,651.7310**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8186	119.0611	23.8512	0.4310	10.8789	0.1131	10.9919	3.1317	0.1081	3.2398		45,450.2292	45,450.2292	1.3970		45,485.1550
Worker	5.7725	3.3750	53.8991	0.2919	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		29,158.9579	29,158.9579	0.3047		29,166.5761
Total	**8.5910**	**122.4360**	**77.7503**	**0.7229**	**55.4686**	**0.2439**	**55.7125**	**14.9590**	**0.2284**	**15.1874**		**74,609.1871**	**74,609.1871**	**1.7018**		**74,651.7310**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	39.2708	250.6348	394.4230	2.2178	234.6284	0.7861	235.4145	62.7663	0.7312	63.4975		226,340.7946	226,340.7946	7.4210		226,526.3202
Unmitigated	42.2596	261.5310	449.4275	2.5477	274.4191	0.9012	275.3203	73.4109	0.8383	74.2492		259,901.9775	259,901.9775	8.2801		260,108.9807

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Library	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
NaturalGas Unmitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11623.6	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6236	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Unmitigated	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3870					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.308 4	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.51 02	16,009.411 8	31,682.92 20	19.2095	1.3197	32,556.42 41
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**955.3325**	**27.9542**	**1,364.929 2**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.51 02**	**16,602.09 18**	**32,275.60 20**	**19.7752**	**1.3197**	**33,163.24 80**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2614					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**145.1233**	**22.4920**	**335.5832**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7389**	**24,479.7389**	**1.0236**	**0.4379**	**24,635.8315**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2050) - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.87	125,000.00	0
Elementary School	2,752.00	Student	20.00	230,076.47	0
High School	526.00	Student	18.00	69,779.67	0
Junior High School	754.00	Student	10.00	88,641.51	0
Library	22.00	1000sqft	0.51	22,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	2.18	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	168.75	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	389.61	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	4.59	200,000.00	0
Supermarket	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Utilities & Parks/Open Space were considered one land use (City Park) for sake of modeling (148 net acres). School sites = 48 acres. Pop estimated at 3.67 persons/du.

Construction Phase - Construction phasing based on information provided by the City of Salinas, and based on project size. Simplified schedule for the purposes of modeling.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips -

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation - Install low-flow indoor water use equipment (faucets, toilets, showers); Use water-efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	880.00	4,960.00
tblConstructionPhase	NumDays	12,400.00	5,086.00
tblConstructionPhase	NumDays	800.00	21.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	67.00
tblGrading	AcresOfGrading	162.50	760.44
tblGrading	AcresOfGrading	167.50	0.00
tblLandUse	LotAcreage	5.28	20.00
tblLandUse	LotAcreage	1.60	18.00
tblLandUse	LotAcreage	2.03	10.00
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblTripsAndVMT	WorkerTripNumber	35.00	0.00
tblTripsAndVMT	WorkerTripNumber	40.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,086.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9305	83.5552	55.0348	0.1037	18.6037	3.8351	22.4387	10.0683	3.5441	13.6124	0.0000	10,043.4859	10,043.4859	3.0130	0.0000	10,118.8101
2021	53.0080	239.8781	308.3075	1.0219	72.1351	3.8549	74.8875	19.2255	3.5736	21.8066	0.0000	104,004.6325	104,004.6325	5.6675	0.0000	104,146.3210
2022	50.0411	223.5427	283.2278	0.9992	72.1361	2.3908	74.5268	19.2259	2.2420	21.4679	0.0000	101,766.7489	101,766.7489	5.3696	0.0000	101,900.9880
2023	46.5395	188.4594	257.8330	0.9723	72.1370	1.9136	74.0506	19.2262	1.7893	21.0155	0.0000	99,081.5920	99,081.5920	4.7544	0.0000	99,200.4530
2024	44.4914	181.3458	239.4893	0.9503	72.1380	1.7472	73.8852	19.2265	1.6327	20.8592	0.0000	96,892.2277	96,892.2277	4.5498	0.0000	97,005.9730
2025	42.6969	174.6110	223.5834	0.9286	72.1388	1.5789	73.7177	19.2268	1.4747	20.7016	0.0000	94,741.7838	94,741.7838	4.3759	0.0000	94,851.1822
2026	41.2963	170.6041	209.3289	0.9077	72.1394	1.5526	73.6920	19.2270	1.4501	20.6771	0.0000	92,662.0779	92,662.0779	4.2163	0.0000	92,767.4857
2027	39.9910	166.9663	197.1380	0.8908	72.1399	1.5215	73.6614	19.2272	1.4209	20.6481	0.0000	90,986.6651	90,986.6651	4.0806	0.0000	91,088.6799
2028	38.6842	163.8526	186.6880	0.8759	72.1404	1.4885	73.6289	19.2274	1.3902	20.6176	0.0000	89,511.2962	89,511.2962	3.9583	0.0000	89,610.2531
2029	37.3146	160.9848	176.7027	0.8628	72.1408	1.4580	73.5988	19.2276	1.3618	20.5893	0.0000	88,204.3529	88,204.3529	3.8438	0.0000	88,300.4480
2030	36.3387	152.1541	169.1346	0.8605	72.1412	0.9317	73.0729	19.2277	0.9023	20.1299	0.0000	87,853.8755	87,853.8755	2.6591	0.0000	87,920.3538
2031	34.9117	149.8405	160.5497	0.8505	72.1415	0.9064	73.0479	19.2278	0.8788	20.1066	0.0000	86,861.1181	86,861.1181	2.5611	0.0000	86,925.1453
2032	33.6450	147.8240	153.1478	0.8419	72.1418	0.8833	73.0252	19.2279	0.8574	20.0853	0.0000	86,011.6231	86,011.6231	2.4745	0.0000	86,073.4857

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2033	32.5657	146.0824	146.8880	0.8345	72.1421	0.8625	73.0046	19.2280	0.8381	20.0661	0.0000	85,285.2729	85,285.2729	2.4023	0.0000	85,345.3293
2034	31.6773	144.6179	141.1524	0.8282	72.1423	0.8435	72.9859	19.2281	0.8204	20.0486	0.0000	84,663.7668	84,663.7668	2.3360	0.0000	84,722.1673
2035	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2036	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2037	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2038	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2039	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2040	27.7386	135.1877	121.2467	0.8075	72.1432	0.4692	72.6124	19.2284	0.4515	19.6800	0.0000	82,626.7484	82,626.7484	2.0685	0.0000	82,678.4601
Maximum	**53.0080**	**239.8781**	**308.3075**	**1.0219**	**72.1432**	**3.8549**	**74.8875**	**19.2284**	**3.5736**	**21.8066**	**0.0000**	**104,004.6325**	**104,004.6325**	**5.6675**	**0.0000**	**104,146.3210**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9305	83.5552	55.0348	0.1037	8.6672	3.8351	12.5023	4.6064	3.5441	8.1505	0.0000	10,043.4859	10,043.4859	3.0130	0.0000	10,118.8101
2021	53.0080	239.8781	308.3075	1.0219	72.1351	3.8549	74.8875	19.2255	3.5736	21.8066	0.0000	104,004.6325	104,004.6325	5.6675	0.0000	104,146.3210
2022	50.0411	223.5427	283.2278	0.9992	72.1361	2.3908	74.5268	19.2259	2.2420	21.4679	0.0000	101,766.7489	101,766.7489	5.3696	0.0000	101,900.9880

Salinas CASP Model Full Buildout (2050) - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	46.5395	188.4594	257.8330	0.9723	72.1370	1.9136	74.0506	19.2262	1.7893	21.0155	0.0000	99,081.5920	99,081.5920	4.7544	0.0000	99,200.4530
2024	44.4914	181.3458	239.4893	0.9503	72.1380	1.7472	73.8852	19.2265	1.6327	20.8592	0.0000	96,892.2277	96,892.2277	4.5498	0.0000	97,005.9730
2025	42.6969	174.6110	223.5834	0.9286	72.1388	1.5789	73.7177	19.2268	1.4747	20.7016	0.0000	94,741.7838	94,741.7838	4.3759	0.0000	94,851.1822
2026	41.2963	170.6041	209.3289	0.9077	72.1394	1.5526	73.6920	19.2270	1.4501	20.6771	0.0000	92,662.0779	92,662.0779	4.2163	0.0000	92,767.4857
2027	39.9910	166.9663	197.1380	0.8908	72.1399	1.5215	73.6614	19.2272	1.4209	20.6481	0.0000	90,986.6651	90,986.6651	4.0806	0.0000	91,088.6798
2028	38.6842	163.8526	186.6880	0.8759	72.1404	1.4885	73.6289	19.2274	1.3902	20.6176	0.0000	89,511.2961	89,511.2961	3.9583	0.0000	89,610.2531
2029	37.3146	160.9848	176.7027	0.8628	72.1408	1.4580	73.5988	19.2276	1.3618	20.5893	0.0000	88,204.3529	88,204.3529	3.8438	0.0000	88,300.4480
2030	36.3387	152.1541	169.1346	0.8605	72.1412	0.9317	73.0729	19.2277	0.9023	20.1299	0.0000	87,853.8755	87,853.8755	2.6591	0.0000	87,920.3538
2031	34.9117	149.8405	160.5497	0.8505	72.1415	0.9064	73.0479	19.2278	0.8788	20.1066	0.0000	86,861.1181	86,861.1181	2.5611	0.0000	86,925.1453
2032	33.6450	147.8240	153.1478	0.8419	72.1418	0.8833	73.0252	19.2279	0.8574	20.0853	0.0000	86,011.6231	86,011.6231	2.4745	0.0000	86,073.4856
2033	32.5657	146.0824	146.8880	0.8345	72.1421	0.8625	73.0046	19.2280	0.8381	20.0661	0.0000	85,285.2729	85,285.2729	2.4023	0.0000	85,345.3293
2034	31.6773	144.6179	141.1524	0.8282	72.1423	0.8435	72.9859	19.2281	0.8204	20.0486	0.0000	84,663.7668	84,663.7668	2.3360	0.0000	84,722.1673
2035	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2036	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2037	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2038	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2039	30.5452	140.3116	136.0902	0.8229	72.1425	0.6152	72.7577	19.2282	0.5934	19.8216	0.0000	84,136.0362	84,136.0362	2.2487	0.0000	84,192.2523
2040	27.7386	135.1877	121.2467	0.8075	72.1432	0.4692	72.6124	19.2284	0.4515	19.6800	0.0000	82,626.7484	82,626.7484	2.0685	0.0000	82,678.4601

Maximum	**53.0080**	**239.8781**	**308.3075**	**1.0219**	**72.1432**	**3.8549**	**74.8875**	**19.2284**	**3.5736**	**21.8066**	**0.0000**	**104,004.6325**	**104,004.6325**	**5.6675**	**0.0000**	**104,146.3210**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.68**	**0.00**	**0.67**	**1.38**	**0.00**	**1.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	38.3185	265.9660	458.2669	2.4150	274.4191	0.9034	275.3226	73.4109	0.8405	74.2514		246,458.7471	246,458.7471	8.6709		246,675.5191
Total	**996.5162**	**318.5790**	**1,834.8946**	**4.5848**	**274.4191**	**151.4683**	**425.8874**	**73.4109**	**151.4053**	**224.8162**	**15,673.5102**	**294,317.5080**	**309,991.0182**	**29.0452**	**1.8927**	**311,281.1789**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Energy	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
Mobile	35.2596	253.8370	405.9042	2.1001	234.6284	0.7884	235.4168	62.7663	0.7334	63.4997		214,392.0721	214,392.0721	7.8073		214,587.2550
Total	**183.2480**	**300.9878**	**753.1858**	**2.3932**	**234.6284**	**6.1048**	**240.7331**	**62.7663**	**6.0497**	**68.8160**	**0.0000**	**270,128.4801**	**270,128.4801**	**9.4300**	**1.0110**	**270,665.4984**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	81.61	5.52	58.95	47.80	14.50	95.97	43.47	14.50	96.00	69.39	100.00	8.22	12.86	67.53	46.59	13.05

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/29/2020	5	21	
2	Site Preparation	Site Preparation	6/1/2020	9/1/2020	5	67	
3	Grading	Grading	9/2/2020	12/1/2020	5	65	
4	Underground Utilities	Trenching	12/2/2020	2/2/2021	5	45	
5	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	
6	Paving	Paving	2/3/2021	6/3/2021	5	87	
7	Building Construction	Building Construction	6/4/2021	11/30/2040	5	5086	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 760.44

Acres of Paving: 0

Residential Indoor: 10,009,575; Residential Outdoor: 3,336,525; Non-Residential Indoor: 1,140,746; Non-Residential Outdoor: 380,249; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	3	8.00	158	0.38
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	2	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilities	Cranes	1	7.00	231	0.29
Underground Utilities	Forklifts	3	8.00	89	0.20
Underground Utilities	Generator Sets	1	8.00	84	0.74
Underground Utilities	Rubber Tired Dozers	3	8.00	247	0.40
Underground Utilities	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Underground Utilities	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Underground Utilities	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Pavers	2	8.00	130	0.42
Architectural Coating	Paving Equipment	2	8.00	132	0.36
Architectural Coating	Rollers	2	8.00	80	0.38
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	35.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	14	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	1,086.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,428.00	1,607.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1292	0.0000	6.1292	0.9282	0.0000	0.9282			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**6.1292**	**1.6587**	**7.7879**	**0.9282**	**1.5419**	**2.4701**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2351	8.1878	1.7405	0.0217	0.4726	0.0323	0.5049	0.1295	0.0309	0.1603		2,301.367 6	2,301.367 6	0.0908		2,303.637 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.3072**	**8.2549**	**2.3076**	**0.0230**	**0.5958**	**0.0333**	**0.6292**	**0.1621**	**0.0318**	**0.1940**		**2,425.617 1**	**2,425.617 1**	**0.0962**		**2,428.022 3**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7582	0.0000	2.7582	0.4177	0.0000	0.4177			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**2.7582**	**1.6587**	**4.4169**	**0.4177**	**1.5419**	**1.9596**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2351	8.1878	1.7405	0.0217	0.4726	0.0323	0.5049	0.1295	0.0309	0.1603		2,301.3676	2,301.3676	0.0908		2,303.6377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.3072**	**8.2549**	**2.3076**	**0.0230**	**0.5958**	**0.0333**	**0.6292**	**0.1621**	**0.0318**	**0.1940**		**2,425.6171**	**2,425.6171**	**0.0962**		**2,428.0223**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418		9,753.570 2	9,753.570 2	3.0004		9,828.579 3
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**18.0663**	**3.8326**	**21.8989**	**9.9307**	**3.5418**	**13.4725**		**9,753.570 2**	**9,753.570 2**	**3.0004**		**9,828.579 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1682	0.1567	1.3233	2.9200e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		289.9157	289.9157	0.0126		290.2308
Total	**0.1682**	**0.1567**	**1.3233**	**2.9200e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**289.9157**	**289.9157**	**0.0126**		**290.2308**

3.3 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	7.7622	83.3985	53.7115	0.1008		3.8326	3.8326		3.5418	3.5418	0.0000	9,753.5702	9,753.5702	3.0004		9,828.5793
Total	**7.7622**	**83.3985**	**53.7115**	**0.1008**	**8.1298**	**3.8326**	**11.9624**	**4.4688**	**3.5418**	**8.0107**	**0.0000**	**9,753.5702**	**9,753.5702**	**3.0004**		**9,828.5793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1682	0.1567	1.3233	2.9200e-003	0.5374	2.4900e-003	0.5399	0.1376	2.2900e-003	0.1399		289.9157	289.9157	0.0126		290.2308
Total	**0.1682**	**0.1567**	**1.3233**	**2.9200e-003**	**0.5374**	**2.4900e-003**	**0.5399**	**0.1376**	**2.2900e-003**	**0.1399**		**289.9157**	**289.9157**	**0.0126**		**290.2308**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.4290	0.0000	18.4290	4.6499	0.0000	4.6499			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**18.4290**	**2.1739**	**20.6029**	**4.6499**	**2.0000**	**6.6499**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

3.4 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2930	0.0000	8.2930	2.0925	0.0000	2.0925			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.2930**	**2.1739**	**10.4669**	**2.0925**	**2.0000**	**4.0924**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

3.5 Underground Utilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720		6,238.1646	6,238.1646	1.8147		6,283.5320
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**		**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3846	0.3581	3.0247	6.6600e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		662.6644	662.6644	0.0288		663.3846
Total	**0.3846**	**0.3581**	**3.0247**	**6.6600e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**662.6644**	**662.6644**	**0.0288**		**663.3846**

3.5 Underground Utilities - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.1963	61.6034	38.3621	0.0649		3.3145	3.3145		3.0720	3.0720	0.0000	6,238.1646	6,238.1646	1.8147		6,283.5319
Total	**6.1963**	**61.6034**	**38.3621**	**0.0649**		**3.3145**	**3.3145**		**3.0720**	**3.0720**	**0.0000**	**6,238.1646**	**6,238.1646**	**1.8147**		**6,283.5319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3846	0.3581	3.0247	6.6600e-003	1.7995	5.6800e-003	1.8052	0.4547	5.2400e-003	0.4599		662.6644	662.6644	0.0288		663.3846
Total	**0.3846**	**0.3581**	**3.0247**	**6.6600e-003**	**1.7995**	**5.6800e-003**	**1.8052**	**0.4547**	**5.2400e-003**	**0.4599**		**662.6644**	**662.6644**	**0.0288**		**663.3846**

3.5 Underground Utilities - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822		6,239.0208	6,239.0208	1.8080		6,284.2216
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**		**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2216**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3546	0.3196	2.7456	6.4400e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		640.4597	640.4597	0.0256		641.1003
Total	**0.3546**	**0.3196**	**2.7456**	**6.4400e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**640.4597**	**640.4597**	**0.0256**		**641.1003**

3.5 Underground Utilities - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.7891	57.9292	37.7295	0.0649		3.0031	3.0031		2.7822	2.7822	0.0000	6,239.0208	6,239.0208	1.8080		6,284.2215
Total	**5.7891**	**57.9292**	**37.7295**	**0.0649**		**3.0031**	**3.0031**		**2.7822**	**2.7822**	**0.0000**	**6,239.0208**	**6,239.0208**	**1.8080**		**6,284.2215**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3546	0.3196	2.7456	6.4400e-003	1.7995	5.4900e-003	1.8050	0.4547	5.0600e-003	0.4598		640.4597	640.4597	0.0256		641.1003
Total	**0.3546**	**0.3196**	**2.7456**	**6.4400e-003**	**1.7995**	**5.4900e-003**	**1.8050**	**0.4547**	**5.0600e-003**	**0.4598**		**640.4597**	**640.4597**	**0.0256**		**641.1003**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176		2,488.6589	2,488.6589	0.7332		2,506.9882
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**		**2,488.6589**	**2,488.6589**	**0.7332**		**2,506.9882**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8136	4.3387	37.2710	0.0874	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		8,694.2399	8,694.2399	0.3479		8,702.9371
Total	**4.8136**	**4.3387**	**37.2710**	**0.0874**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**8,694.2399**	**8,694.2399**	**0.3479**		**8,702.9371**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.4745	14.4459	16.4708	0.0258		0.7718	0.7718		0.7176	0.7176	0.0000	2,488.6589	2,488.6589	0.7332		2,506.9882
Total	**16.0781**	**14.4459**	**16.4708**	**0.0258**		**0.7718**	**0.7718**		**0.7176**	**0.7176**	**0.0000**	**2,488.6589**	**2,488.6589**	**0.7332**		**2,506.9882**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.8136	4.3387	37.2710	0.0874	16.6746	0.0745	16.7491	4.2694	0.0687	4.3381		8,694.2399	8,694.2399	0.3479		8,702.9371
Total	**4.8136**	**4.3387**	**37.2710**	**0.0874**	**16.6746**	**0.0745**	**16.7491**	**4.2694**	**0.0687**	**4.3381**		**8,694.2399**	**8,694.2399**	**0.3479**		**8,702.9371**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042		2,489.1084	2,489.1084	0.7323		2,507.4165
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**		**2,489.1084**	**2,489.1084**	**0.7323**		**2,507.4165**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4650	3.8878	33.9376	0.0843	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,388.3011	8,388.3011	0.3105		8,396.0625
Total	**4.4650**	**3.8878**	**33.9376**	**0.0843**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,388.3011**	**8,388.3011**	**0.3105**		**8,396.0625**

3.6 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.3074	12.5334	16.3941	0.0258		0.6496	0.6496		0.6042	0.6042	0.0000	2,489.108 3	2,489.108 3	0.7323		2,507.416 5
Total	**15.9110**	**12.5334**	**16.3941**	**0.0258**		**0.6496**	**0.6496**		**0.6042**	**0.6042**	**0.0000**	**2,489.108 3**	**2,489.108 3**	**0.7323**		**2,507.416 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4650	3.8878	33.9376	0.0843	16.6746	0.0718	16.7464	4.2694	0.0662	4.3356		8,388.3011	8,388.3011	0.3105		8,396.062 5
Total	**4.4650**	**3.8878**	**33.9376**	**0.0843**	**16.6746**	**0.0718**	**16.7464**	**4.2694**	**0.0662**	**4.3356**		**8,388.301 1**	**8,388.301 1**	**0.3105**		**8,396.062 5**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402		2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**		**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1475	3.4842	30.8316	0.0811	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,077.546 0	8,077.546 0	0.2762		8,084.450 5
Total	**4.1475**	**3.4842**	**30.8316**	**0.0811**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,077.546 0**	**8,077.546 0**	**0.2762**		**8,084.450 5**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2244	11.4946	16.3953	0.0258		0.5810	0.5810		0.5402	0.5402	0.0000	2,489.032 2	2,489.032 2	0.7308		2,507.302 6
Total	**15.8280**	**11.4946**	**16.3953**	**0.0258**		**0.5810**	**0.5810**		**0.5402**	**0.5402**	**0.0000**	**2,489.032 2**	**2,489.032 2**	**0.7308**		**2,507.302 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1475	3.4842	30.8316	0.0811	16.6746	0.0695	16.7442	4.2694	0.0641	4.3335		8,077.546 0	8,077.546 0	0.2762		8,084.450 5
Total	**4.1475**	**3.4842**	**30.8316**	**0.0811**	**16.6746**	**0.0695**	**16.7442**	**4.2694**	**0.0641**	**4.3335**		**8,077.546 0**	**8,077.546 0**	**0.2762**		**8,084.450 5**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920		2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**		**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8711	3.1330	28.2324	0.0780	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		7,766.770 8	7,766.770 8	0.2467		7,772.939 1
Total	**3.8711**	**3.1330**	**28.2324**	**0.0780**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**7,766.770 8**	**7,766.770 8**	**0.2467**		**7,772.939 1**

3.6 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1689	10.7434	16.4359	0.0258		0.5294	0.5294		0.4920	0.4920	0.0000	2,488.995 3	2,488.995 3	0.7298		2,507.240 6
Total	**15.7725**	**10.7434**	**16.4359**	**0.0258**		**0.5294**	**0.5294**		**0.4920**	**0.4920**	**0.0000**	**2,488.995 3**	**2,488.995 3**	**0.7298**		**2,507.240 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8711	3.1330	28.2324	0.0780	16.6746	0.0674	16.7420	4.2694	0.0621	4.3315		7,766.770 8	7,766.770 8	0.2467		7,772.939 1
Total	**3.8711**	**3.1330**	**28.2324**	**0.0780**	**16.6746**	**0.0674**	**16.7420**	**4.2694**	**0.0621**	**4.3315**		**7,766.770 8**	**7,766.770 8**	**0.2467**		**7,772.939 1**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6366	2.8351	25.9695	0.0749	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,459.177 3	7,459.177 3	0.2225		7,464.739 1
Total	**3.6366**	**2.8351**	**25.9695**	**0.0749**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,459.177 3**	**7,459.177 3**	**0.2225**		**7,464.739 1**

3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6366	2.8351	25.9695	0.0749	16.6746	0.0660	16.7406	4.2694	0.0607	4.3302		7,459.177 3	7,459.177 3	0.2225		7,464.739 1
Total	**3.6366**	**2.8351**	**25.9695**	**0.0749**	**16.6746**	**0.0660**	**16.7406**	**4.2694**	**0.0607**	**4.3302**		**7,459.177 3**	**7,459.177 3**	**0.2225**		**7,464.739 1**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4281	2.5729	23.8531	0.0718	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,150.9891	7,150.9891	0.1994		7,155.9741
Total	**3.4281**	**2.5729**	**23.8531**	**0.0718**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,150.9891**	**7,150.9891**	**0.1994**		**7,155.9741**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4281	2.5729	23.8531	0.0718	16.6746	0.0632	16.7379	4.2694	0.0582	4.3277		7,150.989 1	7,150.989 1	0.1994		7,155.974 1
Total	**3.4281**	**2.5729**	**23.8531**	**0.0718**	**16.6746**	**0.0632**	**16.7379**	**4.2694**	**0.0582**	**4.3277**		**7,150.989 1**	**7,150.989 1**	**0.1994**		**7,155.974 1**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2321	2.3382	22.0549	0.0693	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		6,905.403 5	6,905.403 5	0.1802		6,909.909 2
Total	**3.2321**	**2.3382**	**22.0549**	**0.0693**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**6,905.403 5**	**6,905.403 5**	**0.1802**		**6,909.909 2**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2321	2.3382	22.0549	0.0693	16.6746	0.0596	16.7342	4.2694	0.0548	4.3243		6,905.403 5	6,905.403 5	0.1802		6,909.909 2
Total	**3.2321**	**2.3382**	**22.0549**	**0.0693**	**16.6746**	**0.0596**	**16.7342**	**4.2694**	**0.0548**	**4.3243**		**6,905.403 5**	**6,905.403 5**	**0.1802**		**6,909.909 2**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0321	2.1297	20.4794	0.0671	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		6,687.4487	6,687.4487	0.1638		6,691.5431
Total	**3.0321**	**2.1297**	**20.4794**	**0.0671**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**6,687.4487**	**6,687.4487**	**0.1638**		**6,691.5431**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.1932	2,488.1932	0.7291		2,506.4197
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.1932**	**2,488.1932**	**0.7291**		**2,506.4197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0321	2.1297	20.4794	0.0671	16.6746	0.0554	16.7301	4.2694	0.0510	4.3204		6,687.4487	6,687.4487	0.1638		6,691.5431
Total	**3.0321**	**2.1297**	**20.4794**	**0.0671**	**16.6746**	**0.0554**	**16.7301**	**4.2694**	**0.0510**	**4.3204**		**6,687.4487**	**6,687.4487**	**0.1638**		**6,691.5431**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366		2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**		**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8186	1.9343	18.9553	0.0651	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,493.833 0	6,493.833 0	0.1478		6,497.527 7
Total	**2.8186**	**1.9343**	**18.9553**	**0.0651**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,493.833 0**	**6,493.833 0**	**0.1478**		**6,497.527 7**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0860	9.7271	16.3871	0.0258		0.4700	0.4700		0.4366	0.4366	0.0000	2,488.193 2	2,488.193 2	0.7291		2,506.419 7
Total	**15.6896**	**9.7271**	**16.3871**	**0.0258**		**0.4700**	**0.4700**		**0.4366**	**0.4366**	**0.0000**	**2,488.193 2**	**2,488.193 2**	**0.7291**		**2,506.419 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8186	1.9343	18.9553	0.0651	16.6746	0.0516	16.7262	4.2694	0.0475	4.3169		6,493.833 0	6,493.833 0	0.1478		6,497.527 7
Total	**2.8186**	**1.9343**	**18.9553**	**0.0651**	**16.6746**	**0.0516**	**16.7262**	**4.2694**	**0.0475**	**4.3169**		**6,493.833 0**	**6,493.833 0**	**0.1478**		**6,497.527 7**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.6061	1.7518	17.5763	0.0634	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,322.3389	6,322.3389	0.1334		6,325.6726
Total	**2.6061**	**1.7518**	**17.5763**	**0.0634**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,322.3389**	**6,322.3389**	**0.1334**		**6,325.6726**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.6061	1.7518	17.5763	0.0634	16.6746	0.0480	16.7226	4.2694	0.0441	4.3136		6,322.3389	6,322.3389	0.1334		6,325.6726
Total	**2.6061**	**1.7518**	**17.5763**	**0.0634**	**16.6746**	**0.0480**	**16.7226**	**4.2694**	**0.0441**	**4.3136**		**6,322.3389**	**6,322.3389**	**0.1334**		**6,325.6726**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3781	1.5745	16.2329	0.0619	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,170.7645	6,170.7645	0.1194		6,173.7493
Total	**2.3781**	**1.5745**	**16.2329**	**0.0619**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,170.7645**	**6,170.7645**	**0.1194**		**6,173.7493**

3.6 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3781	1.5745	16.2329	0.0619	16.6746	0.0446	16.7193	4.2694	0.0411	4.3105		6,170.764 5	6,170.764 5	0.1194		6,173.749 3
Total	**2.3781**	**1.5745**	**16.2329**	**0.0619**	**16.6746**	**0.0446**	**16.7193**	**4.2694**	**0.0411**	**4.3105**		**6,170.764 5**	**6,170.764 5**	**0.1194**		**6,173.749 3**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1751	1.4216	15.0642	0.0605	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,037.7413	6,037.7413	0.1073		6,040.4234
Total	**2.1751**	**1.4216**	**15.0642**	**0.0605**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,037.7413**	**6,037.7413**	**0.1073**		**6,040.4234**

3.6 Architectural Coating - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1751	1.4216	15.0642	0.0605	16.6746	0.0416	16.7162	4.2694	0.0383	4.3077		6,037.7413	6,037.7413	0.1073		6,040.4234
Total	**2.1751**	**1.4216**	**15.0642**	**0.0605**	**16.6746**	**0.0416**	**16.7162**	**4.2694**	**0.0383**	**4.3077**		**6,037.7413**	**6,037.7413**	**0.1073**		**6,040.4234**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.0015	1.2925	14.0711	0.0593	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		5,921.672 2	5,921.672 2	0.0970		5,924.096 9
Total	**2.0015**	**1.2925**	**14.0711**	**0.0593**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**5,921.672 2**	**5,921.672 2**	**0.0970**		**5,924.096 9**

3.6 Architectural Coating - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.964 8	2,937.964 8	0.1359		2,941.363 0
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1359**		**2,941.363 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.0015	1.2925	14.0711	0.0593	16.6746	0.0388	16.7135	4.2694	0.0357	4.3052		5,921.672 2	5,921.672 2	0.0970		5,924.096 9
Total	**2.0015**	**1.2925**	**14.0711**	**0.0593**	**16.6746**	**0.0388**	**16.7135**	**4.2694**	**0.0357**	**4.3052**		**5,921.672 2**	**5,921.672 2**	**0.0970**		**5,924.096 9**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509		2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**		**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8593	1.1878	13.1630	0.0583	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		5,820.4105	5,820.4105	0.0876		5,822.6004
Total	**1.8593**	**1.1878**	**13.1630**	**0.0583**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**5,820.4105**	**5,820.4105**	**0.0876**		**5,822.6004**

3.6 Architectural Coating - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.5153	7.9765	17.6473	0.0310		0.3509	0.3509		0.3509	0.3509	0.0000	2,937.9648	2,937.9648	0.1359		2,941.3630
Total	**16.1189**	**7.9765**	**17.6473**	**0.0310**		**0.3509**	**0.3509**		**0.3509**	**0.3509**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1359**		**2,941.3630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8593	1.1878	13.1630	0.0583	16.6746	0.0363	16.7109	4.2694	0.0334	4.3028		5,820.4105	5,820.4105	0.0876		5,822.6004
Total	**1.8593**	**1.1878**	**13.1630**	**0.0583**	**16.6746**	**0.0363**	**16.7109**	**4.2694**	**0.0334**	**4.3028**		**5,820.4105**	**5,820.4105**	**0.0876**		**5,822.6004**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.0806	5,733.0806	0.0794		5,735.0656
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.0806**	**5,733.0806**	**0.0794**		**5,735.0656**

3.6 Architectural Coating - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.9648	2,937.9648	0.1126		2,940.7807
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.9648**	**2,937.9648**	**0.1126**		**2,940.7807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.0806	5,733.0806	0.0794		5,735.0656
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.0806**	**5,733.0806**	**0.0794**		**5,735.0656**

3.6 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973		2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**		**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.2584	5.6339	17.6146	0.0310		0.1973	0.1973		0.1973	0.1973	0.0000	2,937.964 8	2,937.964 8	0.1126		2,940.780 7
Total	**15.8620**	**5.6339**	**17.6146**	**0.0310**		**0.1973**	**0.1973**		**0.1973**	**0.1973**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.1126**		**2,940.780 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7338	1.1051	12.3717	0.0574	16.6746	0.0340	16.7086	4.2694	0.0313	4.3007		5,733.080 6	5,733.080 6	0.0794		5,735.065 6
Total	**1.7338**	**1.1051**	**12.3717**	**0.0574**	**16.6746**	**0.0340**	**16.7086**	**4.2694**	**0.0313**	**4.3007**		**5,733.080 6**	**5,733.080 6**	**0.0794**		**5,735.065 6**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239		2,937.964 8	2,937.964 8	0.0992		2,940.444 5
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**		**2,937.964 8**	**2,937.964 8**	**0.0992**		**2,940.444 5**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3039	0.8449	10.0261	0.0546	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,458.308 9	5,458.308 9	0.0556		5,459.698 2
Total	**1.3039**	**0.8449**	**10.0261**	**0.0546**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,458.308 9**	**5,458.308 9**	**0.0556**		**5,459.698 2**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	14.6036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.1261	4.3836	17.6100	0.0310		0.1239	0.1239		0.1239	0.1239	0.0000	2,937.964 8	2,937.964 8	0.0992		2,940.444 5
Total	**15.7297**	**4.3836**	**17.6100**	**0.0310**		**0.1239**	**0.1239**		**0.1239**	**0.1239**	**0.0000**	**2,937.964 8**	**2,937.964 8**	**0.0992**		**2,940.444 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3039	0.8449	10.0261	0.0546	16.6746	0.0262	16.7008	4.2694	0.0241	4.2935		5,458.308 9	5,458.308 9	0.0556		5,459.698 2
Total	**1.3039**	**0.8449**	**10.0261**	**0.0546**	**16.6746**	**0.0262**	**16.7008**	**4.2694**	**0.0241**	**4.2935**		**5,458.308 9**	**5,458.308 9**	**0.0556**		**5,459.698 2**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0665**	**0.0599**	**0.5148**	**1.2100e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**120.0862**	**120.0862**	**4.8100e-003**		**120.2063**

3.7 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0665**	**0.0599**	**0.5148**	**1.2100e-003**	**0.1232**	**1.0300e-003**	**0.1243**	**0.0327**	**9.5000e-004**	**0.0336**		**120.0862**	**120.0862**	**4.8100e-003**		**120.2063**

3.8 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1565	181.9760	51.7039	0.4450	10.8707	0.5752	11.4459	3.1288	0.5501	3.6789		46,813.1816	46,813.1816	2.2317		46,868.9737
Worker	24.0590	21.6853	186.2866	0.4368	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		43,455.1882	43,455.1882	1.7388		43,498.6577
Total	**30.2155**	**203.6614**	**237.9905**	**0.8818**	**55.4604**	**0.9475**	**56.4079**	**14.9561**	**0.8935**	**15.8496**		**90,268.3698**	**90,268.3698**	**3.9705**		**90,367.6315**

3.8 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1565	181.9760	51.7039	0.4450	10.8707	0.5752	11.4459	3.1288	0.5501	3.6789		46,813.1816	46,813.1816	2.2317		46,868.9737
Worker	24.0590	21.6853	186.2866	0.4368	44.5897	0.3723	44.9621	11.8273	0.3434	12.1707		43,455.1882	43,455.1882	1.7388		43,498.6577
Total	**30.2155**	**203.6614**	**237.9905**	**0.8818**	**55.4604**	**0.9475**	**56.4079**	**14.9561**	**0.8935**	**15.8496**		**90,268.3698**	**90,268.3698**	**3.9705**		**90,367.6315**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6422	172.0742	46.9074	0.4410	10.8717	0.5014	11.3731	3.1291	0.4796	3.6087		46,408.94 86	46,408.94 86	2.1631		46,463.02 69
Worker	22.3167	19.4317	169.6253	0.4213	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		41,926.05 73	41,926.05 73	1.5517		41,964.85 00
Total	**27.9589**	**191.5059**	**216.5327**	**0.8622**	**55.4614**	**0.8603**	**56.3218**	**14.9564**	**0.8105**	**15.7669**		**88,335.00 59**	**88,335.00 59**	**3.7148**		**88,427.87 69**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6422	172.0742	46.9074	0.4410	10.8717	0.5014	11.3731	3.1291	0.4796	3.6087		46,408.9486	46,408.9486	2.1631		46,463.0269
Worker	22.3167	19.4317	169.6253	0.4213	44.5897	0.3589	44.9487	11.8273	0.3309	12.1582		41,926.0573	41,926.0573	1.5517		41,964.8500
Total	**27.9589**	**191.5059**	**216.5327**	**0.8622**	**55.4614**	**0.8603**	**56.3218**	**14.9564**	**0.8105**	**15.7669**		**88,335.0059**	**88,335.0059**	**3.7148**		**88,427.8769**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.2613	141.6809	40.2608	0.4330	10.8727	0.2158	11.0885	3.1295	0.2063	3.3358		45,586.9498	45,586.9498	1.7592		45,630.9296
Worker	20.7299	17.4147	154.1012	0.4055	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		40,372.8541	40,372.8541	1.3804		40,407.3642
Total	**24.9912**	**159.0956**	**194.3621**	**0.8385**	**55.4624**	**0.5633**	**56.0257**	**14.9568**	**0.5266**	**15.4834**		**85,959.8039**	**85,959.8039**	**3.1396**		**86,038.2938**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.2613	141.6809	40.2608	0.4330	10.8727	0.2158	11.0885	3.1295	0.2063	3.3358		45,586.9498	45,586.9498	1.7592		45,630.9296
Worker	20.7299	17.4147	154.1012	0.4055	44.5897	0.3475	44.9372	11.8273	0.3203	12.1476		40,372.8541	40,372.8541	1.3804		40,407.3642
Total	**24.9912**	**159.0956**	**194.3621**	**0.8385**	**55.4624**	**0.5633**	**56.0257**	**14.9568**	**0.5266**	**15.4834**		**85,959.8039**	**85,959.8039**	**3.1396**		**86,038.2938**

3.8 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0276	138.3663	37.5439	0.4298	10.8736	0.2003	11.0739	3.1298	0.1915	3.3213		45,261.2123	45,261.2123	1.7357		45,304.6052
Worker	19.3486	15.6593	141.1102	0.3898	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		38,819.5505	38,819.5505	1.2332		38,850.3806
Total	**23.3762**	**154.0257**	**178.6541**	**0.8196**	**55.4633**	**0.5371**	**56.0004**	**14.9571**	**0.5018**	**15.4589**		**84,080.7628**	**84,080.7628**	**2.9689**		**84,154.9857**

3.8 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.0276	138.3663	37.5439	0.4298	10.8736	0.2003	11.0739	3.1298	0.1915	3.3213		45,261.2123	45,261.2123	1.7357		45,304.6052
Worker	19.3486	15.6593	141.1102	0.3898	44.5897	0.3368	44.9266	11.8273	0.3103	12.1376		38,819.5505	38,819.5505	1.2332		38,850.3806
Total	**23.3762**	**154.0257**	**178.6541**	**0.8196**	**55.4633**	**0.5371**	**56.0004**	**14.9571**	**0.5018**	**15.4589**		**84,080.7628**	**84,080.7628**	**2.9689**		**84,154.9857**

3.8 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8269	135.4087	35.3423	0.4268	10.8745	0.1858	11.0602	3.1301	0.1776	3.3077		44,955.7897	44,955.7897	1.7115		44,998.5772
Worker	18.1763	14.1704	129.7998	0.3742	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		37,282.1494	37,282.1494	1.1120		37,309.9482
Total	**22.0033**	**149.5791**	**165.1421**	**0.8010**	**55.4642**	**0.5154**	**55.9796**	**14.9574**	**0.4812**	**15.4386**		**82,237.9390**	**82,237.9390**	**2.8235**		**82,308.5254**

3.8 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8269	135.4087	35.3423	0.4268	10.8745	0.1858	11.0602	3.1301	0.1776	3.3077		44,955.7897	44,955.7897	1.7115		44,998.5772
Worker	18.1763	14.1704	129.7998	0.3742	44.5897	0.3296	44.9194	11.8273	0.3036	12.1309		37,282.1494	37,282.1494	1.1120		37,309.9482
Total	**22.0033**	**149.5791**	**165.1421**	**0.8010**	**55.4642**	**0.5154**	**55.9796**	**14.9574**	**0.4812**	**15.4386**		**82,237.9390**	**82,237.9390**	**2.8235**		**82,308.5254**

3.8 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6770	132.9750	33.7827	0.4245	10.8750	0.1757	11.0507	3.1303	0.1679	3.2983		44,724.6449	44,724.6449	1.6903		44,766.9019
Worker	17.1341	12.8595	119.2213	0.3587	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		35,741.7763	35,741.7763	0.9966		35,766.6920
Total	**20.8112**	**145.8345**	**153.0041**	**0.7832**	**55.4648**	**0.4918**	**55.9565**	**14.9576**	**0.4590**	**15.4166**		**80,466.4212**	**80,466.4212**	**2.6869**		**80,533.5939**

3.8 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6770	132.9750	33.7827	0.4245	10.8750	0.1757	11.0507	3.1303	0.1679	3.2983		44,724.6449	44,724.6449	1.6903		44,766.9019
Worker	17.1341	12.8595	119.2213	0.3587	44.5897	0.3161	44.9058	11.8273	0.2911	12.1184		35,741.7763	35,741.7763	0.9966		35,766.6920
Total	**20.8112**	**145.8345**	**153.0041**	**0.7832**	**55.4648**	**0.4918**	**55.9565**	**14.9576**	**0.4590**	**15.4166**		**80,466.4212**	**80,466.4212**	**2.6869**		**80,533.5939**

3.8 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5473	130.7444	32.3775	0.4225	10.8756	0.1666	11.0422	3.1305	0.1593	3.2898		44,522.2938	44,522.2938	1.6695		44,564.0321
Worker	16.1546	11.6869	110.2338	0.3463	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		34,514.3003	34,514.3003	0.9008		34,536.8208
Total	**19.7019**	**142.4313**	**142.6113**	**0.7688**	**55.4653**	**0.4643**	**55.9296**	**14.9578**	**0.4333**	**15.3911**		**79,036.5941**	**79,036.5941**	**2.5704**		**79,100.8529**

3.8 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5473	130.7444	32.3775	0.4225	10.8756	0.1666	11.0422	3.1305	0.1593	3.2898		44,522.2938	44,522.2938	1.6695		44,564.0321
Worker	16.1546	11.6869	110.2338	0.3463	44.5897	0.2977	44.8874	11.8273	0.2740	12.1012		34,514.3003	34,514.3003	0.9008		34,536.8208
Total	**19.7019**	**142.4313**	**142.6113**	**0.7688**	**55.4653**	**0.4643**	**55.9296**	**14.9578**	**0.4333**	**15.3911**		**79,036.5941**	**79,036.5941**	**2.5704**		**79,100.8529**

3.8 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400	128.8816	31.3774	0.4209	10.8760	0.1585	11.0345	3.1307	0.1515	3.2822		44,354.2521	44,354.2521	1.6459		44,395.3999
Worker	15.1551	10.6445	102.3594	0.3353	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		33,424.9278	33,424.9278	0.8186		33,445.3923
Total	**18.5951**	**139.5261**	**133.7368**	**0.7561**	**55.4658**	**0.4355**	**55.9013**	**14.9580**	**0.4064**	**15.3644**		**77,779.1799**	**77,779.1799**	**2.4645**		**77,840.7923**

3.8 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4400	128.8816	31.3774	0.4209	10.8760	0.1585	11.0345	3.1307	0.1515	3.2822		44,354.2521	44,354.2521	1.6459		44,395.3999
Worker	15.1551	10.6445	102.3594	0.3353	44.5897	0.2770	44.8668	11.8273	0.2549	12.0822		33,424.9278	33,424.9278	0.8186		33,445.3923
Total	**18.5951**	**139.5261**	**133.7368**	**0.7561**	**55.4658**	**0.4355**	**55.9013**	**14.9580**	**0.4064**	**15.3644**		**77,779.1799**	**77,779.1799**	**2.4645**		**77,840.7923**

3.8 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.474 4	2,556.474 4	0.6010		2,571.498 1
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.474 4**	**2,556.474 4**	**0.6010**		**2,571.498 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3510	127.1858	30.5340	0.4194	10.8764	0.1511	11.0275	3.1308	0.1444	3.2752		44,208.64 67	44,208.64 67	1.6273		44,249.32 99
Worker	14.0880	9.6678	94.7417	0.3255	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		32,457.20 57	32,457.20 57	0.7387		32,475.67 26
Total	**17.4390**	**136.8537**	**125.2756**	**0.7449**	**55.4662**	**0.4088**	**55.8750**	**14.9581**	**0.3815**	**15.3397**		**76,665.85 24**	**76,665.85 24**	**2.3660**		**76,725.00 25**

3.8 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3510	127.1858	30.5340	0.4194	10.8764	0.1511	11.0275	3.1308	0.1444	3.2752		44,208.6467	44,208.6467	1.6273		44,249.3299
Worker	14.0880	9.6678	94.7417	0.3255	44.5897	0.2578	44.8475	11.8273	0.2372	12.0644		32,457.2057	32,457.2057	0.7387		32,475.6726
Total	**17.4390**	**136.8537**	**125.2756**	**0.7449**	**55.4662**	**0.4088**	**55.8750**	**14.9581**	**0.3815**	**15.3397**		**76,665.8524**	**76,665.8524**	**2.3660**		**76,725.0025**

3.8 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2791	125.7355	29.9050	0.4183	10.8768	0.1449	11.0217	3.1310	0.1385	3.2694		44,095.9738	44,095.9738	1.6071		44,136.1520
Worker	13.0256	8.7557	87.8491	0.3168	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		31,600.0512	31,600.0512	0.6665		31,616.7134
Total	**16.3047**	**134.4912**	**117.7541**	**0.7351**	**55.4665**	**0.3846**	**55.8512**	**14.9583**	**0.3590**	**15.3173**		**75,696.0250**	**75,696.0250**	**2.2736**		**75,752.8654**

3.8 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2791	125.7355	29.9050	0.4183	10.8768	0.1449	11.0217	3.1310	0.1385	3.2694		44,095.97 38	44,095.97 38	1.6071		44,136.15 20
Worker	13.0256	8.7557	87.8491	0.3168	44.5897	0.2398	44.8295	11.8273	0.2206	12.0479		31,600.05 12	31,600.05 12	0.6665		31,616.71 34
Total	**16.3047**	**134.4912**	**117.7541**	**0.7351**	**55.4665**	**0.3846**	**55.8512**	**14.9583**	**0.3590**	**15.3173**		**75,696.02 50**	**75,696.02 50**	**2.2736**		**75,752.86 54**

3.8 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2194	124.4854	29.3777	0.4175	10.8772	0.1396	11.0167	3.1311	0.1334	3.2645		44,012.3836	44,012.3836	1.5928		44,052.2035
Worker	11.8862	7.8695	81.1348	0.3091	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		30,842.4584	30,842.4584	0.5967		30,857.3767
Total	**15.1056**	**132.3549**	**110.5125**	**0.7266**	**55.4669**	**0.3627**	**55.8296**	**14.9584**	**0.3387**	**15.2970**		**74,854.8420**	**74,854.8420**	**2.1895**		**74,909.5802**

3.8 Building Construction - 2031

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2194	124.4854	29.3777	0.4175	10.8772	0.1396	11.0167	3.1311	0.1334	3.2645		44,012.3836	44,012.3836	1.5928		44,052.2035
Worker	11.8862	7.8695	81.1348	0.3091	44.5897	0.2231	44.8129	11.8273	0.2052	12.0325		30,842.4584	30,842.4584	0.5967		30,857.3767
Total	**15.1056**	**132.3549**	**110.5125**	**0.7266**	**55.4669**	**0.3627**	**55.8296**	**14.9584**	**0.3387**	**15.2970**		**74,854.8420**	**74,854.8420**	**2.1895**		**74,909.5802**

3.8 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1701	123.3862	28.9861	0.4170	10.8775	0.1348	11.0123	3.1312	0.1289	3.2601		43,960.7831	43,960.7831	1.5788		44,000.2535
Worker	10.8717	7.1051	75.2933	0.3024	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		30,177.5872	30,177.5872	0.5362		30,190.9929
Total	**14.0418**	**130.4913**	**104.2794**	**0.7194**	**55.4672**	**0.3427**	**55.8099**	**14.9585**	**0.3200**	**15.2785**		**74,138.3703**	**74,138.3703**	**2.1150**		**74,191.2464**

3.8 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1701	123.3862	28.9861	0.4170	10.8775	0.1348	11.0123	3.1312	0.1289	3.2601		43,960.78 31	43,960.78 31	1.5788		44,000.25 35
Worker	10.8717	7.1051	75.2933	0.3024	44.5897	0.2079	44.7976	11.8273	0.1912	12.0185		30,177.58 72	30,177.58 72	0.5362		30,190.99 29
Total	**14.0418**	**130.4913**	**104.2794**	**0.7194**	**55.4672**	**0.3427**	**55.8099**	**14.9585**	**0.3200**	**15.2785**		**74,138.37 03**	**74,138.37 03**	**2.1150**		**74,191.24 64**

3.8 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1321	122.4188	28.6832	0.4167	10.8777	0.1305	11.0082	3.1313	0.1247	3.2560		43,930.6339	43,930.6339	1.5683		43,969.8419
Worker	10.0040	6.4600	70.3295	0.2965	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		29,597.4554	29,597.4554	0.4848		29,609.5746
Total	**13.1362**	**128.8788**	**99.0127**	**0.7132**	**55.4675**	**0.3246**	**55.7921**	**14.9586**	**0.3033**	**15.2619**		**73,528.0892**	**73,528.0892**	**2.0531**		**73,579.4165**

3.8 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1321	122.4188	28.6832	0.4167	10.8777	0.1305	11.0082	3.1313	0.1247	3.2560		43,930.6339	43,930.6339	1.5683		43,969.8419
Worker	10.0040	6.4600	70.3295	0.2965	44.5897	0.1941	44.7838	11.8273	0.1785	12.0058		29,597.4554	29,597.4554	0.4848		29,609.5746
Total	**13.1362**	**128.8788**	**99.0127**	**0.7132**	**55.4675**	**0.3246**	**55.7921**	**14.9586**	**0.3033**	**15.2619**		**73,528.0892**	**73,528.0892**	**2.0531**		**73,579.4165**

3.8 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.546 8	2,897.546 8	0.1162		2,900.452 9
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.546 8**	**2,897.546 8**	**0.1162**		**2,900.452 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0972	121.5821	28.3947	0.4165	10.8780	0.1266	11.0046	3.1314	0.1210	3.2524		43,916.511 3	43,916.511 3	1.5584		43,955.47 24
Worker	9.2929	5.9369	65.7905	0.2914	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		29,091.33 34	29,091.33 34	0.4378		29,102.27 87
Total	**12.3901**	**127.5190**	**94.1852**	**0.7079**	**55.4677**	**0.3081**	**55.7758**	**14.9587**	**0.2880**	**15.2466**		**73,007.84 47**	**73,007.84 47**	**1.9963**		**73,057.75 12**

3.8 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0972	121.5821	28.3947	0.4165	10.8780	0.1266	11.0046	3.1314	0.1210	3.2524		43,916.5113	43,916.5113	1.5584		43,955.4724
Worker	9.2929	5.9369	65.7905	0.2914	44.5897	0.1815	44.7713	11.8273	0.1670	11.9942		29,091.3334	29,091.3334	0.4378		29,102.2787
Total	**12.3901**	**127.5190**	**94.1852**	**0.7079**	**55.4677**	**0.3081**	**55.7758**	**14.9587**	**0.2880**	**15.2466**		**73,007.8447**	**73,007.8447**	**1.9963**		**73,057.7512**

3.8 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.59 95	43,912.59 95	1.5518		43,951.39 52
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.84 46	28,654.84 46	0.3969		28,664.76 61
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.44 41**	**72,567.44 41**	**1.9487**		**72,616.16 13**

3.8 Building Construction - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0669	120.8878	28.1508	0.4165	10.8782	0.1234	11.0016	3.1315	0.1180	3.2494		43,912.5995	43,912.5995	1.5518		43,951.3952
Worker	8.6657	5.5235	61.8355	0.2870	44.5897	0.1700	44.7598	11.8273	0.1564	11.9837		28,654.8446	28,654.8446	0.3969		28,664.7661
Total	**11.7327**	**126.4113**	**89.9862**	**0.7035**	**55.4679**	**0.2935**	**55.7614**	**14.9588**	**0.2744**	**15.2331**		**72,567.4441**	**72,567.4441**	**1.9487**		**72,616.1613**

3.8 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9911	118.8457	27.3804	0.4178	10.8789	0.1146	10.9935	3.1317	0.1095	3.2412		44,051.4353	44,051.4353	1.5318		44,089.7306
Worker	6.5169	4.2231	50.1118	0.2731	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		27,281.4923	27,281.4923	0.2778		27,288.4364
Total	**9.5080**	**123.0688**	**77.4922**	**0.6909**	**55.4686**	**0.2455**	**55.7140**	**14.9590**	**0.2299**	**15.1889**		**71,332.9276**	**71,332.9276**	**1.8096**		**71,378.1670**

3.8 Building Construction - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.547 1	2,897.547 1	0.1041		2,900.150 3
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.547 1**	**2,897.547 1**	**0.1041**		**2,900.150 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9911	118.8457	27.3804	0.4178	10.8789	0.1146	10.9935	3.1317	0.1095	3.2412		44,051.43 53	44,051.43 53	1.5318		44,089.73 06
Worker	6.5169	4.2231	50.1118	0.2731	44.5897	0.1308	44.7206	11.8273	0.1203	11.9476		27,281.49 23	27,281.49 23	0.2778		27,288.43 64
Total	**9.5080**	**123.0688**	**77.4922**	**0.6909**	**55.4686**	**0.2455**	**55.7140**	**14.9590**	**0.2299**	**15.1889**		**71,332.92 76**	**71,332.92 76**	**1.8096**		**71,378.16 70**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	35.2596	253.8370	405.9042	2.1001	234.6284	0.7884	235.4168	62.7663	0.7334	63.4997		214,392.0721	214,392.0721	7.8073		214,587.2550
Unmitigated	38.3185	265.9660	458.2669	2.4150	274.4191	0.9034	275.3226	73.4109	0.8405	74.2514		246,458.7471	246,458.7471	8.6709		246,675.5191

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,550.08	0.00	0.00	5,591,222	4,780,494
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,325.72	47,184.58	36,408.43	112,107,568	95,851,970

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Library	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119
NaturalGas Unmitigated	2.8652	24.6589	11.6984	0.1563		1.9796	1.9796		1.9796	1.9796		31,256.6691	31,256.6691	0.5991	0.5730	31,442.4119

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11623.6	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6236	0.1254	1.1396	0.9572	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.4811	1,367.4811	0.0262	0.0251	1,375.6074
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6589**	**11.6984**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,256.6692**	**31,256.6692**	**0.5991**	**0.5730**	**31,442.4119**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1233	22.4920	335.5832	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7389	24,479.7389	1.0236	0.4379	24,635.8315
Unmitigated	955.3325	27.9542	1,364.9292	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0918	32,275.6020	19.7752	1.3197	33,163.2480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3870					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.308 4	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.51 02	16,009.411 8	31,682.92 20	19.2095	1.3197	32,556.42 41
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**955.3325**	**27.9542**	**1,364.929 2**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.51 02**	**16,602.09 18**	**32,275.60 20**	**19.7752**	**1.3197**	**33,163.24 80**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8449					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2614					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6208	0.0174		1.8239	1.8239		1.8239	1.8239		592.6800	592.6800	0.5658		606.8239
Total	**145.1233**	**22.4920**	**335.5832**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7389**	**24,479.7389**	**1.0236**	**0.4379**	**24,635.8315**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Res. Int/Dens.

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	94.00	1000sqft	2.87	94,000.00	0
Elementary School	2,064.00	Student	20.00	172,557.36	0
High School	395.00	Student	18.00	52,401.09	0
Junior High School	566.00	Student	10.00	66,539.91	0
Library	16.00	1000sqft	0.51	16,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	62.00	Dwelling Unit	2.18	62,000.00	229
Condo/Townhouse	2,205.00	Dwelling Unit	168.75	2,205,000.00	7432
Single Family Housing	882.00	Dwelling Unit	389.61	1,587,600.00	3303
Regional Shopping Center	150.00	1000sqft	4.59	150,000.00	0
Supermarket	19.00	1000sqft	0.57	19,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Residential Intensity-density reduced by 25% for this Alternative (compared to the proposed project).

Construction Phase - Construction not modeled for this scenario (Alternative)

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.16	2.87
tblLandUse	LotAcreage	3.96	20.00
tblLandUse	LotAcreage	1.20	18.00
tblLandUse	LotAcreage	1.53	10.00
tblLandUse	LotAcreage	0.37	0.51
tblLandUse	LotAcreage	1.63	2.18
tblLandUse	LotAcreage	137.81	168.75
tblLandUse	LotAcreage	286.36	389.61
tblLandUse	LotAcreage	3.44	4.59
tblLandUse	LotAcreage	0.44	0.57
tblLandUse	Population	177.00	229.00
tblLandUse	Population	6,306.00	7,432.00
tblLandUse	Population	2,523.00	3,303.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4433	4.3854	2.9269	5.3200e-003	0.0407	0.2175	0.2582	8.3800e-003	0.2022	0.2106	0.0000	467.4967	467.4967	0.1266	0.0000	470.6627
2021	0.4217	4.1358	2.8845	5.3000e-003	0.0406	0.2027	0.2432	8.3500e-003	0.1883	0.1966	0.0000	465.1596	465.1596	0.1257	0.0000	468.3027
2022	0.3511	3.3732	2.7412	5.2700e-003	0.0404	0.1618	0.2022	8.3200e-003	0.1504	0.1587	0.0000	462.6519	462.6519	0.1249	0.0000	465.7740
2023	0.0198	0.1841	0.1708	3.4000e-004	6.0300e-003	8.4900e-003	0.0145	1.3700e-003	7.9000e-003	9.2700e-003	0.0000	30.2072	30.2072	8.1400e-003	0.0000	30.4106
Maximum	**0.4433**	**4.3854**	**2.9269**	**5.3200e-003**	**0.0407**	**0.2175**	**0.2582**	**8.3800e-003**	**0.2022**	**0.2106**	**0.0000**	**467.4967**	**467.4967**	**0.1266**	**0.0000**	**470.6627**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4433	4.3854	2.9269	5.3200e-003	0.0291	0.2175	0.2467	6.6200e-003	0.2022	0.2088	0.0000	467.4962	467.4962	0.1266	0.0000	470.6621
2021	0.4217	4.1358	2.8845	5.3000e-003	0.0290	0.2027	0.2317	6.6000e-003	0.1883	0.1949	0.0000	465.1591	465.1591	0.1257	0.0000	468.3021
2022	0.3511	3.3732	2.7412	5.2700e-003	0.0289	0.1618	0.1907	6.5800e-003	0.1504	0.1570	0.0000	462.6514	462.6514	0.1249	0.0000	465.7735
2023	0.0198	0.1841	0.1708	3.4000e-004	5.2700e-003	8.4900e-003	0.0138	1.2600e-003	7.9000e-003	9.1600e-003	0.0000	30.2072	30.2072	8.1400e-003	0.0000	30.4106
Maximum	**0.4433**	**4.3854**	**2.9269**	**5.3200e-003**	**0.0291**	**0.2175**	**0.2467**	**6.6200e-003**	**0.2022**	**0.2088**	**0.0000**	**467.4962**	**467.4962**	**0.1266**	**0.0000**	**470.6621**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**27.72**	**0.00**	**4.93**	**20.29**	**0.00**	**0.93**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.1984	1.1984
2	**4-1-2020**	**6-30-2020**	1.1976	1.1976
3	**7-1-2020**	**9-30-2020**	1.2107	1.2107
4	**10-1-2020**	**12-31-2020**	1.2116	1.2116
5	**1-1-2021**	**3-31-2021**	1.1229	1.1229
6	**4-1-2021**	**6-30-2021**	1.1347	1.1347
7	**7-1-2021**	**9-30-2021**	1.1471	1.1471
8	**10-1-2021**	**12-31-2021**	1.1479	1.1479

9	**1-1-2022**	**3-31-2022**	0.9212	0.9212
10	**4-1-2022**	**6-30-2022**	0.9308	0.9308
11	**7-1-2022**	**9-30-2022**	0.9410	0.9410
12	**10-1-2022**	**12-31-2022**	0.9417	0.9417
13	**1-1-2023**	**3-31-2023**	0.2057	0.2057
		Highest	1.2116	1.2116

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	45.3291	1.1021	63.6350	0.0619		4.6029	4.6029		4.6029	4.6029	428.4826	490.7978	919.2804	0.5759	0.0361	944.4280
Energy	0.4075	3.5062	1.6570	0.0222		0.2816	0.2816		0.2816	0.2816	0.0000	4,032.9166	4,032.9166	0.0773	0.0739	4,056.8822
Mobile	5.5143	32.3628	60.5940	0.3028	32.5894	0.1349	32.7243	8.7420	0.1254	8.8674	0.0000	28,002.9450	28,002.9450	0.9847	0.0000	28,027.5626
Waste						0.0000	0.0000		0.0000	0.0000	695.8023	0.0000	695.8023	41.1207	0.0000	1,723.8207
Water						0.0000	0.0000		0.0000	0.0000	77.3929	0.0000	77.3929	7.9490	0.1877	332.0503
Total	**51.2509**	**36.9711**	**125.8859**	**0.3869**	**32.5894**	**5.0193**	**37.6087**	**8.7420**	**5.0099**	**13.7518**	**1,201.6778**	**32,526.6593**	**33,728.3371**	**50.7076**	**0.2977**	**35,084.7437**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	19.8963	0.9375	32.6156	5.3200e-003		0.2258	0.2258		0.2258	0.2258	0.0000	706.1570	706.1570	0.0632	0.0120	711.3054
Energy	0.4075	3.5062	1.6570	0.0222		0.2816	0.2816		0.2816	0.2816	0.0000	4,032.9166	4,032.9166	0.0773	0.0739	4,056.8822
Mobile	5.1239	30.7804	53.6132	0.2632	27.8639	0.1178	27.9818	7.4744	0.1095	7.5839	0.0000	24,346.7176	24,346.7176	0.8818	0.0000	24,368.7615
Waste						0.0000	0.0000		0.0000	0.0000	695.8023	0.0000	695.8023	41.1207	0.0000	1,723.8207
Water						0.0000	0.0000		0.0000	0.0000	61.9143	0.0000	61.9143	6.3592	0.1502	265.6402
Total	**25.4276**	**35.2241**	**87.8857**	**0.2908**	**27.8639**	**0.6252**	**28.4891**	**7.4744**	**0.6169**	**8.0913**	**757.7166**	**29,085.7912**	**29,843.5078**	**48.5022**	**0.2361**	**31,126.4099**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**50.39**	**4.73**	**30.19**	**24.85**	**14.50**	**87.54**	**24.25**	**14.50**	**87.69**	**41.16**	**36.95**	**10.58**	**11.52**	**4.35**	**20.71**	**11.28**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/24/2023	5	800	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	3.1900e-003	0.0000	3.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3818	445.3818	0.1257	0.0000	448.5250
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**0.0211**	**0.2173**	**0.2384**	**3.1900e-003**	**0.2020**	**0.2052**	**0.0000**	**445.3818**	**445.3818**	**0.1257**	**0.0000**	**448.5250**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.9000e-004	0.0281	5.7200e-003	8.0000e-005	4.0100e-003	1.1000e-004	4.1200e-003	1.0300e-003	1.0000e-004	1.1400e-003	0.0000	7.2627	7.2627	2.7000e-004	0.0000	7.2695
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.3900e-003**	**0.0361**	**0.0773**	**2.4000e-004**	**0.0196**	**2.5000e-004**	**0.0199**	**5.1800e-003**	**2.3000e-004**	**5.4200e-003**	**0.0000**	**22.1149**	**22.1149**	**9.1000e-004**	**0.0000**	**22.1377**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4800e-003	0.0000	9.4800e-003	1.4400e-003	0.0000	1.4400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3812	445.3812	0.1257	0.0000	448.5244
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**9.4800e-003**	**0.2173**	**0.2268**	**1.4400e-003**	**0.2020**	**0.2034**	**0.0000**	**445.3812**	**445.3812**	**0.1257**	**0.0000**	**448.5244**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.9000e-004	0.0281	5.7200e-003	8.0000e-005	4.0100e-003	1.1000e-004	4.1200e-003	1.0300e-003	1.0000e-004	1.1400e-003	0.0000	7.2627	7.2627	2.7000e-004	0.0000	7.2695
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.3900e-003**	**0.0361**	**0.0773**	**2.4000e-004**	**0.0196**	**2.5000e-004**	**0.0199**	**5.1800e-003**	**2.3000e-004**	**5.4200e-003**	**0.0000**	**22.1149**	**22.1149**	**9.1000e-004**	**0.0000**	**22.1377**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0210	0.0000	0.0210	3.1800e-003	0.0000	3.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7102	443.7102	0.1249	0.0000	446.8324
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**0.0210**	**0.2025**	**0.2235**	**3.1800e-003**	**0.1881**	**0.1912**	**0.0000**	**443.7102**	**443.7102**	**0.1249**	**0.0000**	**446.8324**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.4000e-004	0.0257	5.4300e-003	7.0000e-005	4.0100e-003	1.0000e-004	4.1100e-003	1.0300e-003	9.0000e-005	1.1200e-003	0.0000	7.1496	7.1496	2.7000e-004	0.0000	7.1563
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.6400e-003**	**0.0328**	**0.0702**	**2.3000e-004**	**0.0196**	**2.3000e-004**	**0.0198**	**5.1700e-003**	**2.1000e-004**	**5.3800e-003**	**0.0000**	**21.4494**	**21.4494**	**8.4000e-004**	**0.0000**	**21.4703**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4500e-003	0.0000	9.4500e-003	1.4300e-003	0.0000	1.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7097	443.7097	0.1249	0.0000	446.8319
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**9.4500e-003**	**0.2025**	**0.2119**	**1.4300e-003**	**0.1881**	**0.1895**	**0.0000**	**443.7097**	**443.7097**	**0.1249**	**0.0000**	**446.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.4000e-004	0.0257	5.4300e-003	7.0000e-005	4.0100e-003	1.0000e-004	4.1100e-003	1.0300e-003	9.0000e-005	1.1200e-003	0.0000	7.1496	7.1496	2.7000e-004	0.0000	7.1563
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.6400e-003**	**0.0328**	**0.0702**	**2.3000e-004**	**0.0196**	**2.3000e-004**	**0.0198**	**5.1700e-003**	**2.1000e-004**	**5.3800e-003**	**0.0000**	**21.4494**	**21.4494**	**8.4000e-004**	**0.0000**	**21.4703**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0209	0.0000	0.0209	3.1700e-003	0.0000	3.1700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3431	3.3435	2.6772	5.0500e-003		0.1615	0.1615		0.1502	0.1502	0.0000	441.8730	441.8730	0.1241	0.0000	444.9759
Total	**0.3431**	**3.3435**	**2.6772**	**5.0500e-003**	**0.0209**	**0.1615**	**0.1825**	**3.1700e-003**	**0.1502**	**0.1534**	**0.0000**	**441.8730**	**441.8730**	**0.1241**	**0.0000**	**444.9759**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	0.0234	5.1500e-003	7.0000e-005	4.0100e-003	8.0000e-005	4.0900e-003	1.0300e-003	8.0000e-005	1.1100e-003	0.0000	7.0352	7.0352	2.6000e-004	0.0000	7.0418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2900e-003	6.3400e-003	0.0589	1.5000e-004	0.0155	1.3000e-004	0.0156	4.1200e-003	1.2000e-004	4.2400e-003	0.0000	13.7437	13.7437	5.1000e-004	0.0000	13.7564
Total	**7.9800e-003**	**0.0297**	**0.0640**	**2.2000e-004**	**0.0195**	**2.1000e-004**	**0.0197**	**5.1500e-003**	**2.0000e-004**	**5.3500e-003**	**0.0000**	**20.7789**	**20.7789**	**7.7000e-004**	**0.0000**	**20.7981**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4100e-003	0.0000	9.4100e-003	1.4300e-003	0.0000	1.4300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3431	3.3435	2.6772	5.0500e-003		0.1615	0.1615		0.1502	0.1502	0.0000	441.8724	441.8724	0.1241	0.0000	444.9754
Total	**0.3431**	**3.3435**	**2.6772**	**5.0500e-003**	**9.4100e-003**	**0.1615**	**0.1710**	**1.4300e-003**	**0.1502**	**0.1516**	**0.0000**	**441.8724**	**441.8724**	**0.1241**	**0.0000**	**444.9754**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	0.0234	5.1500e-003	7.0000e-005	4.0100e-003	8.0000e-005	4.0900e-003	1.0300e-003	8.0000e-005	1.1100e-003	0.0000	7.0352	7.0352	2.6000e-004	0.0000	7.0418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2900e-003	6.3400e-003	0.0589	1.5000e-004	0.0155	1.3000e-004	0.0156	4.1200e-003	1.2000e-004	4.2400e-003	0.0000	13.7437	13.7437	5.1000e-004	0.0000	13.7564
Total	**7.9800e-003**	**0.0297**	**0.0640**	**2.2000e-004**	**0.0195**	**2.1000e-004**	**0.0197**	**5.1500e-003**	**2.0000e-004**	**5.3500e-003**	**0.0000**	**20.7789**	**20.7789**	**7.7000e-004**	**0.0000**	**20.7981**

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3700e-003	0.0000	1.3700e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0193	0.1826	0.1670	3.3000e-004		8.4800e-003	8.4800e-003		7.8900e-003	7.8900e-003	0.0000	28.8933	28.8933	8.0900e-003	0.0000	29.0956
Total	**0.0193**	**0.1826**	**0.1670**	**3.3000e-004**	**1.3700e-003**	**8.4800e-003**	**9.8500e-003**	**2.1000e-004**	**7.8900e-003**	**8.1000e-003**	**0.0000**	**28.8933**	**28.8933**	**8.0900e-003**	**0.0000**	**29.0956**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1500e-003	3.0000e-004	0.0000	3.6500e-003	0.0000	3.6500e-003	9.0000e-004	0.0000	9.0000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.7000e-004	3.5000e-003	1.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8653	0.8653	3.0000e-005	0.0000	0.8661
Total	**4.7000e-004**	**1.5200e-003**	**3.8000e-003**	**1.0000e-005**	**4.6600e-003**	**1.0000e-005**	**4.6700e-003**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**0.0000**	**1.3140**	**1.3140**	**4.0000e-005**	**0.0000**	**1.3151**

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0193	0.1826	0.1670	3.3000e-004		8.4800e-003	8.4800e-003		7.8900e-003	7.8900e-003	0.0000	28.8932	28.8932	8.0900e-003	0.0000	29.0955
Total	**0.0193**	**0.1826**	**0.1670**	**3.3000e-004**	**6.2000e-004**	**8.4800e-003**	**9.1000e-003**	**9.0000e-005**	**7.8900e-003**	**7.9800e-003**	**0.0000**	**28.8932**	**28.8932**	**8.0900e-003**	**0.0000**	**29.0955**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1500e-003	3.0000e-004	0.0000	3.6500e-003	0.0000	3.6500e-003	9.0000e-004	0.0000	9.0000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4490
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.7000e-004	3.5000e-003	1.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8653	0.8653	3.0000e-005	0.0000	0.8661
Total	**4.7000e-004**	**1.5200e-003**	**3.8000e-003**	**1.0000e-005**	**4.6600e-003**	**1.0000e-005**	**4.6700e-003**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**0.0000**	**1.3140**	**1.3140**	**4.0000e-005**	**0.0000**	**1.3151**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1239	30.7804	53.6132	0.2632	27.8639	0.1178	27.9818	7.4744	0.1095	7.5839	0.0000	24,346.7176	24,346.7176	0.8818	0.0000	24,368.7615
Unmitigated	5.5143	32.3628	60.5940	0.3028	32.5894	0.1349	32.7243	8.7420	0.1254	8.8674	0.0000	28,002.9450	28,002.9450	0.9847	0.0000	28,027.5626

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	412.30	396.18	363.32	1,160,998	992,653
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	12,811.05	12,502.35	10672.20	35,899,909	30,694,422
Elementary School	2,662.56	0.00	0.00	4,193,416	3,585,371
General Office Building	1,036.82	231.24	98.70	1,882,456	1,609,500
High School	675.45	240.95	98.75	1,390,225	1,188,642
Junior High School	916.92	0.00	0.00	1,472,439	1,258,935
Library	899.84	744.80	407.84	1,368,437	1,170,014
Regional Shopping Center	6,405.00	7,495.50	3786.00	10,847,071	9,274,246
Single Family Housing	8,396.64	8,740.62	7602.84	24,004,661	20,523,985
Supermarket	1,942.56	3,374.21	3162.36	2,640,392	2,257,535
Total	36,438.86	37,092.85	28,669.53	87,069,003	74,443,998

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.4075	3.5062	1.6570	0.0222		0.2816	0.2816		0.2816	0.2816	0.0000	4,032.916 6	4,032.916 6	0.0773	0.0739	4,056.882 2
NaturalGas Unmitigated	0.4075	3.5062	1.6570	0.0222		0.2816	0.2816		0.2816	0.2816	0.0000	4,032.916 6	4,032.916 6	0.0773	0.0739	4,056.882 2

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	535646	2.8900e-003	0.0247	0.0105	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	28.5841	28.5841	5.5000e-004	5.2000e-004	28.7540
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	4.12842e+007	0.2226	1.9023	0.8095	0.0121		0.1538	0.1538		0.1538	0.1538	0.0000	2,203.0841	2,203.0841	0.0422	0.0404	2,216.1759
Elementary School	3.18196e+006	0.0172	0.1560	0.1310	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	169.8014	169.8014	3.2500e-003	3.1100e-003	170.8104
General Office Building	1.53878e+006	8.3000e-003	0.0754	0.0634	4.5000e-004		5.7300e-003	5.7300e-003		5.7300e-003	5.7300e-003	0.0000	82.1152	82.1152	1.5700e-003	1.5100e-003	82.6031
High School	966276	5.2100e-003	0.0474	0.0398	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.5642	51.5642	9.9000e-004	9.5000e-004	51.8706
Junior High School	1.227e+006	6.6200e-003	0.0602	0.0505	3.6000e-004		4.5700e-003	4.5700e-003		4.5700e-003	4.5700e-003	0.0000	65.4772	65.4772	1.2500e-003	1.2000e-003	65.8663
Library	422080	2.2800e-003	0.0207	0.0174	1.2000e-004		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	22.5238	22.5238	4.3000e-004	4.1000e-004	22.6576
Regional Shopping Center	355500	1.9200e-003	0.0174	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.9708	18.9708	3.6000e-004	3.5000e-004	19.0836
Single Family Housing	2.56354e+007	0.1382	1.1812	0.5027	7.5400e-003		0.0955	0.0955		0.0955	0.0955	0.0000	1,368.0031	1,368.0031	0.0262	0.0251	1,376.1324
Supermarket	427120	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7928	22.7928	4.4000e-004	4.2000e-004	22.9282
Total		**0.4075**	**3.5062**	**1.6570**	**0.0222**		**0.2815**	**0.2815**		**0.2815**	**0.2815**	**0.0000**	**4,032.9166**	**4,032.9166**	**0.0773**	**0.0739**	**4,056.8822**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	535646	2.8900e-003	0.0247	0.0105	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	28.5841	28.5841	5.5000e-004	5.2000e-004	28.7540
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	4.12842e+007	0.2226	1.9023	0.8095	0.0121		0.1538	0.1538		0.1538	0.1538	0.0000	2,203.0841	2,203.0841	0.0422	0.0404	2,216.1759
Elementary School	3.18196e+006	0.0172	0.1560	0.1310	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	169.8014	169.8014	3.2500e-003	3.1100e-003	170.8104
General Office Building	1.53878e+006	8.3000e-003	0.0754	0.0634	4.5000e-004		5.7300e-003	5.7300e-003		5.7300e-003	5.7300e-003	0.0000	82.1152	82.1152	1.5700e-003	1.5100e-003	82.6031
High School	966276	5.2100e-003	0.0474	0.0398	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.5642	51.5642	9.9000e-004	9.5000e-004	51.8706
Junior High School	1.227e+006	6.6200e-003	0.0602	0.0505	3.6000e-004		4.5700e-003	4.5700e-003		4.5700e-003	4.5700e-003	0.0000	65.4772	65.4772	1.2500e-003	1.2000e-003	65.8663
Library	422080	2.2800e-003	0.0207	0.0174	1.2000e-004		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	22.5238	22.5238	4.3000e-004	4.1000e-004	22.6576
Regional Shopping Center	355500	1.9200e-003	0.0174	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.9708	18.9708	3.6000e-004	3.5000e-004	19.0836
Single Family Housing	2.56354e+007	0.1382	1.1812	0.5027	7.5400e-003		0.0955	0.0955		0.0955	0.0955	0.0000	1,368.0031	1,368.0031	0.0262	0.0251	1,376.1324
Supermarket	427120	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7928	22.7928	4.4000e-004	4.2000e-004	22.9282
Total		**0.4075**	**3.5062**	**1.6570**	**0.0222**		**0.2815**	**0.2815**		**0.2815**	**0.2815**	**0.0000**	**4,032.9166**	**4,032.9166**	**0.0773**	**0.0739**	**4,056.8822**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	255958	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.11252e+007	0.0000	0.0000	0.0000	0.0000
Elementary School	930084	0.0000	0.0000	0.0000	0.0000
General Office Building	1.67602e+006	0.0000	0.0000	0.0000	0.0000
High School	282442	0.0000	0.0000	0.0000	0.0000
Junior High School	358650	0.0000	0.0000	0.0000	0.0000
Library	132160	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.6035e+006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.13588e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	779570	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	255958	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.11252e+007	0.0000	0.0000	0.0000	0.0000
Elementary School	930084	0.0000	0.0000	0.0000	0.0000
General Office Building	1.67602e+006	0.0000	0.0000	0.0000	0.0000
High School	282442	0.0000	0.0000	0.0000	0.0000
Junior High School	358650	0.0000	0.0000	0.0000	0.0000
Library	132160	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.6035e+006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.13588e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	779570	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	19.8963	0.9375	32.6156	5.3200e-003		0.2258	0.2258		0.2258	0.2258	0.0000	706.1570	706.1570	0.0632	0.0120	711.3054
Unmitigated	45.3291	1.1021	63.6350	0.0619		4.6029	4.6029		4.6029	4.6029	428.4826	490.7978	919.2804	0.5759	0.0361	944.4280

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.8086					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	17.3428					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	24.2066	0.7285	31.2593	0.0602		4.4227	4.4227		4.4227	4.4227	428.4826	437.6655	866.1481	0.5252	0.0361	890.0279
Landscaping	0.9710	0.3736	32.3757	1.7200e-003		0.1802	0.1802		0.1802	0.1802	0.0000	53.1323	53.1323	0.0507	0.0000	54.4001
Total	**45.3291**	**1.1021**	**63.6350**	**0.0619**		**4.6029**	**4.6029**		**4.6029**	**4.6029**	**428.4826**	**490.7978**	**919.2804**	**0.5759**	**0.0361**	**944.4280**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.8086					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	16.0507					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0660	0.5639	0.2400	3.6000e-003		0.0456	0.0456		0.0456	0.0456	0.0000	653.0247	653.0247	0.0125	0.0120	656.9053
Landscaping	0.9710	0.3736	32.3757	1.7200e-003		0.1802	0.1802		0.1802	0.1802	0.0000	53.1323	53.1323	0.0507	0.0000	54.4001
Total	**19.8963**	**0.9375**	**32.6156**	**5.3200e-003**		**0.2258**	**0.2258**		**0.2258**	**0.2258**	**0.0000**	**706.1570**	**706.1570**	**0.0632**	**0.0120**	**711.3054**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	61.9143	6.3592	0.1502	265.6402
Unmitigated	77.3929	7.9490	0.1877	332.0503

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.03955 / 2.54667	1.2816	0.1316	3.1100e-003	5.4985
City Park	0 / 176.339	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	143.665 / 90.5712	45.5782	4.6813	0.1105	195.5507
Elementary School	5.00363 / 12.8665	1.5874	0.1630	3.8500e-003	6.8108
General Office Building	16.707 / 10.2398	5.3004	0.5444	0.0129	22.7409
High School	1.73996 / 4.47418	0.5520	0.0567	1.3400e-003	2.3684
Junior High School	1.37212 / 3.52831	0.4353	0.0447	1.0600e-003	1.8677
Library	0.500623 / 0.783025	0.1588	0.0163	3.9000e-004	0.6814
Regional Shopping Center	11.1109 / 6.80989	3.5250	0.3621	8.5500e-003	15.1237
Single Family Housing	57.4659 / 36.2285	18.2313	1.8725	0.0442	78.2203
Supermarket	2.3421 / 0.072436	0.7430	0.0763	1.8000e-003	3.1880
Total		**77.3929**	**7.9490**	**0.1877**	**332.0503**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.23164 / 2.39133	1.0253	0.1053	2.4900e-003	4.3988
City Park	0 / 165.583	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	114.932 / 85.0463	36.4625	3.7451	0.0884	156.4406
Elementary School	4.00291 / 12.0816	1.2699	0.1304	3.0800e-003	5.4486
General Office Building	13.3656 / 9.61513	4.2403	0.4355	0.0103	18.1927
High School	1.39197 / 4.20126	0.4416	0.0454	1.0700e-003	1.8947
Junior High School	1.0977 / 3.31308	0.3483	0.0358	8.4000e-004	1.4941
Library	0.400498 / 0.73526	0.1271	0.0131	3.1000e-004	0.5451
Regional Shopping Center	8.8887 / 6.39449	2.8200	0.2896	6.8400e-003	12.0990
Single Family Housing	45.9727 / 34.0185	14.5850	1.4980	0.0354	62.5762
Supermarket	1.87368 / 0.0680174	0.5944	0.0611	1.4400e-003	2.5504
Total		**61.9143**	**6.3592**	**0.1502**	**265.6402**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	695.8023	41.1207	0.0000	1,723.820 7
Unmitigated	695.8023	41.1207	0.0000	1,723.820 7

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	28.52	5.7893	0.3421	0.0000	14.3428
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1014.3	205.8937	12.1680	0.0000	510.0930
Elementary School	376.68	76.4626	4.5188	0.0000	189.4329
General Office Building	87.42	17.7455	1.0487	0.0000	43.9637
High School	72.09	14.6336	0.8648	0.0000	36.2542
Junior High School	103.3	20.9690	1.2392	0.0000	51.9497
Library	14.73	2.9901	0.1767	0.0000	7.4077
Regional Shopping Center	157.5	31.9711	1.8894	0.0000	79.2070
Single Family Housing	1453.32	295.0108	17.4346	0.0000	730.8768
Supermarket	107.16	21.7525	1.2855	0.0000	53.8909
Total		**695.8023**	**41.1207**	**0.0000**	**1,723.8207**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	28.52	5.7893	0.3421	0.0000	14.3428
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1014.3	205.8937	12.1680	0.0000	510.0930
Elementary School	376.68	76.4626	4.5188	0.0000	189.4329
General Office Building	87.42	17.7455	1.0487	0.0000	43.9637
High School	72.09	14.6336	0.8648	0.0000	36.2542
Junior High School	103.3	20.9690	1.2392	0.0000	51.9497
Library	14.73	2.9901	0.1767	0.0000	7.4077
Regional Shopping Center	157.5	31.9711	1.8894	0.0000	79.2070
Single Family Housing	1453.32	295.0108	17.4346	0.0000	730.8768
Supermarket	107.16	21.7525	1.2855	0.0000	53.8909
Total		**695.8023**	**41.1207**	**0.0000**	**1,723.8207**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Res. Int/Dens.

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	94.00	1000sqft	2.87	94,000.00	0
Elementary School	2,064.00	Student	20.00	172,557.36	0
High School	395.00	Student	18.00	52,401.09	0
Junior High School	566.00	Student	10.00	66,539.91	0
Library	16.00	1000sqft	0.51	16,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	62.00	Dwelling Unit	2.18	62,000.00	229
Condo/Townhouse	2,205.00	Dwelling Unit	168.75	2,205,000.00	7432
Single Family Housing	882.00	Dwelling Unit	389.61	1,587,600.00	3303
Regional Shopping Center	150.00	1000sqft	4.59	150,000.00	0
Supermarket	19.00	1000sqft	0.57	19,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2, CH4, and N2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Residential Intensity-density reduced by 25% for this Alternative (compared to the proposed project).

Construction Phase - Construction not modeled for this scenario (Alternative)

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.16	2.87
tblLandUse	LotAcreage	3.96	20.00
tblLandUse	LotAcreage	1.20	18.00
tblLandUse	LotAcreage	1.53	10.00
tblLandUse	LotAcreage	0.37	0.51
tblLandUse	LotAcreage	1.63	2.18
tblLandUse	LotAcreage	137.81	168.75
tblLandUse	LotAcreage	286.36	389.61
tblLandUse	LotAcreage	3.44	4.59
tblLandUse	LotAcreage	0.44	0.57
tblLandUse	Population	177.00	229.00
tblLandUse	Population	6,306.00	7,432.00
tblLandUse	Population	2,523.00	3,303.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3843	33.4643	22.3718	0.0407	0.3158	1.6606	1.9764	0.0652	1.5436	1.6088	0.0000	3,942.0259	3,942.0259	1.0659	0.0000	3,968.6719
2021	3.2318	31.6809	22.1303	0.0407	0.3159	1.5531	1.8690	0.0652	1.4427	1.5080	0.0000	3,937.0999	3,937.0999	1.0622	0.0000	3,963.6536
2022	2.7010	25.9383	21.1121	0.0406	0.3161	1.2443	1.5603	0.0652	1.1568	1.2220	0.0000	3,930.6853	3,930.6853	1.0591	0.0000	3,957.1633
2023	2.3255	21.6557	20.1152	0.0406	0.7296	0.9988	1.7284	0.1668	0.9292	1.0959	0.0000	3,924.8221	3,924.8221	1.0553	0.0000	3,951.2035
Maximum	**3.3843**	**33.4643**	**22.3718**	**0.0407**	**0.7296**	**1.6606**	**1.9764**	**0.1668**	**1.5436**	**1.6088**	**0.0000**	**3,942.0259**	**3,942.0259**	**1.0659**	**0.0000**	**3,968.6719**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3843	33.4643	22.3718	0.0407	0.2273	1.6606	1.8879	0.0518	1.5436	1.5954	0.0000	3,942.0259	3,942.0259	1.0659	0.0000	3,968.6719
2021	3.2318	31.6809	22.1303	0.0407	0.2275	1.5531	1.7805	0.0518	1.4427	1.4945	0.0000	3,937.0999	3,937.0999	1.0622	0.0000	3,963.6536
2022	2.7010	25.9383	21.1121	0.0406	0.2276	1.2443	1.4718	0.0518	1.1568	1.2086	0.0000	3,930.6853	3,930.6853	1.0591	0.0000	3,957.1633
2023	2.3255	21.6557	20.1152	0.0406	0.6412	0.9988	1.6399	0.1534	0.9292	1.0825	0.0000	3,924.8221	3,924.8221	1.0553	0.0000	3,951.2035
Maximum	**3.3843**	**33.4643**	**22.3718**	**0.0407**	**0.6412**	**1.6606**	**1.8879**	**0.1534**	**1.5436**	**1.5954**	**0.0000**	**3,942.0259**	**3,942.0259**	**1.0659**	**0.0000**	**3,968.6719**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**21.10**	**0.00**	**4.96**	**14.80**	**0.00**	**0.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	708.5927	20.7564	1,021.4271	1.4809		109.3115	109.3115		109.3115	109.3115	11,520.0300	12,235.4643	23,755.4944	14.5662	0.9700	24,408.6986
Energy	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
Mobile	39.0305	207.1266	398.3563	2.0266	214.9349	0.8643	215.7993	57.4978	0.8034	58.3013		206,492.0751	206,492.0751	6.9081		206,664.7781
Total	**749.8560**	**247.0951**	**1,428.8626**	**3.6293**	**214.9349**	**111.7186**	**326.6535**	**57.4978**	**111.6577**	**169.1555**	**11,520.0300**	**243,086.6054**	**254,606.6354**	**21.9412**	**1.4166**	**255,577.2964**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	112.7161	16.7417	264.8577	0.1015		2.5539	2.5539		2.5539	2.5539	0.0000	18,025.5349	18,025.5349	0.7837	0.3219	18,141.0475
Energy	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
Mobile	36.5456	197.7101	350.3669	1.7622	183.7694	0.7553	184.5247	49.1606	0.7020	49.8626		179,622.9814	179,622.9814	6.1752		179,777.3613
Total	**151.4946**	**233.6639**	**624.3038**	**1.9855**	**183.7694**	**4.8520**	**188.6213**	**49.1606**	**4.7986**	**53.9593**	**0.0000**	**222,007.5822**	**222,007.5822**	**7.4258**	**0.7685**	**222,422.2285**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	79.80	5.44	56.31	45.29	14.50	95.66	42.26	14.50	95.70	68.10	100.00	8.67	12.80	66.16	45.75	12.97

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/24/2023	5	800	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1609**	**1.6587**	**1.8196**	**0.0244**	**1.5419**	**1.5662**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9700e-003	0.2100	0.0422	5.8000e-004	0.0317	8.3000e-004	0.0325	8.1400e-003	7.9000e-004	8.9300e-003		61.6204	61.6204	2.2300e-003		61.6762
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0722**	**0.2633**	**0.6186**	**1.9100e-003**	**0.1549**	**1.9000e-003**	**0.1568**	**0.0408**	**1.7700e-003**	**0.0426**		**194.3210**	**194.3210**	**7.9000e-003**		**194.5183**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0724**	**1.6587**	**1.7311**	**0.0110**	**1.5419**	**1.5528**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9700e-003	0.2100	0.0422	5.8000e-004	0.0317	8.3000e-004	0.0325	8.1400e-003	7.9000e-004	8.9300e-003		61.6204	61.6204	2.2300e-003		61.6762
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0722**	**0.2633**	**0.6186**	**1.9100e-003**	**0.1549**	**1.9000e-003**	**0.1568**	**0.0408**	**1.7700e-003**	**0.0426**		**194.3210**	**194.3210**	**7.9000e-003**		**194.5183**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1609**	**1.5513**	**1.7122**	**0.0244**	**1.4411**	**1.4655**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5800e-003	0.1926	0.0403	5.7000e-004	0.0318	7.2000e-004	0.0326	8.1700e-003	6.9000e-004	8.8600e-003		60.9005	60.9005	2.2000e-003		60.9554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0667**	**0.2402**	**0.5653**	**1.8600e-003**	**0.1551**	**1.7500e-003**	**0.1568**	**0.0409**	**1.6400e-003**	**0.0425**		**189.1549**	**189.1549**	**7.2500e-003**		**189.3362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0724**	**1.5513**	**1.6237**	**0.0110**	**1.4411**	**1.4521**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5800e-003	0.1926	0.0403	5.7000e-004	0.0318	7.2000e-004	0.0326	8.1700e-003	6.9000e-004	8.8600e-003		60.9005	60.9005	2.2000e-003		60.9554
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0667**	**0.2402**	**0.5653**	**1.8600e-003**	**0.1551**	**1.7500e-003**	**0.1568**	**0.0409**	**1.6400e-003**	**0.0425**		**189.1549**	**189.1549**	**7.2500e-003**		**189.3362**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.781 2	3,746.781 2	1.0524		3,773.092 0
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1609**	**1.2427**	**1.4035**	**0.0244**	**1.1553**	**1.1796**		**3,746.781 2**	**3,746.781 2**	**1.0524**		**3,773.092 0**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.2000e-003	0.1763	0.0384	5.7000e-004	0.0319	6.2000e-004	0.0326	8.1900e-003	5.9000e-004	8.7900e-003		60.1646	60.1646	2.1600e-003		60.2186
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0618**	**0.2189**	**0.5180**	**1.8100e-003**	**0.1552**	**1.6100e-003**	**0.1568**	**0.0409**	**1.5000e-003**	**0.0424**		**183.9042**	**183.9042**	**6.6800e-003**		**184.0712**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0724**	**1.2427**	**1.3151**	**0.0110**	**1.1553**	**1.1662**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.2000e-003	0.1763	0.0384	5.7000e-004	0.0319	6.2000e-004	0.0326	8.1900e-003	5.9000e-004	8.7900e-003		60.1646	60.1646	2.1600e-003		60.2186
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0618**	**0.2189**	**0.5180**	**1.8100e-003**	**0.1552**	**1.6100e-003**	**0.1568**	**0.0409**	**1.5000e-003**	**0.0424**		**183.9042**	**183.9042**	**6.6800e-003**		**184.0712**

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.1609**	**0.9975**	**1.1584**	**0.0244**	**0.9280**	**0.9524**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8300e-003	0.1331	0.0344	5.5000e-004	0.4455	3.0000e-004	0.4458	0.1097	2.9000e-004	0.1100		58.6845	58.6845	1.8400e-003		58.7307
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0525	0.0383	0.4375	1.2000e-003	0.1232	9.6000e-004	0.1242	0.0327	8.9000e-004	0.0336		119.1536	119.1536	4.0400e-003		119.2545
Total	**0.0564**	**0.1713**	**0.4718**	**1.7500e-003**	**0.5688**	**1.2600e-003**	**0.5700**	**0.1424**	**1.1800e-003**	**0.1436**		**177.8381**	**177.8381**	**5.8800e-003**		**177.9852**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.0724**	**0.9975**	**1.0699**	**0.0110**	**0.9280**	**0.9390**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.8300e-003	0.1331	0.0344	5.5000e-004	0.4455	3.0000e-004	0.4458	0.1097	2.9000e-004	0.1100		58.6845	58.6845	1.8400e-003		58.7307
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0525	0.0383	0.4375	1.2000e-003	0.1232	9.6000e-004	0.1242	0.0327	8.9000e-004	0.0336		119.1536	119.1536	4.0400e-003		119.2545
Total	**0.0564**	**0.1713**	**0.4718**	**1.7500e-003**	**0.5688**	**1.2600e-003**	**0.5700**	**0.1424**	**1.1800e-003**	**0.1436**		**177.8381**	**177.8381**	**5.8800e-003**		**177.9852**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	36.5456	197.7101	350.3669	1.7622	183.7694	0.7553	184.5247	49.1606	0.7020	49.8626		179,622.9814	179,622.9814	6.1752		179,777.3613
Unmitigated	39.0305	207.1266	398.3563	2.0266	214.9349	0.8643	215.7993	57.4978	0.8034	58.3013		206,492.0751	206,492.0751	6.9081		206,664.7781

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	412.30	396.18	363.32	1,160,998	992,653
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	12,811.05	12,502.35	10672.20	35,899,909	30,694,422
Elementary School	2,662.56	0.00	0.00	4,193,416	3,585,371
General Office Building	1,036.82	231.24	98.70	1,882,456	1,609,500
High School	675.45	240.95	98.75	1,390,225	1,188,642
Junior High School	916.92	0.00	0.00	1,472,439	1,258,935
Library	899.84	744.80	407.84	1,368,437	1,170,014
Regional Shopping Center	6,405.00	7,495.50	3786.00	10,847,071	9,274,246
Single Family Housing	8,396.64	8,740.62	7602.84	24,004,661	20,523,985
Supermarket	1,942.56	3,374.21	3162.36	2,640,392	2,257,535
Total	36,438.86	37,092.85	28,669.53	87,069,003	74,443,998

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
NaturalGas Unmitigated	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1467.52	0.0158	0.1352	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109		172.6498	172.6498	3.3100e-003	3.1700e-003	173.6757
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	113107	1.2198	10.4236	4.4356	0.0665		0.8428	0.8428		0.8428	0.8428		13,306.7646	13,306.7646	0.2551	0.2440	13,385.8400
Elementary School	8717.69	0.0940	0.8547	0.7179	5.1300e-003		0.0650	0.0650		0.0650	0.0650		1,025.6109	1,025.6109	0.0197	0.0188	1,031.7056
General Office Building	4215.84	0.0455	0.4133	0.3472	2.4800e-003		0.0314	0.0314		0.0314	0.0314		495.9807	495.9807	9.5100e-003	9.0900e-003	498.9280
High School	2647.33	0.0286	0.2595	0.2180	1.5600e-003		0.0197	0.0197		0.0197	0.0197		311.4508	311.4508	5.9700e-003	5.7100e-003	313.3016
Junior High School	3361.63	0.0363	0.3296	0.2768	1.9800e-003		0.0251	0.0251		0.0251	0.0251		395.4862	395.4862	7.5800e-003	7.2500e-003	397.8364
Library	1156.38	0.0125	0.1134	0.0952	6.8000e-004		8.6200e-003	8.6200e-003		8.6200e-003	8.6200e-003		136.0451	136.0451	2.6100e-003	2.4900e-003	136.8536
Regional Shopping Center	973.973	0.0105	0.0955	0.0802	5.7000e-004		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		114.5850	114.5850	2.2000e-003	2.1000e-003	115.2659
Single Family Housing	70234	0.7574	6.4725	2.7543	0.0413		0.5233	0.5233		0.5233	0.5233		8,262.8233	8,262.8233	0.1584	0.1515	8,311.9252
Supermarket	1170.19	0.0126	0.1147	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003		137.6696	137.6696	2.6400e-003	2.5200e-003	138.4877
Total		**2.2329**	**19.2121**	**9.0792**	**0.1218**		**1.5428**	**1.5428**		**1.5428**	**1.5428**		**24,359.0659**	**24,359.0659**	**0.4669**	**0.4466**	**24,503.8197**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.46752	0.0158	0.1352	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109		172.6498	172.6498	3.3100e-003	3.1700e-003	173.6757
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	113.107	1.2198	10.4236	4.4356	0.0665		0.8428	0.8428		0.8428	0.8428		13,306.7646	13,306.7646	0.2551	0.2440	13,385.8400
Elementary School	8.71769	0.0940	0.8547	0.7179	5.1300e-003		0.0650	0.0650		0.0650	0.0650		1,025.6109	1,025.6109	0.0197	0.0188	1,031.7056
General Office Building	4.21584	0.0455	0.4133	0.3472	2.4800e-003		0.0314	0.0314		0.0314	0.0314		495.9807	495.9807	9.5100e-003	9.0900e-003	498.9280
High School	2.64733	0.0286	0.2595	0.2180	1.5600e-003		0.0197	0.0197		0.0197	0.0197		311.4508	311.4508	5.9700e-003	5.7100e-003	313.3016
Junior High School	3.36163	0.0363	0.3296	0.2768	1.9800e-003		0.0251	0.0251		0.0251	0.0251		395.4862	395.4862	7.5800e-003	7.2500e-003	397.8364
Library	1.15638	0.0125	0.1134	0.0952	6.8000e-004		8.6200e-003	8.6200e-003		8.6200e-003	8.6200e-003		136.0451	136.0451	2.6100e-003	2.4900e-003	136.8536
Regional Shopping Center	0.973973	0.0105	0.0955	0.0802	5.7000e-004		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		114.5850	114.5850	2.2000e-003	2.1000e-003	115.2659
Single Family Housing	70.234	0.7574	6.4725	2.7543	0.0413		0.5233	0.5233		0.5233	0.5233		8,262.8233	8,262.8233	0.1584	0.1515	8,311.9252
Supermarket	1.17019	0.0126	0.1147	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003		137.6696	137.6696	2.6400e-003	2.5200e-003	138.4877
Total		**2.2329**	**19.2121**	**9.0792**	**0.1218**		**1.5428**	**1.5428**		**1.5428**	**1.5428**		**24,359.0659**	**24,359.0659**	**0.4669**	**0.4466**	**24,503.8197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	112.7161	16.7417	264.8577	0.1015		2.5539	2.5539		2.5539	2.5539	0.0000	18,025.5349	18,025.5349	0.7837	0.3219	18,141.0475
Unmitigated	708.5927	20.7564	1,021.4271	1.4809		109.3115	109.3115		109.3115	109.3115	11,520.0300	12,235.4643	23,755.4944	14.5662	0.9700	24,408.6986

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.3894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	95.0293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	590.4059	17.7677	762.4217	1.4672		107.8696	107.8696		107.8696	107.8696	11,520.0300	11,766.9177	23,286.9477	14.1190	0.9700	23,928.9717
Landscaping	7.7682	2.9887	259.0054	0.0137		1.4420	1.4420		1.4420	1.4420		468.5467	468.5467	0.4472		479.7269
Total	**708.5927**	**20.7564**	**1,021.4271**	**1.4809**		**109.3115**	**109.3115**		**109.3115**	**109.3115**	**11,520.0300**	**12,235.4643**	**23,755.4944**	**14.5662**	**0.9700**	**24,408.6986**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.3894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	87.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6094	13.7530	5.8523	0.0878		1.1119	1.1119		1.1119	1.1119	0.0000	17,556.9882	17,556.9882	0.3365	0.3219	17,661.3206
Landscaping	7.7682	2.9887	259.0054	0.0137		1.4420	1.4420		1.4420	1.4420		468.5467	468.5467	0.4472		479.7269
Total	**112.7161**	**16.7417**	**264.8578**	**0.1015**		**2.5539**	**2.5539**		**2.5539**	**2.5539**	**0.0000**	**18,025.5349**	**18,025.5349**	**0.7837**	**0.3219**	**18,141.0475**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Res. Int/Dens.

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	94.00	1000sqft	2.87	94,000.00	0
Elementary School	2,064.00	Student	20.00	172,557.36	0
High School	395.00	Student	18.00	52,401.09	0
Junior High School	566.00	Student	10.00	66,539.91	0
Library	16.00	1000sqft	0.51	16,000.00	0
City Park	148.00	Acre	148.00	6,446,880.00	0
Apartments Mid Rise	62.00	Dwelling Unit	2.18	62,000.00	229
Condo/Townhouse	2,205.00	Dwelling Unit	168.75	2,205,000.00	7432
Single Family Housing	882.00	Dwelling Unit	389.61	1,587,600.00	3303
Regional Shopping Center	150.00	1000sqft	4.59	150,000.00	0
Supermarket	19.00	1000sqft	0.57	19,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Residential Intensity-density reduced by 25% for this Alternative (compared to the proposed project).

Construction Phase - Construction not modeled for this scenario (Alternative)

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.16	2.87
tblLandUse	LotAcreage	3.96	20.00
tblLandUse	LotAcreage	1.20	18.00
tblLandUse	LotAcreage	1.53	10.00
tblLandUse	LotAcreage	0.37	0.51
tblLandUse	LotAcreage	1.63	2.18
tblLandUse	LotAcreage	137.81	168.75
tblLandUse	LotAcreage	286.36	389.61
tblLandUse	LotAcreage	3.44	4.59
tblLandUse	LotAcreage	0.44	0.57
tblLandUse	Population	177.00	229.00
tblLandUse	Population	6,306.00	7,432.00
tblLandUse	Population	2,523.00	3,303.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3904	33.4831	22.3660	0.0406	0.3158	1.6606	1.9764	0.0652	1.5437	1.6088	0.0000	3,932.365 4	3,932.365 4	1.0657	0.0000	3,959.008 7
2021	3.2374	31.6974	22.1234	0.0406	0.3159	1.5531	1.8691	0.0652	1.4427	1.5080	0.0000	3,927.719 2	3,927.719 2	1.0621	0.0000	3,954.270 6
2022	2.7062	25.9529	21.1043	0.0405	0.3161	1.2443	1.5603	0.0652	1.1568	1.2220	0.0000	3,921.590 2	3,921.590 2	1.0590	0.0000	3,948.066 2
2023	2.3303	21.6678	20.1058	0.0405	0.7296	0.9988	1.7284	0.1668	0.9292	1.0959	0.0000	3,916.033 4	3,916.033 4	1.0551	0.0000	3,942.412 1
Maximum	**3.3904**	**33.4831**	**22.3660**	**0.0406**	**0.7296**	**1.6606**	**1.9764**	**0.1668**	**1.5437**	**1.6088**	**0.0000**	**3,932.365 4**	**3,932.365 4**	**1.0657**	**0.0000**	**3,959.008 7**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3904	33.4831	22.3660	0.0406	0.2273	1.6606	1.8880	0.0518	1.5437	1.5954	0.0000	3,932.3654	3,932.3654	1.0657	0.0000	3,959.0087
2021	3.2374	31.6974	22.1234	0.0406	0.2275	1.5531	1.7806	0.0518	1.4427	1.4946	0.0000	3,927.7192	3,927.7192	1.0621	0.0000	3,954.2706
2022	2.7062	25.9529	21.1043	0.0405	0.2276	1.2443	1.4718	0.0518	1.1568	1.2086	0.0000	3,921.5902	3,921.5902	1.0590	0.0000	3,948.0662
2023	2.3303	21.6678	20.1058	0.0405	0.6412	0.9988	1.6400	0.1534	0.9292	1.0825	0.0000	3,916.0334	3,916.0334	1.0551	0.0000	3,942.4121
Maximum	**3.3904**	**33.4831**	**22.3660**	**0.0406**	**0.6412**	**1.6606**	**1.8880**	**0.1534**	**1.5437**	**1.5954**	**0.0000**	**3,932.3654**	**3,932.3654**	**1.0657**	**0.0000**	**3,959.0087**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**21.10**	**0.00**	**4.96**	**14.80**	**0.00**	**0.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	708.5927	20.7564	1,021.4271	1.4809		109.3115	109.3115		109.3115	109.3115	11,520.0300	12,235.4643	23,755.4944	14.5662	0.9700	24,408.6986
Energy	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
Mobile	35.2071	212.2209	408.9353	1.9213	214.9349	0.8668	215.8017	57.4978	0.8058	58.3036		195,810.7589	195,810.7589	7.2077		195,990.9508
Total	**746.0327**	**252.1895**	**1,439.4416**	**3.5241**	**214.9349**	**111.7210**	**326.6560**	**57.4978**	**111.6601**	**169.1579**	**11,520.0300**	**232,405.2891**	**243,925.3192**	**22.2407**	**1.4166**	**244,903.4690**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	112.7161	16.7417	264.8577	0.1015		2.5539	2.5539		2.5539	2.5539	0.0000	18,025.5349	18,025.5349	0.7837	0.3219	18,141.0475
Energy	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
Mobile	32.6712	201.6881	363.4732	1.6691	183.7694	0.7578	184.5272	49.1606	0.7044	49.8650		170,159.7107	170,159.7107	6.4752		170,321.5906
Total	**147.6202**	**237.6418**	**637.4101**	**1.8925**	**183.7694**	**4.8544**	**188.6238**	**49.1606**	**4.8010**	**53.9616**	**0.0000**	**212,544.3115**	**212,544.3115**	**7.7258**	**0.7685**	**212,966.4578**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	80.21	5.77	55.72	46.30	14.50	95.65	42.26	14.50	95.70	68.10	100.00	8.55	12.87	65.26	45.75	13.04

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	1/24/2023	5	800	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1609**	**1.6587**	**1.8196**	**0.0244**	**1.5419**	**1.5662**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1700e-003	0.2149	0.0457	5.7000e-004	0.0317	8.5000e-004	0.0326	8.1400e-003	8.1000e-004	8.9500e-003		60.4109	60.4109	2.3800e-003		60.4705
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0783**	**0.2821**	**0.6128**	**1.8200e-003**	**0.1549**	**1.9200e-003**	**0.1569**	**0.0408**	**1.7900e-003**	**0.0426**		**184.6605**	**184.6605**	**7.7800e-003**		**184.8551**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0724**	**1.6587**	**1.7311**	**0.0110**	**1.5419**	**1.5528**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1700e-003	0.2149	0.0457	5.7000e-004	0.0317	8.5000e-004	0.0326	8.1400e-003	8.1000e-004	8.9500e-003		60.4109	60.4109	2.3800e-003		60.4705
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0783**	**0.2821**	**0.6128**	**1.8200e-003**	**0.1549**	**1.9200e-003**	**0.1569**	**0.0408**	**1.7900e-003**	**0.0426**		**184.6605**	**184.6605**	**7.7800e-003**		**184.8551**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1609**	**1.5513**	**1.7122**	**0.0244**	**1.4411**	**1.4655**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7600e-003	0.1968	0.0436	5.6000e-004	0.0318	7.4000e-004	0.0326	8.1700e-003	7.1000e-004	8.8800e-003		59.6881	59.6881	2.3500e-003		59.7470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0723**	**0.2567**	**0.5584**	**1.7700e-003**	**0.1551**	**1.7700e-003**	**0.1568**	**0.0409**	**1.6600e-003**	**0.0425**		**179.7743**	**179.7743**	**7.1600e-003**		**179.9533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0724**	**1.5513**	**1.6237**	**0.0110**	**1.4411**	**1.4521**	**0.0000**	**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	5.7600e-003	0.1968	0.0436	5.6000e-004	0.0318	7.4000e-004	0.0326	8.1700e-003	7.1000e-004	8.8800e-003		59.6881	59.6881	2.3500e-003		59.7470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0723**	**0.2567**	**0.5584**	**1.7700e-003**	**0.1551**	**1.7700e-003**	**0.1568**	**0.0409**	**1.6600e-003**	**0.0425**		**179.7743**	**179.7743**	**7.1600e-003**		**179.9533**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1609**	**1.2427**	**1.4035**	**0.0244**	**1.1553**	**1.1796**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.3800e-003	0.1798	0.0415	5.6000e-004	0.0319	6.4000e-004	0.0326	8.1900e-003	6.1000e-004	8.8000e-003		58.9486	58.9486	2.3200e-003		59.0065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0671**	**0.2335**	**0.5102**	**1.7200e-003**	**0.1552**	**1.6300e-003**	**0.1568**	**0.0409**	**1.5200e-003**	**0.0424**		**174.8091**	**174.8091**	**6.6100e-003**		**174.9742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0724**	**1.2427**	**1.3151**	**0.0110**	**1.1553**	**1.1662**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.3800e-003	0.1798	0.0415	5.6000e-004	0.0319	6.4000e-004	0.0326	8.1900e-003	6.1000e-004	8.8000e-003		58.9486	58.9486	2.3200e-003		59.0065
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0671**	**0.2335**	**0.5102**	**1.7200e-003**	**0.1552**	**1.6300e-003**	**0.1568**	**0.0409**	**1.5200e-003**	**0.0424**		**174.8091**	**174.8091**	**6.6100e-003**		**174.9742**

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1609	0.0000	0.1609	0.0244	0.0000	0.0244			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.1609**	**0.9975**	**1.1584**	**0.0244**	**0.9280**	**0.9524**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9500e-003	0.1352	0.0366	5.4000e-004	0.4455	3.1000e-004	0.4458	0.1097	3.0000e-004	0.1100		57.4811	57.4811	1.9600e-003		57.5302
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0481	0.4259	1.1200e-003	0.1232	9.6000e-004	0.1242	0.0327	8.9000e-004	0.0336		111.5683	111.5683	3.8100e-003		111.6637
Total	**0.0612**	**0.1834**	**0.4625**	**1.6600e-003**	**0.5688**	**1.2700e-003**	**0.5700**	**0.1424**	**1.1900e-003**	**0.1436**		**169.0494**	**169.0494**	**5.7700e-003**		**169.1938**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0724	0.0000	0.0724	0.0110	0.0000	0.0110			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.0724**	**0.9975**	**1.0699**	**0.0110**	**0.9280**	**0.9390**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.9500e-003	0.1352	0.0366	5.4000e-004	0.4455	3.1000e-004	0.4458	0.1097	3.0000e-004	0.1100		57.4811	57.4811	1.9600e-003		57.5302
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0481	0.4259	1.1200e-003	0.1232	9.6000e-004	0.1242	0.0327	8.9000e-004	0.0336		111.5683	111.5683	3.8100e-003		111.6637
Total	**0.0612**	**0.1834**	**0.4625**	**1.6600e-003**	**0.5688**	**1.2700e-003**	**0.5700**	**0.1424**	**1.1900e-003**	**0.1436**		**169.0494**	**169.0494**	**5.7700e-003**		**169.1938**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	32.6712	201.6881	363.4732	1.6691	183.7694	0.7578	184.5272	49.1606	0.7044	49.8650		170,159.7107	170,159.7107	6.4752		170,321.5906
Unmitigated	35.2071	212.2209	408.9353	1.9213	214.9349	0.8668	215.8017	57.4978	0.8058	58.3036		195,810.7589	195,810.7589	7.2077		195,990.9508

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	412.30	396.18	363.32	1,160,998	992,653
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	12,811.05	12,502.35	10672.20	35,899,909	30,694,422
Elementary School	2,662.56	0.00	0.00	4,193,416	3,585,371
General Office Building	1,036.82	231.24	98.70	1,882,456	1,609,500
High School	675.45	240.95	98.75	1,390,225	1,188,642
Junior High School	916.92	0.00	0.00	1,472,439	1,258,935
Library	899.84	744.80	407.84	1,368,437	1,170,014
Regional Shopping Center	6,405.00	7,495.50	3786.00	10,847,071	9,274,246
Single Family Housing	8,396.64	8,740.62	7602.84	24,004,661	20,523,985
Supermarket	1,942.56	3,374.21	3162.36	2,640,392	2,257,535
Total	36,438.86	37,092.85	28,669.53	87,069,003	74,443,998

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197
NaturalGas Unmitigated	2.2329	19.2121	9.0792	0.1218		1.5427	1.5427		1.5427	1.5427		24,359.0659	24,359.0659	0.4669	0.4466	24,503.8197

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1467.52	0.0158	0.1352	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109		172.6498	172.6498	3.3100e-003	3.1700e-003	173.6757
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	113107	1.2198	10.4236	4.4356	0.0665		0.8428	0.8428		0.8428	0.8428		13,306.7646	13,306.7646	0.2551	0.2440	13,385.8400
Elementary School	8717.69	0.0940	0.8547	0.7179	5.1300e-003		0.0650	0.0650		0.0650	0.0650		1,025.6109	1,025.6109	0.0197	0.0188	1,031.7056
General Office Building	4215.84	0.0455	0.4133	0.3472	2.4800e-003		0.0314	0.0314		0.0314	0.0314		495.9807	495.9807	9.5100e-003	9.0900e-003	498.9280
High School	2647.33	0.0286	0.2595	0.2180	1.5600e-003		0.0197	0.0197		0.0197	0.0197		311.4508	311.4508	5.9700e-003	5.7100e-003	313.3016
Junior High School	3361.63	0.0363	0.3296	0.2768	1.9800e-003		0.0251	0.0251		0.0251	0.0251		395.4862	395.4862	7.5800e-003	7.2500e-003	397.8364
Library	1156.38	0.0125	0.1134	0.0952	6.8000e-004		8.6200e-003	8.6200e-003		8.6200e-003	8.6200e-003		136.0451	136.0451	2.6100e-003	2.4900e-003	136.8536
Regional Shopping Center	973.973	0.0105	0.0955	0.0802	5.7000e-004		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		114.5850	114.5850	2.2000e-003	2.1000e-003	115.2659
Single Family Housing	70234	0.7574	6.4725	2.7543	0.0413		0.5233	0.5233		0.5233	0.5233		8,262.8233	8,262.8233	0.1584	0.1515	8,311.9252
Supermarket	1170.19	0.0126	0.1147	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003		137.6696	137.6696	2.6400e-003	2.5200e-003	138.4877
Total		**2.2329**	**19.2121**	**9.0792**	**0.1218**		**1.5428**	**1.5428**		**1.5428**	**1.5428**		**24,359.0659**	**24,359.0659**	**0.4669**	**0.4466**	**24,503.8197**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.46752	0.0158	0.1352	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109		172.6498	172.6498	3.3100e-003	3.1700e-003	173.6757
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	113.107	1.2198	10.4236	4.4356	0.0665		0.8428	0.8428		0.8428	0.8428		13,306.7646	13,306.7646	0.2551	0.2440	13,385.8400
Elementary School	8.71769	0.0940	0.8547	0.7179	5.1300e-003		0.0650	0.0650		0.0650	0.0650		1,025.6109	1,025.6109	0.0197	0.0188	1,031.7056
General Office Building	4.21584	0.0455	0.4133	0.3472	2.4800e-003		0.0314	0.0314		0.0314	0.0314		495.9807	495.9807	9.5100e-003	9.0900e-003	498.9280
High School	2.64733	0.0286	0.2595	0.2180	1.5600e-003		0.0197	0.0197		0.0197	0.0197		311.4508	311.4508	5.9700e-003	5.7100e-003	313.3016
Junior High School	3.36163	0.0363	0.3296	0.2768	1.9800e-003		0.0251	0.0251		0.0251	0.0251		395.4862	395.4862	7.5800e-003	7.2500e-003	397.8364
Library	1.15638	0.0125	0.1134	0.0952	6.8000e-004		8.6200e-003	8.6200e-003		8.6200e-003	8.6200e-003		136.0451	136.0451	2.6100e-003	2.4900e-003	136.8536
Regional Shopping Center	0.973973	0.0105	0.0955	0.0802	5.7000e-004		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003		114.5850	114.5850	2.2000e-003	2.1000e-003	115.2659
Single Family Housing	70.234	0.7574	6.4725	2.7543	0.0413		0.5233	0.5233		0.5233	0.5233		8,262.8233	8,262.8233	0.1584	0.1515	8,311.9252
Supermarket	1.17019	0.0126	0.1147	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003		137.6696	137.6696	2.6400e-003	2.5200e-003	138.4877
Total		**2.2329**	**19.2121**	**9.0792**	**0.1218**		**1.5428**	**1.5428**		**1.5428**	**1.5428**		**24,359.0659**	**24,359.0659**	**0.4669**	**0.4466**	**24,503.8197**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	112.7161	16.7417	264.8577	0.1015		2.5539	2.5539		2.5539	2.5539	0.0000	18,025.5349	18,025.5349	0.7837	0.3219	18,141.0475
Unmitigated	708.5927	20.7564	1,021.4271	1.4809		109.3115	109.3115		109.3115	109.3115	11,520.0300	12,235.4643	23,755.4944	14.5662	0.9700	24,408.6986

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.3894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	95.0293					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	590.4059	17.7677	762.4217	1.4672		107.8696	107.8696		107.8696	107.8696	11,520.0300	11,766.9177	23,286.9477	14.1190	0.9700	23,928.9717
Landscaping	7.7682	2.9887	259.0054	0.0137		1.4420	1.4420		1.4420	1.4420		468.5467	468.5467	0.4472		479.7269
Total	**708.5927**	**20.7564**	**1,021.4271**	**1.4809**		**109.3115**	**109.3115**		**109.3115**	**109.3115**	**11,520.0300**	**12,235.4643**	**23,755.4944**	**14.5662**	**0.9700**	**24,408.6986**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.3894					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	87.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6094	13.7530	5.8523	0.0878		1.1119	1.1119		1.1119	1.1119	0.0000	17,556.9882	17,556.9882	0.3365	0.3219	17,661.3206
Landscaping	7.7682	2.9887	259.0054	0.0137		1.4420	1.4420		1.4420	1.4420		468.5467	468.5467	0.4472		479.7269
Total	**112.7161**	**16.7417**	**264.8578**	**0.1015**		**2.5539**	**2.5539**		**2.5539**	**2.5539**	**0.0000**	**18,025.5349**	**18,025.5349**	**0.7837**	**0.3219**	**18,141.0475**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Land Area Alt.

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.46	125,000.00	0
Elementary School	2,753.00	Student	17.16	230,160.08	0
High School	526.00	Student	15.44	69,779.67	0
Junior High School	754.00	Student	8.58	88,641.51	0
Library	22.00	1000sqft	0.44	22,000.00	0
City Park	148.00	Acre	126.97	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	1.87	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	144.77	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	334.24	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	3.94	200,000.00	0
Supermarket	25.00	1000sqft	0.49	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Lot acreages were reduced proportionally based on the reduced land area compared with the proposed project (14.211%).

Construction Phase - Construction emissions not modeled for the alternatives.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.87	2.46
tblLandUse	LotAcreage	5.28	17.16
tblLandUse	LotAcreage	1.60	15.44
tblLandUse	LotAcreage	2.03	8.58
tblLandUse	LotAcreage	0.51	0.44
tblLandUse	LotAcreage	148.00	126.97
tblLandUse	LotAcreage	2.18	1.87
tblLandUse	LotAcreage	168.75	144.77
tblLandUse	LotAcreage	389.61	334.24
tblLandUse	LotAcreage	4.59	3.94
tblLandUse	LotAcreage	0.57	0.49
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4434	4.3894	2.9278	5.3400e-003	0.0438	0.2176	0.2613	8.8500e-003	0.2022	0.2111	0.0000	468.5342	468.5342	0.1267	0.0000	471.7012
2021	0.4218	4.1394	2.8852	5.3100e-003	0.0436	0.2027	0.2463	8.8200e-003	0.1883	0.1971	0.0000	466.1810	466.1810	0.1258	0.0000	469.3250
2022	0.2391	2.2987	1.8667	3.6000e-003	0.0308	0.1101	0.1409	6.2700e-003	0.1024	0.1087	0.0000	315.6434	315.6434	0.0850	0.0000	317.7695
Maximum	**0.4434**	**4.3894**	**2.9278**	**5.3400e-003**	**0.0438**	**0.2176**	**0.2613**	**8.8500e-003**	**0.2022**	**0.2111**	**0.0000**	**468.5342**	**468.5342**	**0.1267**	**0.0000**	**471.7012**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4434	4.3894	2.9278	5.3400e-003	0.0305	0.2176	0.2481	6.8500e-003	0.2022	0.2091	0.0000	468.5337	468.5337	0.1267	0.0000	471.7006
2021	0.4218	4.1394	2.8852	5.3100e-003	0.0304	0.2027	0.2331	6.8200e-003	0.1883	0.1951	0.0000	466.1805	466.1805	0.1258	0.0000	469.3245
2022	0.2391	2.2987	1.8666	3.6000e-003	0.0218	0.1101	0.1319	4.9100e-003	0.1024	0.1073	0.0000	315.6430	315.6430	0.0850	0.0000	317.7691
Maximum	**0.4434**	**4.3894**	**2.9278**	**5.3400e-003**	**0.0305**	**0.2176**	**0.2481**	**6.8500e-003**	**0.2022**	**0.2091**	**0.0000**	**468.5337**	**468.5337**	**0.1267**	**0.0000**	**471.7006**

Salinas CASP Model Full Buildout (2040) - Reduced Land Area Alt. - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.97	0.00	5.46	22.39	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.1994	1.1994
2	4-1-2020	6-30-2020	1.1986	1.1986
3	7-1-2020	9-30-2020	1.2118	1.2118
4	10-1-2020	12-31-2020	1.2126	1.2126
5	1-1-2021	3-31-2021	1.1238	1.1238
6	4-1-2021	6-30-2021	1.1356	1.1356
7	7-1-2021	9-30-2021	1.1481	1.1481
8	10-1-2021	12-31-2021	1.1488	1.1488
9	1-1-2022	3-31-2022	0.9220	0.9220
10	4-1-2022	6-30-2022	0.9316	0.9316
11	7-1-2022	9-30-2022	0.6962	0.6962
		Highest	1.2126	1.2126

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	60.1203	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6721	1,245.6416	0.7786	0.0491	1,279.7350
Energy	0.5229	4.5003	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.9744	5,174.9744	0.0992	0.0949	5,205.7267
Mobile	7.1111	41.7533	78.0688	0.3900	41.9619	0.1738	42.1357	11.2561	0.1615	11.4177	0.0000	36,067.2436	36,067.2436	1.2690	0.0000	36,098.9677
Waste						0.0000	0.0000		0.0000	0.0000	904.1624	0.0000	904.1624	53.4345	0.0000	2,240.0239
Water						0.0000	0.0000		0.0000	0.0000	98.7068	0.0000	98.7068	10.1381	0.2394	423.4962
Total	**67.7544**	**47.7173**	**163.6860**	**0.5026**	**41.9619**	**6.7802**	**48.7421**	**11.2561**	**6.7680**	**18.0241**	**1,585.8386**	**41,904.8900**	**43,490.7287**	**65.7194**	**0.3833**	**45,247.9495**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	25.6105	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Energy	0.5229	4.5003	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.974 4	5,174.974 4	0.0992	0.0949	5,205.726 7
Mobile	6.6084	39.7158	69.0802	0.3390	35.8774	0.1518	36.0292	9.6240	0.1411	9.7651	0.0000	31,359.50 41	31,359.50 41	1.1364	0.0000	31,387.91 42
Waste						0.0000	0.0000		0.0000	0.0000	904.1624	0.0000	904.1624	53.4345	0.0000	2,240.023 9
Water						0.0000	0.0000		0.0000	0.0000	78.9654	0.0000	78.9654	8.1105	0.1915	338.7969
Total	**32.7417**	**45.4558**	**112.4943**	**0.3746**	**35.8774**	**0.8031**	**36.6805**	**9.6240**	**0.7924**	**10.4164**	**983.1278**	**37,490.15 63**	**38,473.28 40**	**62.8617**	**0.3027**	**40,135.02 32**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**51.68**	**4.74**	**31.27**	**25.46**	**14.50**	**88.16**	**24.75**	**14.50**	**88.29**	**42.21**	**38.01**	**10.54**	**11.54**	**4.35**	**21.04**	**11.30**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	9/6/2022	5	700	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3818	445.3818	0.1257	0.0000	448.5250
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**0.0241**	**0.2173**	**0.2414**	**3.6500e-003**	**0.2020**	**0.2056**	**0.0000**	**445.3818**	**445.3818**	**0.1257**	**0.0000**	**448.5250**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1000e-004	0.0321	6.5300e-003	9.0000e-005	4.0700e-003	1.2000e-004	4.1900e-003	1.0500e-003	1.2000e-004	1.1700e-003	0.0000	8.3002	8.3002	3.1000e-004	0.0000	8.3080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.5100e-003**	**0.0401**	**0.0781**	**2.5000e-004**	**0.0197**	**2.6000e-004**	**0.0199**	**5.2000e-003**	**2.5000e-004**	**5.4500e-003**	**0.0000**	**23.1525**	**23.1525**	**9.5000e-004**	**0.0000**	**23.1762**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0108	0.0000	0.0108	1.6400e-003	0.0000	1.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3812	445.3812	0.1257	0.0000	448.5244
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**0.0108**	**0.2173**	**0.2281**	**1.6400e-003**	**0.2020**	**0.2036**	**0.0000**	**445.3812**	**445.3812**	**0.1257**	**0.0000**	**448.5244**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.1000e-004	0.0321	6.5300e-003	9.0000e-005	4.0700e-003	1.2000e-004	4.1900e-003	1.0500e-003	1.2000e-004	1.1700e-003	0.0000	8.3002	8.3002	3.1000e-004	0.0000	8.3080
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.5100e-003**	**0.0401**	**0.0781**	**2.5000e-004**	**0.0197**	**2.6000e-004**	**0.0199**	**5.2000e-003**	**2.5000e-004**	**5.4500e-003**	**0.0000**	**23.1525**	**23.1525**	**9.5000e-004**	**0.0000**	**23.1762**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0240	0.0000	0.0240	3.6300e-003	0.0000	3.6300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7102	443.7102	0.1249	0.0000	446.8324
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**0.0240**	**0.2025**	**0.2265**	**3.6300e-003**	**0.1881**	**0.1917**	**0.0000**	**443.7102**	**443.7102**	**0.1249**	**0.0000**	**446.8324**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4000e-004	0.0293	6.2100e-003	8.0000e-005	4.0700e-003	1.1000e-004	4.1800e-003	1.0500e-003	1.0000e-004	1.1600e-003	0.0000	8.1710	8.1710	3.1000e-004	0.0000	8.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.7400e-003**	**0.0364**	**0.0710**	**2.4000e-004**	**0.0196**	**2.4000e-004**	**0.0199**	**5.1900e-003**	**2.2000e-004**	**5.4200e-003**	**0.0000**	**22.4707**	**22.4707**	**8.8000e-004**	**0.0000**	**22.4926**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0108	0.0000	0.0108	1.6400e-003	0.0000	1.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7097	443.7097	0.1249	0.0000	446.8319
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**0.0108**	**0.2025**	**0.2133**	**1.6400e-003**	**0.1881**	**0.1897**	**0.0000**	**443.7097**	**443.7097**	**0.1249**	**0.0000**	**446.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4000e-004	0.0293	6.2100e-003	8.0000e-005	4.0700e-003	1.1000e-004	4.1800e-003	1.0500e-003	1.0000e-004	1.1600e-003	0.0000	8.1710	8.1710	3.1000e-004	0.0000	8.1786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.7400e-003**	**0.0364**	**0.0710**	**2.4000e-004**	**0.0196**	**2.4000e-004**	**0.0199**	**5.1900e-003**	**2.2000e-004**	**5.4200e-003**	**0.0000**	**22.4707**	**22.4707**	**8.8000e-004**	**0.0000**	**22.4926**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0163	0.0000	0.0163	2.4600e-003	0.0000	2.4600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2336	2.2762	1.8226	3.4400e-003		0.1100	0.1100		0.1022	0.1022	0.0000	300.8135	300.8135	0.0845	0.0000	302.9259
Total	**0.2336**	**2.2762**	**1.8226**	**3.4400e-003**	**0.0163**	**0.1100**	**0.1262**	**2.4600e-003**	**0.1022**	**0.1047**	**0.0000**	**300.8135**	**300.8135**	**0.0845**	**0.0000**	**302.9259**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0182	4.0100e-003	6.0000e-005	3.9200e-003	6.0000e-005	3.9900e-003	1.0000e-003	6.0000e-005	1.0600e-003	0.0000	5.4736	5.4736	2.0000e-004	0.0000	5.4787
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	4.3200e-003	0.0401	1.0000e-004	0.0106	9.0000e-005	0.0106	2.8000e-003	8.0000e-005	2.8900e-003	0.0000	9.3563	9.3563	3.4000e-004	0.0000	9.3649
Total	**5.5000e-003**	**0.0225**	**0.0441**	**1.6000e-004**	**0.0145**	**1.5000e-004**	**0.0146**	**3.8000e-003**	**1.4000e-004**	**3.9500e-003**	**0.0000**	**14.8299**	**14.8299**	**5.4000e-004**	**0.0000**	**14.8436**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.3200e-003	0.0000	7.3200e-003	1.1100e-003	0.0000	1.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2336	2.2762	1.8226	3.4400e-003		0.1100	0.1100		0.1022	0.1022	0.0000	300.8132	300.8132	0.0845	0.0000	302.9255
Total	**0.2336**	**2.2762**	**1.8226**	**3.4400e-003**	**7.3200e-003**	**0.1100**	**0.1173**	**1.1100e-003**	**0.1022**	**0.1034**	**0.0000**	**300.8132**	**300.8132**	**0.0845**	**0.0000**	**302.9255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0182	4.0100e-003	6.0000e-005	3.9200e-003	6.0000e-005	3.9900e-003	1.0000e-003	6.0000e-005	1.0600e-003	0.0000	5.4736	5.4736	2.0000e-004	0.0000	5.4787
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9700e-003	4.3200e-003	0.0401	1.0000e-004	0.0106	9.0000e-005	0.0106	2.8000e-003	8.0000e-005	2.8900e-003	0.0000	9.3563	9.3563	3.4000e-004	0.0000	9.3649
Total	**5.5000e-003**	**0.0225**	**0.0441**	**1.6000e-004**	**0.0145**	**1.5000e-004**	**0.0146**	**3.8000e-003**	**1.4000e-004**	**3.9500e-003**	**0.0000**	**14.8299**	**14.8299**	**5.4000e-004**	**0.0000**	**14.8436**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.6084	39.7158	69.0802	0.3390	35.8774	0.1518	36.0292	9.6240	0.1411	9.7651	0.0000	31,359.5041	31,359.5041	1.1364	0.0000	31,387.9142
Unmitigated	7.1111	41.7533	78.0688	0.3900	41.9619	0.1738	42.1357	11.2561	0.1615	11.4177	0.0000	36,067.2436	36,067.2436	1.2690	0.0000	36,098.9677

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,551.37	0.00	0.00	5,593,253	4,782,232
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,327.01	47,184.58	36,408.43	112,109,600	95,853,708

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.5229	4.5003	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.974 4	5,174.974 4	0.0992	0.0949	5,205.726 7
NaturalGas Unmitigated	0.5229	4.5003	2.1350	0.0285		0.3613	0.3613		0.3613	0.3613	0.0000	5,174.974 4	5,174.974 4	0.0992	0.0949	5,205.726 7

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24415e+006	0.0229	0.2081	0.1748	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4841	226.4841	4.3400e-003	4.1500e-003	227.8300
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.9744**	**5,174.9744**	**0.0992**	**0.0949**	**5,205.7267**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	717074	3.8700e-003	0.0330	0.0141	2.1000e-004		2.6700e-003	2.6700e-003		2.6700e-003	2.6700e-003	0.0000	38.2658	38.2658	7.3000e-004	7.0000e-004	38.4932
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.05521e+007	0.2726	2.3294	0.9912	0.0149		0.1883	0.1883		0.1883	0.1883	0.0000	2,697.6540	2,697.6540	0.0517	0.0495	2,713.6848
Elementary School	4.24415e+006	0.0229	0.2081	0.1748	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.4841	226.4841	4.3400e-003	4.1500e-003	227.8300
General Office Building	2.04625e+006	0.0110	0.1003	0.0843	6.0000e-004		7.6200e-003	7.6200e-003		7.6200e-003	7.6200e-003	0.0000	109.1957	109.1957	2.0900e-003	2.0000e-003	109.8446
High School	1.28674e+006	6.9400e-003	0.0631	0.0530	3.8000e-004		4.7900e-003	4.7900e-003		4.7900e-003	4.7900e-003	0.0000	68.6652	68.6652	1.3200e-003	1.2600e-003	69.0732
Junior High School	1.63455e+006	8.8100e-003	0.0801	0.0673	4.8000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	87.2258	87.2258	1.6700e-003	1.6000e-003	87.7441
Library	580360	3.1300e-003	0.0285	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	30.9702	30.9702	5.9000e-004	5.7000e-004	31.1543
Regional Shopping Center	474000	2.5600e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2945	25.2945	4.8000e-004	4.6000e-004	25.4448
Single Family Housing	3.48781e+007	0.1881	1.6071	0.6839	0.0103		0.1299	0.1299		0.1299	0.1299	0.0000	1,861.2287	1,861.2287	0.0357	0.0341	1,872.2890
Supermarket	562000	3.0300e-003	0.0276	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9905	29.9905	5.7000e-004	5.5000e-004	30.1687
Total		**0.5229**	**4.5003**	**2.1350**	**0.0285**		**0.3613**	**0.3613**		**0.3613**	**0.3613**	**0.0000**	**5,174.9744**	**5,174.9744**	**0.0992**	**0.0949**	**5,205.7267**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e +007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24056e +006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e +006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e +006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e +006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	342653	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.36227e +007	0.0000	0.0000	0.0000	0.0000
Elementary School	1.24056e +006	0.0000	0.0000	0.0000	0.0000
General Office Building	2.22875e +006	0.0000	0.0000	0.0000	0.0000
High School	376112	0.0000	0.0000	0.0000	0.0000
Junior High School	477778	0.0000	0.0000	0.0000	0.0000
Library	181720	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.138e +006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	9.70868e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	1.02575e +006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	25.6105	1.2397	41.2791	7.0700e-003		0.2900	0.2900		0.2900	0.2900	0.0000	955.6778	955.6778	0.0812	0.0163	962.5614
Unmitigated	60.1203	1.4637	83.4823	0.0840		6.2452	6.2452		6.2452	6.2452	582.9695	662.6721	1,245.6416	0.7786	0.0491	1,279.7350

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6218					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	22.3360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	32.9342	0.9911	42.5297	0.0818		6.0172	6.0172		6.0172	6.0172	582.9695	595.4633	1,178.4328	0.7145	0.0491	1,210.9223
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**60.1203**	**1.4637**	**83.4823**	**0.0840**		**6.2452**	**6.2452**		**6.2452**	**6.2452**	**582.9695**	**662.6721**	**1,245.6416**	**0.7787**	**0.0491**	**1,279.7350**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.6218					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	20.6705					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0898	0.7672	0.3265	4.9000e-003		0.0620	0.0620		0.0620	0.0620	0.0000	888.4690	888.4690	0.0170	0.0163	893.7487
Landscaping	1.2284	0.4726	40.9526	2.1700e-003		0.2280	0.2280		0.2280	0.2280	0.0000	67.2088	67.2088	0.0642	0.0000	68.8127
Total	**25.6105**	**1.2397**	**41.2791**	**7.0700e-003**		**0.2900**	**0.2900**		**0.2900**	**0.2900**	**0.0000**	**955.6778**	**955.6778**	**0.0812**	**0.0163**	**962.5614**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	78.9654	8.1105	0.1915	338.7969
Unmitigated	98.7068	10.1381	0.2394	423.4962

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.40778 / 3.40926	1.7156	0.1762	4.1600e-003	7.3609
City Park	0 / 176.339	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	175.916 / 110.903	55.8100	5.7322	0.1354	239.4499
Elementary School	6.67393 / 17.1615	2.1173	0.2175	5.1300e-003	9.0843
General Office Building	22.2167 / 13.6167	7.0483	0.7239	0.0171	30.2405
High School	2.31701 / 5.95802	0.7351	0.0755	1.7800e-003	3.1538
Junior High School	1.82788 / 4.70026	0.5799	0.0596	1.4100e-003	2.4880
Library	0.688356 / 1.07666	0.2184	0.0224	5.3000e-004	0.9370
Regional Shopping Center	14.8145 / 9.07986	4.7000	0.4827	0.0114	20.1649
Single Family Housing	78.1848 / 49.2904	24.8044	2.5477	0.0602	106.4222
Supermarket	3.08171 / 0.0953105	0.9777	0.1004	2.3700e-003	4.1947
Total		**98.7067**	**10.1381**	**0.2394**	**423.4962**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.32623 / 3.20129	1.3725	0.1410	3.3300e-003	5.8887
City Park	0 / 165.583	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	140.733 / 104.138	44.6480	4.5858	0.1083	191.5599
Elementary School	5.33915 / 16.1147	1.6939	0.1740	4.1100e-003	7.2674
General Office Building	17.7734 / 12.7861	5.6387	0.5792	0.0137	24.1924
High School	1.85361 / 5.59458	0.5881	0.0604	1.4300e-003	2.5231
Junior High School	1.4623 / 4.41354	0.4639	0.0477	1.1300e-003	1.9904
Library	0.550685 / 1.01098	0.1747	0.0179	4.2000e-004	0.7496
Regional Shopping Center	11.8516 / 8.52599	3.7600	0.3862	9.1200e-003	16.1319
Single Family Housing	62.5479 / 46.2837	19.8436	2.0381	0.0481	85.1377
Supermarket	2.46536 / 0.0894965	0.7822	0.0803	1.9000e-003	3.3558
Total		**78.9654**	**8.1105**	**0.1915**	**338.7969**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	904.1624	53.4345	0.0000	2,240.0239
Unmitigated	904.1624	53.4345	0.0000	2,240.0239

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.42	101.9867	6.0272	0.0000	252.6678
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1624**	**53.4345**	**0.0000**	**2,240.0240**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	38.18	7.7502	0.4580	0.0000	19.2008
City Park	12.73	2.5841	0.1527	0.0000	6.4019
Condo/Townhouse	1242	252.1148	14.8996	0.0000	624.6037
Elementary School	502.42	101.9867	6.0272	0.0000	252.6678
General Office Building	116.25	23.5977	1.3946	0.0000	58.4623
High School	96	19.4871	1.1517	0.0000	48.2786
Junior High School	137.6	27.9316	1.6507	0.0000	69.1993
Library	20.26	4.1126	0.2431	0.0000	10.1888
Regional Shopping Center	210	42.6281	2.5193	0.0000	105.6093
Single Family Housing	1937.76	393.3478	23.2462	0.0000	974.5025
Supermarket	141	28.6217	1.6915	0.0000	70.9091
Total		**904.1624**	**53.4345**	**0.0000**	**2,240.0240**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Land Area Alt.

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.46	125,000.00	0
Elementary School	2,753.00	Student	17.16	230,160.08	0
High School	526.00	Student	15.44	69,779.67	0
Junior High School	754.00	Student	8.58	88,641.51	0
Library	22.00	1000sqft	0.44	22,000.00	0
City Park	148.00	Acre	126.97	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	1.87	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	144.77	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	334.24	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	3.94	200,000.00	0
Supermarket	25.00	1000sqft	0.49	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Lot acreages were reduced proportionally based on the reduced land area compared with the proposed project (14.211%).

Construction Phase - Construction emissions not modeled for the alternatives.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.87	2.46
tblLandUse	LotAcreage	5.28	17.16
tblLandUse	LotAcreage	1.60	15.44
tblLandUse	LotAcreage	2.03	8.58
tblLandUse	LotAcreage	0.51	0.44
tblLandUse	LotAcreage	148.00	126.97
tblLandUse	LotAcreage	2.18	1.87
tblLandUse	LotAcreage	168.75	144.77
tblLandUse	LotAcreage	389.61	334.24
tblLandUse	LotAcreage	4.59	3.94
tblLandUse	LotAcreage	0.57	0.49
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3852	33.4943	22.3778	0.0408	0.3392	1.6607	2.0000	0.0688	1.5437	1.6126	0.0000	3,950.828 8	3,950.828 8	1.0662	0.0000	3,977.482 8
2021	3.2326	31.7084	22.1360	0.0408	0.3394	1.5532	1.8926	0.0689	1.4428	1.5117	0.0000	3,945.799 9	3,945.799 9	1.0625	0.0000	3,972.361 5
2022	2.7018	25.9635	21.1175	0.0407	0.3530	1.2444	1.5974	0.0722	1.1569	1.2291	0.0000	3,939.280 3	3,939.280 3	1.0594	0.0000	3,965.765 9
Maximum	**3.3852**	**33.4943**	**22.3778**	**0.0408**	**0.3530**	**1.6607**	**2.0000**	**0.0722**	**1.5437**	**1.6126**	**0.0000**	**3,950.828 8**	**3,950.828 8**	**1.0662**	**0.0000**	**3,977.482 8**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3852	33.4943	22.3778	0.0408	0.2381	1.6607	1.8988	0.0535	1.5437	1.5973	0.0000	3,950.828 8	3,950.828 8	1.0662	0.0000	3,977.482 8
2021	3.2326	31.7084	22.1360	0.0408	0.2382	1.5532	1.7914	0.0535	1.4428	1.4964	0.0000	3,945.799 9	3,945.799 9	1.0625	0.0000	3,972.361 5
2022	2.7018	25.9635	21.1175	0.0407	0.2519	1.2444	1.4963	0.0569	1.1569	1.2138	0.0000	3,939.280 3	3,939.280 3	1.0594	0.0000	3,965.765 9
Maximum	**3.3852**	**33.4943**	**22.3778**	**0.0408**	**0.2519**	**1.6607**	**1.8988**	**0.0569**	**1.5437**	**1.5973**	**0.0000**	**3,950.828 8**	**3,950.828 8**	**1.0662**	**0.0000**	**3,977.482 8**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.41	0.00	5.53	21.90	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3346	27.9542	1,364.9293	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0920	32,275.6023	19.7752	1.3197	33,163.2482
Energy	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118
Mobile	49.8793	264.7612	508.7095	2.5876	274.3896	1.1037	275.4933	73.4027	1.0259	74.4286		263,661.9526	263,661.9526	8.8235		263,882.5390
Total	**1,008.0791**	**317.3747**	**1,885.3376**	**4.7575**	**274.3896**	**151.6685**	**426.0581**	**73.4027**	**151.5908**	**224.9935**	**15,673.5102**	**311,521.2107**	**327,194.7209**	**29.1978**	**1.8927**	**328,488.6990**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1252	22.4920	335.5833	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7391	24,479.7391	1.0236	0.4379	24,635.8318
Energy	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118
Mobile	46.7071	252.7400	447.4454	2.2501	234.6031	0.9645	235.5677	62.7593	0.8964	63.6557		229,360.4100	229,360.4100	7.8878		229,557.6049
Total	**194.6976**	**299.8913**	**794.7275**	**2.5432**	**234.6031**	**6.2809**	**240.8840**	**62.7593**	**6.2128**	**68.9721**	**0.0000**	**285,097.3152**	**285,097.3152**	**9.5105**	**1.0110**	**285,636.3484**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	80.69	5.51	57.85	46.54	14.50	95.86	43.46	14.50	95.90	69.34	100.00	8.48	12.87	67.43	46.59	13.05

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	9/6/2022	5	700	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1839**	**1.6587**	**1.8426**	**0.0279**	**1.5419**	**1.5697**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8300e-003	0.2400	0.0483	6.6000e-004	0.0321	9.4000e-004	0.0331	8.2900e-003	9.0000e-004	9.2000e-003		70.4234	70.4234	2.5500e-003		70.4871
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0731**	**0.2933**	**0.6246**	**1.9900e-003**	**0.1554**	**2.0100e-003**	**0.1574**	**0.0410**	**1.8800e-003**	**0.0429**		**203.1239**	**203.1239**	**8.2200e-003**		**203.3292**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0827**	**1.6587**	**1.7414**	**0.0125**	**1.5419**	**1.5544**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8300e-003	0.2400	0.0483	6.6000e-004	0.0321	9.4000e-004	0.0331	8.2900e-003	9.0000e-004	9.2000e-003		70.4234	70.4234	2.5500e-003		70.4871
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0731**	**0.2933**	**0.6246**	**1.9900e-003**	**0.1554**	**2.0100e-003**	**0.1574**	**0.0410**	**1.8800e-003**	**0.0429**		**203.1239**	**203.1239**	**8.2200e-003**		**203.3292**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1839**	**1.5513**	**1.7352**	**0.0279**	**1.4411**	**1.4689**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3700e-003	0.2201	0.0460	6.6000e-004	0.0323	8.3000e-004	0.0331	8.3200e-003	7.9000e-004	9.1100e-003		69.6006	69.6006	2.5100e-003		69.6634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0675**	**0.2677**	**0.5710**	**1.9500e-003**	**0.1555**	**1.8600e-003**	**0.1573**	**0.0410**	**1.7400e-003**	**0.0427**		**197.8550**	**197.8550**	**7.5600e-003**		**198.0441**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0827**	**1.5513**	**1.6341**	**0.0125**	**1.4411**	**1.4536**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3700e-003	0.2201	0.0460	6.6000e-004	0.0323	8.3000e-004	0.0331	8.3200e-003	7.9000e-004	9.1100e-003		69.6006	69.6006	2.5100e-003		69.6634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0675**	**0.2677**	**0.5710**	**1.9500e-003**	**0.1555**	**1.8600e-003**	**0.1573**	**0.0410**	**1.7400e-003**	**0.0427**		**197.8550**	**197.8550**	**7.5600e-003**		**198.0441**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1839**	**1.2427**	**1.4265**	**0.0279**	**1.1553**	**1.1831**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9400e-003	0.2015	0.0439	6.5000e-004	0.0459	7.1000e-004	0.0467	0.0117	6.8000e-004	0.0124		68.7595	68.7595	2.4700e-003		68.8212
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0626**	**0.2441**	**0.5235**	**1.8900e-003**	**0.1692**	**1.7000e-003**	**0.1709**	**0.0444**	**1.5900e-003**	**0.0460**		**192.4991**	**192.4991**	**6.9900e-003**		**192.6739**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0827**	**1.2427**	**1.3254**	**0.0125**	**1.1553**	**1.1678**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9400e-003	0.2015	0.0439	6.5000e-004	0.0459	7.1000e-004	0.0467	0.0117	6.8000e-004	0.0124		68.7595	68.7595	2.4700e-003		68.8212
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0626**	**0.2441**	**0.5235**	**1.8900e-003**	**0.1692**	**1.7000e-003**	**0.1709**	**0.0444**	**1.5900e-003**	**0.0460**		**192.4991**	**192.4991**	**6.9900e-003**		**192.6739**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	46.7071	252.7400	447.4454	2.2501	234.6031	0.9645	235.5677	62.7593	0.8964	63.6557		229,360.4100	229,360.4100	7.8878		229,557.6049
Unmitigated	49.8793	264.7612	508.7095	2.5876	274.3896	1.1037	275.4933	73.4027	1.0259	74.4286		263,661.9526	263,661.9526	8.8235		263,882.5390

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,551.37	0.00	0.00	5,593,253	4,782,232
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,327.01	47,184.58	36,408.43	112,109,600	95,853,708

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118
NaturalGas Unmitigated	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11627.8	0.1254	1.1400	0.9576	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.9780	1,367.9780	0.0262	0.0251	1,376.1073
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6593**	**11.6987**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,257.1661**	**31,257.1661**	**0.5991**	**0.5730**	**31,442.9118**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6278	0.1254	1.1400	0.9576	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.9780	1,367.9780	0.0262	0.0251	1,376.1073
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6593**	**11.6987**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,257.1661**	**31,257.1661**	**0.5991**	**0.5730**	**31,442.9118**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1252	22.4920	335.5833	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7391	24,479.7391	1.0236	0.4379	24,635.8318
Unmitigated	955.3346	27.9542	1,364.9293	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0920	32,275.6023	19.7752	1.3197	33,163.2482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.308 4	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.51 02	16,009.41 18	31,682.92 20	19.2095	1.3197	32,556.42 41
Landscaping	9.8273	3.7804	327.6209	0.0174		1.8239	1.8239		1.8239	1.8239		592.6803	592.6803	0.5658		606.8241
Total	**955.3346**	**27.9542**	**1,364.929 3**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.51 02**	**16,602.09 20**	**32,275.60 23**	**19.7752**	**1.3197**	**33,163.24 82**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2631					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6209	0.0174		1.8239	1.8239		1.8239	1.8239		592.6803	592.6803	0.5658		606.8241
Total	**145.1252**	**22.4920**	**335.5833**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7391**	**24,479.7391**	**1.0236**	**0.4379**	**24,635.8318**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Reduced Land Area Alt.

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.00	1000sqft	2.46	125,000.00	0
Elementary School	2,753.00	Student	17.16	230,160.08	0
High School	526.00	Student	15.44	69,779.67	0
Junior High School	754.00	Student	8.58	88,641.51	0
Library	22.00	1000sqft	0.44	22,000.00	0
City Park	148.00	Acre	126.97	6,446,880.00	0
Apartments Mid Rise	83.00	Dwelling Unit	1.87	83,000.00	305
Condo/Townhouse	2,700.00	Dwelling Unit	144.77	2,700,000.00	9909
Single Family Housing	1,200.00	Dwelling Unit	334.24	2,160,000.00	4404
Regional Shopping Center	200.00	1000sqft	3.94	200,000.00	0
Supermarket	25.00	1000sqft	0.49	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Lot acreages were reduced proportionally based on the reduced land area compared with the proposed project (14.211%).

Construction Phase - Construction emissions not modeled for the alternatives.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - .

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LotAcreage	2.87	2.46
tblLandUse	LotAcreage	5.28	17.16
tblLandUse	LotAcreage	1.60	15.44
tblLandUse	LotAcreage	2.03	8.58
tblLandUse	LotAcreage	0.51	0.44
tblLandUse	LotAcreage	148.00	126.97
tblLandUse	LotAcreage	2.18	1.87
tblLandUse	LotAcreage	168.75	144.77
tblLandUse	LotAcreage	389.61	334.24
tblLandUse	LotAcreage	4.59	3.94
tblLandUse	LotAcreage	0.57	0.49
tblLandUse	Population	237.00	305.00
tblLandUse	Population	7,722.00	9,909.00
tblLandUse	Population	3,432.00	4,404.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3913	33.5138	22.3725	0.0407	0.3392	1.6607	2.0000	0.0688	1.5438	1.6126	0.0000	3,940.9955	3,940.9955	1.0661	0.0000	3,967.6474
2021	3.2382	31.7255	22.1296	0.0407	0.3394	1.5532	1.8926	0.0689	1.4428	1.5117	0.0000	3,936.2461	3,936.2461	1.0624	0.0000	3,962.8059
2022	2.7070	25.9786	21.1102	0.0406	0.3530	1.2444	1.5974	0.0722	1.1569	1.2291	0.0000	3,930.0115	3,930.0115	1.0594	0.0000	3,956.4957
Maximum	**3.3913**	**33.5138**	**22.3725**	**0.0407**	**0.3530**	**1.6607**	**2.0000**	**0.0722**	**1.5438**	**1.6126**	**0.0000**	**3,940.9955**	**3,940.9955**	**1.0661**	**0.0000**	**3,967.6474**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3913	33.5138	22.3725	0.0407	0.2381	1.6607	1.8988	0.0535	1.5438	1.5973	0.0000	3,940.9955	3,940.9955	1.0661	0.0000	3,967.6474
2021	3.2382	31.7255	22.1296	0.0407	0.2382	1.5532	1.7914	0.0535	1.4428	1.4964	0.0000	3,936.2461	3,936.2461	1.0624	0.0000	3,962.8059
2022	2.7070	25.9786	21.1102	0.0406	0.2519	1.2444	1.4963	0.0569	1.1569	1.2138	0.0000	3,930.0115	3,930.0115	1.0594	0.0000	3,956.4957
Maximum	**3.3913**	**33.5138**	**22.3725**	**0.0407**	**0.2519**	**1.6607**	**1.8988**	**0.0569**	**1.5438**	**1.5973**	**0.0000**	**3,940.9955**	**3,940.9955**	**1.0661**	**0.0000**	**3,967.6474**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.41	0.00	5.53	21.90	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	955.3346	27.9542	1,364.929 3	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.51 02	16,602.09 20	32,275.60 23	19.7752	1.3197	33,163.24 82
Energy	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.16 61	31,257.16 61	0.5991	0.5731	31,442.911 8
Mobile	44.9884	271.2586	522.2819	2.4532	274.3896	1.1068	275.4964	73.4027	1.0290	74.4316		250,020.5 493	250,020.5 493	9.2066		250,250.7 142
Total	**1,003.188 2**	**323.8720**	**1,898.910 0**	**4.6231**	**274.3896**	**151.6717**	**426.0613**	**73.4027**	**151.5938**	**224.9965**	**15,673.51 02**	**297,879.8 074**	**313,553.3 176**	**29.5809**	**1.8927**	**314,856.8 742**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	145.1252	22.4920	335.5833	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.73 91	24,479.73 91	1.0236	0.4379	24,635.83 18
Energy	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.16 61	31,257.16 61	0.5991	0.5731	31,442.911 8
Mobile	41.7510	257.8121	464.2442	2.1313	234.6031	0.9677	235.5708	62.7593	0.8995	63.6588		217,273.9 844	217,273.9 844	8.2715		217,480.7 719
Total	**189.7414**	**304.9633**	**811.5262**	**2.4244**	**234.6031**	**6.2841**	**240.8872**	**62.7593**	**6.2158**	**68.9751**	**0.0000**	**273,010.8 895**	**273,010.8 895**	**9.8942**	**1.0110**	**273,559.5 155**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**81.09**	**5.84**	**57.26**	**47.56**	**14.50**	**95.86**	**43.46**	**14.50**	**95.90**	**69.34**	**100.00**	**8.35**	**12.93**	**66.55**	**46.59**	**13.12**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	9/6/2022	5	700	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.1839**	**1.6587**	**1.8426**	**0.0279**	**1.5419**	**1.5697**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.0500e-003	0.2456	0.0522	6.5000e-004	0.0321	9.7000e-004	0.0331	8.2900e-003	9.3000e-004	9.2200e-003		69.0410	69.0410	2.7200e-003		69.1091
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0792**	**0.3128**	**0.6193**	**1.9000e-003**	**0.1554**	**2.0400e-003**	**0.1574**	**0.0410**	**1.9100e-003**	**0.0429**		**193.2906**	**193.2906**	**8.1200e-003**		**193.4938**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0827**	**1.6587**	**1.7414**	**0.0125**	**1.5419**	**1.5544**	**0.0000**	**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.0500e-003	0.2456	0.0522	6.5000e-004	0.0321	9.7000e-004	0.0331	8.2900e-003	9.3000e-004	9.2200e-003		69.0410	69.0410	2.7200e-003		69.1091
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0792**	**0.3128**	**0.6193**	**1.9000e-003**	**0.1554**	**2.0400e-003**	**0.1574**	**0.0410**	**1.9100e-003**	**0.0429**		**193.2906**	**193.2906**	**8.1200e-003**		**193.4938**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1839**	**1.5513**	**1.7352**	**0.0279**	**1.4411**	**1.4689**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.5900e-003	0.2249	0.0498	6.4000e-004	0.0323	8.5000e-004	0.0331	8.3200e-003	8.1000e-004	9.1300e-003		68.2150	68.2150	2.6900e-003		68.2822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0731**	**0.2849**	**0.5646**	**1.8500e-003**	**0.1555**	**1.8800e-003**	**0.1574**	**0.0410**	**1.7600e-003**	**0.0428**		**188.3012**	**188.3012**	**7.5000e-003**		**188.4886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0827**	**1.5513**	**1.6341**	**0.0125**	**1.4411**	**1.4536**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.5900e-003	0.2249	0.0498	6.4000e-004	0.0323	8.5000e-004	0.0331	8.3200e-003	8.1000e-004	9.1300e-003		68.2150	68.2150	2.6900e-003		68.2822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0731**	**0.2849**	**0.5646**	**1.8500e-003**	**0.1555**	**1.8800e-003**	**0.1574**	**0.0410**	**1.7600e-003**	**0.0428**		**188.3012**	**188.3012**	**7.5000e-003**		**188.4886**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1839	0.0000	0.1839	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1839**	**1.2427**	**1.4265**	**0.0279**	**1.1553**	**1.1831**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1500e-003	0.2055	0.0474	6.4000e-004	0.0459	7.3000e-004	0.0467	0.0117	7.0000e-004	0.0124		67.3698	67.3698	2.6500e-003		67.4360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0678**	**0.2592**	**0.5162**	**1.8000e-003**	**0.1692**	**1.7200e-003**	**0.1709**	**0.0444**	**1.6100e-003**	**0.0460**		**183.2303**	**183.2303**	**6.9400e-003**		**183.4037**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0827	0.0000	0.0827	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0827**	**1.2427**	**1.3254**	**0.0125**	**1.1553**	**1.1678**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.1500e-003	0.2055	0.0474	6.4000e-004	0.0459	7.3000e-004	0.0467	0.0117	7.0000e-004	0.0124		67.3698	67.3698	2.6500e-003		67.4360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0678**	**0.2592**	**0.5162**	**1.8000e-003**	**0.1692**	**1.7200e-003**	**0.1709**	**0.0444**	**1.6100e-003**	**0.0460**		**183.2303**	**183.2303**	**6.9400e-003**		**183.4037**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	41.7510	257.8121	464.2442	2.1313	234.6031	0.9677	235.5708	62.7593	0.8995	63.6588		217,273.9844	217,273.9844	8.2715		217,480.7719
Unmitigated	44.9884	271.2586	522.2819	2.4532	274.3896	1.1068	275.4964	73.4027	1.0290	74.4316		250,020.5493	250,020.5493	9.2066		250,250.7142

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	551.95	530.37	486.38	1,554,240	1,328,875
City Park	279.72	3,367.00	2477.52	2,208,999	1,888,694
Condo/Townhouse	15,687.00	15,309.00	13068.00	43,959,072	37,585,007
Elementary School	3,551.37	0.00	0.00	5,593,253	4,782,232
General Office Building	1,378.75	307.50	131.25	2,503,266	2,140,292
High School	899.46	320.86	131.50	1,851,287	1,582,850
Junior High School	1,221.48	0.00	0.00	1,961,517	1,677,097
Library	1,237.28	1,024.10	560.78	1,881,601	1,608,769
Regional Shopping Center	8,540.00	9,994.00	5048.00	14,462,761	12,365,661
Single Family Housing	11,424.00	11,892.00	10344.00	32,659,403	27,923,790
Supermarket	2,556.00	4,439.75	4161.00	3,474,200	2,970,441
Total	47,327.01	47,184.58	36,408.43	112,109,600	95,853,708

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118
NaturalGas Unmitigated	2.8652	24.6593	11.6988	0.1563		1.9796	1.9796		1.9796	1.9796		31,257.1661	31,257.1661	0.5991	0.5731	31,442.9118

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1964.59	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11627.8	0.1254	1.1400	0.9576	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.9780	1,367.9780	0.0262	0.0251	1,376.1073
General Office Building	5606.16	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3525.31	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4478.22	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1590.03	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1298.63	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95556.5	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1539.73	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6593**	**11.6987**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,257.1661**	**31,257.1661**	**0.5991**	**0.5730**	**31,442.9118**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.96459	0.0212	0.1811	0.0770	1.1600e-003		0.0146	0.0146		0.0146	0.0146		231.1279	231.1279	4.4300e-003	4.2400e-003	232.5014
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	138.499	1.4936	12.7636	5.4313	0.0815		1.0320	1.0320		1.0320	1.0320		16,293.9974	16,293.9974	0.3123	0.2987	16,390.8245
Elementary School	11.6278	0.1254	1.1400	0.9576	6.8400e-003		0.0866	0.0866		0.0866	0.0866		1,367.9780	1,367.9780	0.0262	0.0251	1,376.1073
General Office Building	5.60616	0.0605	0.5496	0.4617	3.3000e-003		0.0418	0.0418		0.0418	0.0418		659.5488	659.5488	0.0126	0.0121	663.4681
High School	3.52531	0.0380	0.3456	0.2903	2.0700e-003		0.0263	0.0263		0.0263	0.0263		414.7420	414.7420	7.9500e-003	7.6000e-003	417.2066
Junior High School	4.47822	0.0483	0.4390	0.3688	2.6300e-003		0.0334	0.0334		0.0334	0.0334		526.8491	526.8491	0.0101	9.6600e-003	529.9799
Library	1.59003	0.0172	0.1559	0.1309	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.0621	187.0621	3.5900e-003	3.4300e-003	188.1737
Regional Shopping Center	1.29863	0.0140	0.1273	0.1070	7.6000e-004		9.6800e-003	9.6800e-003		9.6800e-003	9.6800e-003		152.7800	152.7800	2.9300e-003	2.8000e-003	153.6879
Single Family Housing	95.5565	1.0305	8.8062	3.7473	0.0562		0.7120	0.7120		0.7120	0.7120		11,241.9365	11,241.9365	0.2155	0.2061	11,308.7417
Supermarket	1.53973	0.0166	0.1510	0.1268	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.1442	181.1442	3.4700e-003	3.3200e-003	182.2207
Total		**2.8652**	**24.6593**	**11.6987**	**0.1563**		**1.9796**	**1.9796**		**1.9796**	**1.9796**		**31,257.1661**	**31,257.1661**	**0.5991**	**0.5730**	**31,442.9118**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	145.1252	22.4920	335.5833	0.1368		3.3368	3.3368		3.3368	3.3368	0.0000	24,479.7391	24,479.7391	1.0236	0.4379	24,635.8318
Unmitigated	955.3346	27.9542	1,364.9293	2.0136		148.5852	148.5852		148.5852	148.5852	15,673.5102	16,602.0920	32,275.6023	19.7752	1.3197	33,163.2482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	122.3888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	803.2733	24.1737	1,037.3084	1.9962		146.7613	146.7613		146.7613	146.7613	15,673.5102	16,009.4118	31,682.9220	19.2095	1.3197	32,556.4241
Landscaping	9.8273	3.7804	327.6209	0.0174		1.8239	1.8239		1.8239	1.8239		592.6803	592.6803	0.5658		606.8241
Total	**955.3346**	**27.9542**	**1,364.9293**	**2.0136**		**148.5852**	**148.5852**		**148.5852**	**148.5852**	**15,673.5102**	**16,602.0920**	**32,275.6023**	**19.7752**	**1.3197**	**33,163.2482**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	19.8452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	113.2631					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.1897	18.7115	7.9624	0.1194		1.5129	1.5129		1.5129	1.5129	0.0000	23,887.0588	23,887.0588	0.4578	0.4379	24,029.0077
Landscaping	9.8273	3.7804	327.6209	0.0174		1.8239	1.8239		1.8239	1.8239		592.6803	592.6803	0.5658		606.8241
Total	**145.1252**	**22.4920**	**335.5833**	**0.1368**		**3.3368**	**3.3368**		**3.3368**	**3.3368**	**0.0000**	**24,479.7391**	**24,479.7391**	**1.0236**	**0.4379**	**24,635.8318**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Smaller-Scale Alt.

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	83.33	1000sqft	1.91	83,332.50	0
Elementary School	1,835.00	Student	13.33	153,412.18	0
High School	351.00	Student	12.00	46,564.00	0
Junior High School	503.00	Student	6.67	59,133.53	0
Library	14.67	1000sqft	0.34	14,666.52	0
City Park	98.67	Acre	98.67	4,297,877.02	0
Apartments Mid Rise	55.33	Dwelling Unit	1.45	55,332.78	203
Condo/Townhouse	1,799.98	Dwelling Unit	112.50	1,799,982.00	6606
Single Family Housing	799.99	Dwelling Unit	259.74	1,439,985.60	2936
Regional Shopping Center	133.33	1000sqft	3.06	133,332.00	0
Supermarket	16.67	1000sqft	0.38	16,666.50	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2, CH_4, and N_2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Smaller-scale Alternative modeled with 33.3333% reduced unit amounts, lot acreage, square feet, and population.

Construction Phase - No construction modeling for the Alternative.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - Trip lengths modified to reflect what is provided with Fehr & Peers TIA (average of 3.54 daily VMT/trip).

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	83,330.00	83,332.50
tblLandUse	LandUseSquareFeet	14,670.00	14,666.52
tblLandUse	LandUseSquareFeet	4,298,065.20	4,297,877.02
tblLandUse	LandUseSquareFeet	55,330.00	55,332.78
tblLandUse	LandUseSquareFeet	1,799,980.00	1,799,982.00
tblLandUse	LandUseSquareFeet	1,439,982.00	1,439,985.60
tblLandUse	LandUseSquareFeet	133,330.00	133,332.00
tblLandUse	LandUseSquareFeet	16,670.00	16,666.50
tblLandUse	LotAcreage	3.52	13.33
tblLandUse	LotAcreage	1.07	12.00
tblLandUse	LotAcreage	1.36	6.67
tblLandUse	LotAcreage	1.46	1.45
tblLandUse	Population	158.00	203.00
tblLandUse	Population	5,148.00	6,606.00
tblLandUse	Population	2,288.00	2,936.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4435	4.3948	2.9289	5.3500e-003	0.0479	0.2176	0.2654	9.4900e-003	0.2023	0.2117	0.0000	469.9176	469.9176	0.1267	0.0000	473.0858
2021	0.4219	4.1443	2.8863	5.3200e-003	0.0477	0.2027	0.2504	9.4500e-003	0.1883	0.1978	0.0000	467.5428	467.5428	0.1258	0.0000	470.6881
2022	0.1040	1.0013	0.8123	1.5700e-003	0.0166	0.0479	0.0645	3.4200e-003	0.0445	0.0480	0.0000	137.7106	137.7106	0.0370	0.0000	138.6359
Maximum	**0.4435**	**4.3948**	**2.9289**	**5.3500e-003**	**0.0479**	**0.2176**	**0.2654**	**9.4900e-003**	**0.2023**	**0.2117**	**0.0000**	**469.9176**	**469.9176**	**0.1267**	**0.0000**	**473.0858**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4435	4.3948	2.9288	5.3500e-003	0.0324	0.2176	0.2500	7.1500e-003	0.2023	0.2094	0.0000	469.9170	469.9170	0.1267	0.0000	473.0853
2021	0.4219	4.1443	2.8863	5.3200e-003	0.0323	0.2027	0.2350	7.1200e-003	0.1883	0.1954	0.0000	467.5423	467.5423	0.1258	0.0000	470.6876
2022	0.1040	1.0013	0.8123	1.5700e-003	0.0121	0.0479	0.0600	2.7300e-003	0.0445	0.0473	0.0000	137.7105	137.7105	0.0370	0.0000	138.6358
Maximum	**0.4435**	**4.3948**	**2.9288**	**5.3500e-003**	**0.0324**	**0.2176**	**0.2500**	**7.1500e-003**	**0.2023**	**0.2094**	**0.0000**	**469.9170**	**469.9170**	**0.1267**	**0.0000**	**473.0853**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.56**	**0.00**	**6.10**	**23.97**	**0.00**	**1.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.2008	1.2008
2	**4-1-2020**	**6-30-2020**	1.1999	1.1999
3	**7-1-2020**	**9-30-2020**	1.2131	1.2131
4	**10-1-2020**	**12-31-2020**	1.2140	1.2140
5	**1-1-2021**	**3-31-2021**	1.1251	1.1251
6	**4-1-2021**	**6-30-2021**	1.1368	1.1368
7	**7-1-2021**	**9-30-2021**	1.1493	1.1493
8	**10-1-2021**	**12-31-2021**	1.1501	1.1501
9	**1-1-2022**	**3-31-2022**	0.9232	0.9232
10	**4-1-2022**	**6-30-2022**	0.1947	0.1947
		Highest	1.2140	1.2140

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	40.0803	0.9758	55.6545	0.0560		4.1635	4.1635		4.1635	4.1635	388.6464	441.7730	830.4193	0.5191	0.0327	853.1482
Energy	0.3486	3.0002	1.4234	0.0190		0.2409	0.2409		0.2409	0.2409	0.0000	3,449.9993	3,449.9993	0.0661	0.0633	3,470.5009
Mobile	4.7409	27.8361	52.0468	0.2600	27.9751	0.1158	28.0909	7.5042	0.1077	7.6119	0.0000	24,045.2321	24,045.2321	0.8460	0.0000	24,066.3819
Waste						0.0000	0.0000		0.0000	0.0000	602.7918	0.0000	602.7918	35.6240	0.0000	1,493.3912
Water						0.0000	0.0000		0.0000	0.0000	65.8042	0.0000	65.8042	6.7587	0.1596	282.3294
Total	**45.1698**	**31.8121**	**109.1246**	**0.3351**	**27.9751**	**4.5202**	**32.4952**	**7.5042**	**4.5120**	**12.0162**	**1,057.2423**	**27,937.0043**	**28,994.2466**	**43.8139**	**0.2556**	**30,165.7516**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	17.0737	0.8265	27.5190	4.7100e-003		0.1933	0.1933		0.1933	0.1933	0.0000	637.1101	637.1101	0.0541	0.0109	641.6991
Energy	0.3486	3.0002	1.4234	0.0190		0.2409	0.2409		0.2409	0.2409	0.0000	3,449.9993	3,449.9993	0.0661	0.0633	3,470.5009
Mobile	4.4057	26.4778	46.0543	0.2260	23.9187	0.1012	24.0199	6.4161	0.0941	6.5102	0.0000	20,906.6890	20,906.6890	0.7576	0.0000	20,925.6295
Waste						0.0000	0.0000		0.0000	0.0000	602.7918	0.0000	602.7918	35.6240	0.0000	1,493.3912
Water						0.0000	0.0000		0.0000	0.0000	52.6433	0.0000	52.6433	5.4070	0.1277	225.8635
Total	**21.8280**	**30.3045**	**74.9967**	**0.2497**	**23.9187**	**0.5354**	**24.4541**	**6.4161**	**0.5283**	**6.9444**	**655.4352**	**24,993.7984**	**25,649.2335**	**41.9088**	**0.2018**	**26,757.0841**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**51.68**	**4.74**	**31.27**	**25.46**	**14.50**	**88.16**	**24.75**	**14.50**	**88.29**	**42.21**	**38.01**	**10.54**	**11.54**	**4.35**	**21.04**	**11.30**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	4/19/2022	5	600	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0281	0.0000	0.0281	4.2600e-003	0.0000	4.2600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3818	445.3818	0.1257	0.0000	448.5250
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**0.0281**	**0.2173**	**0.2454**	**4.2600e-003**	**0.2020**	**0.2062**	**0.0000**	**445.3818**	**445.3818**	**0.1257**	**0.0000**	**448.5250**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0600e-003	0.0375	7.6200e-003	1.0000e-004	4.1400e-003	1.5000e-004	4.2900e-003	1.0800e-003	1.4000e-004	1.2200e-003	0.0000	9.6836	9.6836	3.6000e-004	0.0000	9.6927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.6600e-003**	**0.0455**	**0.0792**	**2.6000e-004**	**0.0198**	**2.9000e-004**	**0.0200**	**5.2300e-003**	**2.7000e-004**	**5.5000e-003**	**0.0000**	**24.5358**	**24.5358**	**1.0000e-003**	**0.0000**	**24.5609**

3.2 Demolition - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0127	0.0000	0.0127	1.9200e-003	0.0000	1.9200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4339	4.3493	2.8497	5.0800e-003		0.2173	0.2173		0.2020	0.2020	0.0000	445.3812	445.3812	0.1257	0.0000	448.5244
Total	**0.4339**	**4.3493**	**2.8497**	**5.0800e-003**	**0.0127**	**0.2173**	**0.2299**	**1.9200e-003**	**0.2020**	**0.2039**	**0.0000**	**445.3812**	**445.3812**	**0.1257**	**0.0000**	**448.5244**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0600e-003	0.0375	7.6200e-003	1.0000e-004	4.1400e-003	1.5000e-004	4.2900e-003	1.0800e-003	1.4000e-004	1.2200e-003	0.0000	9.6836	9.6836	3.6000e-004	0.0000	9.6927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-003	7.9900e-003	0.0716	1.6000e-004	0.0156	1.4000e-004	0.0158	4.1500e-003	1.3000e-004	4.2800e-003	0.0000	14.8523	14.8523	6.4000e-004	0.0000	14.8682
Total	**9.6600e-003**	**0.0455**	**0.0792**	**2.6000e-004**	**0.0198**	**2.9000e-004**	**0.0200**	**5.2300e-003**	**2.7000e-004**	**5.5000e-003**	**0.0000**	**24.5358**	**24.5358**	**1.0000e-003**	**0.0000**	**24.5609**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0280	0.0000	0.0280	4.2400e-003	0.0000	4.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7102	443.7102	0.1249	0.0000	446.8324
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**0.0280**	**0.2025**	**0.2305**	**4.2400e-003**	**0.1881**	**0.1923**	**0.0000**	**443.7102**	**443.7102**	**0.1249**	**0.0000**	**446.8324**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8000e-004	0.0342	7.2400e-003	1.0000e-004	4.1400e-003	1.3000e-004	4.2700e-003	1.0800e-003	1.2000e-004	1.2000e-003	0.0000	9.5328	9.5328	3.6000e-004	0.0000	9.5417
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.8800e-003**	**0.0413**	**0.0720**	**2.6000e-004**	**0.0197**	**2.6000e-004**	**0.0200**	**5.2200e-003**	**2.4000e-004**	**5.4600e-003**	**0.0000**	**23.8326**	**23.8326**	**9.3000e-004**	**0.0000**	**23.8557**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0126	0.0000	0.0126	1.9100e-003	0.0000	1.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4131	4.1030	2.8142	5.0700e-003		0.2025	0.2025		0.1881	0.1881	0.0000	443.7097	443.7097	0.1249	0.0000	446.8319
Total	**0.4131**	**4.1030**	**2.8142**	**5.0700e-003**	**0.0126**	**0.2025**	**0.2151**	**1.9100e-003**	**0.1881**	**0.1900**	**0.0000**	**443.7097**	**443.7097**	**0.1249**	**0.0000**	**446.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8000e-004	0.0342	7.2400e-003	1.0000e-004	4.1400e-003	1.3000e-004	4.2700e-003	1.0800e-003	1.2000e-004	1.2000e-003	0.0000	9.5328	9.5328	3.6000e-004	0.0000	9.5417
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-003	7.1000e-003	0.0648	1.6000e-004	0.0156	1.3000e-004	0.0157	4.1400e-003	1.2000e-004	4.2600e-003	0.0000	14.2998	14.2998	5.7000e-004	0.0000	14.3140
Total	**8.8800e-003**	**0.0413**	**0.0720**	**2.6000e-004**	**0.0197**	**2.6000e-004**	**0.0200**	**5.2200e-003**	**2.4000e-004**	**5.4600e-003**	**0.0000**	**23.8326**	**23.8326**	**9.3000e-004**	**0.0000**	**23.8557**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.2600e-003	0.0000	8.2600e-003	1.2500e-003	0.0000	1.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1016	0.9902	0.7929	1.4900e-003		0.0478	0.0478		0.0445	0.0445	0.0000	130.8624	130.8624	0.0368	0.0000	131.7813
Total	**0.1016**	**0.9902**	**0.7929**	**1.4900e-003**	**8.2600e-003**	**0.0478**	**0.0561**	**1.2500e-003**	**0.0445**	**0.0457**	**0.0000**	**130.8624**	**130.8624**	**0.0368**	**0.0000**	**131.7813**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.2200e-003	2.0300e-003	3.0000e-005	3.7700e-003	3.0000e-005	3.8100e-003	9.4000e-004	3.0000e-005	9.8000e-004	0.0000	2.7780	2.7780	1.0000e-004	0.0000	2.7806
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	1.8800e-003	0.0174	5.0000e-005	4.5900e-003	4.0000e-005	4.6300e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.0703	4.0703	1.5000e-004	0.0000	4.0740
Total	**2.4300e-003**	**0.0111**	**0.0195**	**8.0000e-005**	**8.3600e-003**	**7.0000e-005**	**8.4400e-003**	**2.1600e-003**	**7.0000e-005**	**2.2400e-003**	**0.0000**	**6.8483**	**6.8483**	**2.5000e-004**	**0.0000**	**6.8546**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7200e-003	0.0000	3.7200e-003	5.6000e-004	0.0000	5.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1016	0.9902	0.7929	1.4900e-003		0.0478	0.0478		0.0445	0.0445	0.0000	130.8622	130.8622	0.0368	0.0000	131.7812
Total	**0.1016**	**0.9902**	**0.7929**	**1.4900e-003**	**3.7200e-003**	**0.0478**	**0.0516**	**5.6000e-004**	**0.0445**	**0.0450**	**0.0000**	**130.8622**	**130.8622**	**0.0368**	**0.0000**	**131.7812**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.2200e-003	2.0300e-003	3.0000e-005	3.7700e-003	3.0000e-005	3.8100e-003	9.4000e-004	3.0000e-005	9.8000e-004	0.0000	2.7780	2.7780	1.0000e-004	0.0000	2.7806
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1600e-003	1.8800e-003	0.0174	5.0000e-005	4.5900e-003	4.0000e-005	4.6300e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.0703	4.0703	1.5000e-004	0.0000	4.0740
Total	**2.4300e-003**	**0.0111**	**0.0195**	**8.0000e-005**	**8.3600e-003**	**7.0000e-005**	**8.4400e-003**	**2.1600e-003**	**7.0000e-005**	**2.2400e-003**	**0.0000**	**6.8483**	**6.8483**	**2.5000e-004**	**0.0000**	**6.8546**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4057	26.4778	46.0543	0.2260	23.9187	0.1012	24.0199	6.4161	0.0941	6.5102	0.0000	20,906.6890	20,906.6890	0.7576	0.0000	20,925.6295
Unmitigated	4.7409	27.8361	52.0468	0.2600	27.9751	0.1158	28.0909	7.5042	0.1077	7.6119	0.0000	24,045.2321	24,045.2321	0.8460	0.0000	24,066.3819

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	367.94	353.56	324.23	1,036,097	885,863
City Park	186.49	2,244.74	1651.74	1,472,716	1,259,172
Condo/Townhouse	10,457.88	10,205.89	8711.90	29,305,723	25,056,393
Elementary School	2,367.15	0.00	0.00	3,728,158	3,187,575
General Office Building	919.13	204.99	87.50	1,668,777	1,426,805
High School	600.21	214.11	87.75	1,235,364	1,056,237
Junior High School	814.86	0.00	0.00	1,308,545	1,118,806
Library	825.04	682.89	373.94	1,254,686	1,072,756
Regional Shopping Center	5,693.19	6,662.50	3365.25	9,641,600	8,243,568
Single Family Housing	7,615.90	7,927.90	6895.91	21,772,663	18,615,627
Supermarket	1,704.34	2,960.43	2774.55	2,316,596	1,980,690
Total	31,552.14	31,457.00	24,272.78	74,740,926	63,903,492

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.3486	3.0002	1.4234	0.0190		0.2409	0.2409		0.2409	0.2409	0.0000	3,449.999 3	3,449.999 3	0.0661	0.0633	3,470.500 9
NaturalGas Unmitigated	0.3486	3.0002	1.4234	0.0190		0.2409	0.2409		0.2409	0.2409	0.0000	3,449.999 3	3,449.999 3	0.0661	0.0633	3,470.500 9

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	478021	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5090	25.5090	4.9000e-004	4.7000e-004	25.6606
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.3701e+007	0.1817	1.5529	0.6608	9.9100e-003		0.1256	0.1256		0.1256	0.1256	0.0000	1,798.4160	1,798.4160	0.0345	0.0330	1,809.1031
Elementary School	2.82892e+006	0.0153	0.1387	0.1165	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	150.9620	150.9620	2.8900e-003	2.7700e-003	151.8591
General Office Building	1.36415e+006	7.3600e-003	0.0669	0.0562	4.0000e-004		5.0800e-003	5.0800e-003		5.0800e-003	5.0800e-003	0.0000	72.7964	72.7964	1.4000e-003	1.3300e-003	73.2290
High School	858640	4.6300e-003	0.0421	0.0354	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Junior High School	1.09042e+006	5.8800e-003	0.0535	0.0449	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1891	58.1891	1.1200e-003	1.0700e-003	58.5349
Library	386903	2.0900e-003	0.0190	0.0159	1.1000e-004		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	20.6466	20.6466	4.0000e-004	3.8000e-004	20.7693
Regional Shopping Center	315997	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	16.8628	16.8628	3.2000e-004	3.1000e-004	16.9630
Single Family Housing	2.32518e+007	0.1254	1.0714	0.4559	6.8400e-003		0.0866	0.0866		0.0866	0.0866	0.0000	1,240.8036	1,240.8036	0.0238	0.0228	1,248.1771
Supermarket	374663	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	19.9934	19.9934	3.8000e-004	3.7000e-004	20.1123
Total		**0.3486**	**3.0002**	**1.4234**	**0.0190**		**0.2409**	**0.2409**		**0.2409**	**0.2409**	**0.0000**	**3,449.9993**	**3,449.9993**	**0.0661**	**0.0633**	**3,470.5009**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	478021	2.5800e-003	0.0220	9.3700e-003	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5090	25.5090	4.9000e-004	4.7000e-004	25.6606
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.3701e+007	0.1817	1.5529	0.6608	9.9100e-003		0.1256	0.1256		0.1256	0.1256	0.0000	1,798.4160	1,798.4160	0.0345	0.0330	1,809.1031
Elementary School	2.82892e+006	0.0153	0.1387	0.1165	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	150.9620	150.9620	2.8900e-003	2.7700e-003	151.8591
General Office Building	1.36415e+006	7.3600e-003	0.0669	0.0562	4.0000e-004		5.0800e-003	5.0800e-003		5.0800e-003	5.0800e-003	0.0000	72.7964	72.7964	1.4000e-003	1.3300e-003	73.2290
High School	858640	4.6300e-003	0.0421	0.0354	2.5000e-004		3.2000e-003	3.2000e-003		3.2000e-003	3.2000e-003	0.0000	45.8203	45.8203	8.8000e-004	8.4000e-004	46.0926
Junior High School	1.09042e+006	5.8800e-003	0.0535	0.0449	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003	0.0000	58.1891	58.1891	1.1200e-003	1.0700e-003	58.5349
Library	386903	2.0900e-003	0.0190	0.0159	1.1000e-004		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	20.6466	20.6466	4.0000e-004	3.8000e-004	20.7693
Regional Shopping Center	315997	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	16.8628	16.8628	3.2000e-004	3.1000e-004	16.9630
Single Family Housing	2.32518e+007	0.1254	1.0714	0.4559	6.8400e-003		0.0866	0.0866		0.0866	0.0866	0.0000	1,240.8036	1,240.8036	0.0238	0.0228	1,248.1771
Supermarket	374663	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	19.9934	19.9934	3.8000e-004	3.7000e-004	20.1123
Total		**0.3486**	**3.0002**	**1.4234**	**0.0190**		**0.2409**	**0.2409**		**0.2409**	**0.2409**	**0.0000**	**3,449.9993**	**3,449.9993**	**0.0661**	**0.0633**	**3,470.5009**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	228422	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	9.08167e +006	0.0000	0.0000	0.0000	0.0000
Elementary School	826892	0.0000	0.0000	0.0000	0.0000
General Office Building	1.48582e +006	0.0000	0.0000	0.0000	0.0000
High School	250980	0.0000	0.0000	0.0000	0.0000
Junior High School	318730	0.0000	0.0000	0.0000	0.0000
Library	121145	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.42532e +006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.47238e +006	0.0000	0.0000	0.0000	0.0000
Supermarket	683826	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	228422	0.0000	0.0000	0.0000	0.0000
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	9.08167e+006	0.0000	0.0000	0.0000	0.0000
Elementary School	826892	0.0000	0.0000	0.0000	0.0000
General Office Building	1.48582e+006	0.0000	0.0000	0.0000	0.0000
High School	250980	0.0000	0.0000	0.0000	0.0000
Junior High School	318730	0.0000	0.0000	0.0000	0.0000
Library	121145	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.42532e+006	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.47238e+006	0.0000	0.0000	0.0000	0.0000
Supermarket	683826	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	17.0737	0.8265	27.5190	4.7100e-003		0.1933	0.1933		0.1933	0.1933	0.0000	637.1101	637.1101	0.0541	0.0109	641.6991
Unmitigated	40.0803	0.9758	55.6545	0.0560		4.1635	4.1635		4.1635	4.1635	388.6464	441.7730	830.4193	0.5191	0.0327	853.1482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.4145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.8907					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	21.9561	0.6607	28.3531	0.0546		4.0115	4.0115		4.0115	4.0115	388.6464	396.9676	785.6140	0.4763	0.0327	807.2736
Landscaping	0.8189	0.3150	27.3014	1.4500e-003		0.1520	0.1520		0.1520	0.1520	0.0000	44.8053	44.8053	0.0428	0.0000	45.8746
Total	**40.0803**	**0.9758**	**55.6545**	**0.0560**		**4.1635**	**4.1635**		**4.1635**	**4.1635**	**388.6464**	**441.7730**	**830.4193**	**0.5191**	**0.0327**	**853.1482**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.4145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	13.7804					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0599	0.5114	0.2176	3.2600e-003		0.0414	0.0414		0.0414	0.0414	0.0000	592.3048	592.3048	0.0114	0.0109	595.8246
Landscaping	0.8189	0.3150	27.3014	1.4500e-003		0.1520	0.1520		0.1520	0.1520	0.0000	44.8053	44.8053	0.0428	0.0000	45.8746
Total	**17.0737**	**0.8265**	**27.5190**	**4.7100e-003**		**0.1933**	**0.1933**		**0.1933**	**0.1933**	**0.0000**	**637.1101**	**637.1101**	**0.0541**	**0.0109**	**641.6991**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	52.6433	5.4070	0.1277	225.8635
Unmitigated	65.8042	6.7587	0.1596	282.3294

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.60497 / 2.2727	1.1437	0.1175	2.7700e-003	4.9070
City Park	0 / 117.563	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	117.276 / 73.9348	37.2063	3.8214	0.0902	159.6315
Elementary School	4.44848 / 11.4389	1.4113	0.1450	3.4200e-003	6.0551
General Office Building	14.8106 / 9.07744	4.6987	0.4826	0.0114	20.1596
High School	1.54614 / 3.97579	0.4905	0.0504	1.1900e-003	2.1046
Junior High School	1.21939 / 3.13558	0.3869	0.0397	9.4000e-004	1.6598
Library	0.459008 / 0.717936	0.1456	0.0150	3.5000e-004	0.6248
Regional Shopping Center	9.87609 / 6.05309	3.1332	0.3218	7.6000e-003	13.4430
Single Family Housing	52.1226 / 32.8599	16.5361	1.6984	0.0401	70.9472
Supermarket	2.05488 / 0.063553	0.6519	0.0670	1.5800e-003	2.7970
Total		**65.8042**	**6.7587**	**0.1596**	**282.3294**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.88398 / 2.13407	0.9150	0.0940	2.2200e-003	3.9256
City Park	0 / 110.392	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	93.8208 / 69.4248	29.7650	3.0572	0.0722	127.7052
Elementary School	3.55878 / 10.7412	1.1290	0.1160	2.7400e-003	4.8441
General Office Building	11.8484 / 8.52371	3.7590	0.3861	9.1200e-003	16.1276
High School	1.23691 / 3.73327	0.3924	0.0403	9.5000e-004	1.6836
Junior High School	0.975514 / 2.94431	0.3095	0.0318	7.5000e-004	1.3278
Library	0.367207 / 0.674142	0.1165	0.0120	2.8000e-004	0.4998
Regional Shopping Center	7.90087 / 5.68385	2.5066	0.2575	6.0800e-003	10.7544
Single Family Housing	41.6981 / 30.8554	13.2289	1.3587	0.0321	56.7578
Supermarket	1.6439 / 0.0596763	0.5215	0.0536	1.2600e-003	2.2376
Total		**52.6434**	**5.4070**	**0.1277**	**225.8635**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	602.7918	35.6240	0.0000	1,493.391 2
Unmitigated	602.7918	35.6240	0.0000	1,493.391 2

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.45	5.1661	0.3053	0.0000	12.7988
City Park	8.49	1.7234	0.1019	0.0000	4.2696
Condo/Townhouse	827.99	168.0745	9.9329	0.0000	416.3974
Elementary School	334.89	67.9796	4.0175	0.0000	168.4167
General Office Building	77.5	15.7318	0.9297	0.0000	38.9749
High School	64.06	13.0036	0.7685	0.0000	32.2159
Junior High School	91.8	18.6346	1.1013	0.0000	46.1664
Library	13.51	2.7424	0.1621	0.0000	6.7942
Regional Shopping Center	140	28.4187	1.6795	0.0000	70.4062
Single Family Housing	1291.84	262.2319	15.4975	0.0000	649.6683
Supermarket	94.02	19.0852	1.1279	0.0000	47.2828
Total		**602.7918**	**35.6240**	**0.0000**	**1,493.3912**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.45	5.1661	0.3053	0.0000	12.7988
City Park	8.49	1.7234	0.1019	0.0000	4.2696
Condo/Townhouse	827.99	168.0745	9.9329	0.0000	416.3974
Elementary School	334.89	67.9796	4.0175	0.0000	168.4167
General Office Building	77.5	15.7318	0.9297	0.0000	38.9749
High School	64.06	13.0036	0.7685	0.0000	32.2159
Junior High School	91.8	18.6346	1.1013	0.0000	46.1664
Library	13.51	2.7424	0.1621	0.0000	6.7942
Regional Shopping Center	140	28.4187	1.6795	0.0000	70.4062
Single Family Housing	1291.84	262.2319	15.4975	0.0000	649.6683
Supermarket	94.02	19.0852	1.1279	0.0000	47.2828
Total		**602.7918**	**35.6240**	**0.0000**	**1,493.3912**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Smaller-Scale Alt.

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	83.33	1000sqft	1.91	83,332.50	0
Elementary School	1,835.00	Student	13.33	153,412.18	0
High School	351.00	Student	12.00	46,564.00	0
Junior High School	503.00	Student	6.67	59,133.53	0
Library	14.67	1000sqft	0.34	14,666.52	0
City Park	98.67	Acre	98.67	4,297,877.02	0
Apartments Mid Rise	55.33	Dwelling Unit	1.45	55,332.78	203
Condo/Townhouse	1,799.98	Dwelling Unit	112.50	1,799,982.00	6606
Single Family Housing	799.99	Dwelling Unit	259.74	1,439,985.60	2936
Regional Shopping Center	133.33	1000sqft	3.06	133,332.00	0
Supermarket	16.67	1000sqft	0.38	16,666.50	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2, CH4, and N2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Smaller-scale Alternative modeled with 33.3333% reduced unit amounts, lot acreage, square feet, and population.

Construction Phase - No construction modeling for the Alternative.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - Trip lengths modified to reflect what is provided with Fehr & Peers TIA (average of 3.54 daily VMT/trip).

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	83,330.00	83,332.50
tblLandUse	LandUseSquareFeet	14,670.00	14,666.52
tblLandUse	LandUseSquareFeet	4,298,065.20	4,297,877.02
tblLandUse	LandUseSquareFeet	55,330.00	55,332.78
tblLandUse	LandUseSquareFeet	1,799,980.00	1,799,982.00
tblLandUse	LandUseSquareFeet	1,439,982.00	1,439,985.60
tblLandUse	LandUseSquareFeet	133,330.00	133,332.00
tblLandUse	LandUseSquareFeet	16,670.00	16,666.50
tblLandUse	LotAcreage	3.52	13.33
tblLandUse	LotAcreage	1.07	12.00
tblLandUse	LotAcreage	1.36	6.67
tblLandUse	LotAcreage	1.46	1.45
tblLandUse	Population	158.00	203.00
tblLandUse	Population	5,148.00	6,606.00
tblLandUse	Population	2,288.00	2,936.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3863	33.5343	22.3859	0.0409	0.3705	1.6609	2.0313	0.0737	1.5439	1.6176	0.0000	3,962.5660	3,962.5660	1.0666	0.0000	3,989.2307
2021	3.2336	31.7451	22.1437	0.0409	0.3706	1.5533	1.9239	0.0737	1.4430	1.5167	0.0000	3,957.4000	3,957.4000	1.0629	0.0000	3,983.9721
2022	2.7028	25.9971	21.1249	0.0408	0.4395	1.2445	1.6839	0.0906	1.1570	1.2476	0.0000	3,950.7402	3,950.7402	1.0598	0.0000	3,977.2361
Maximum	**3.3863**	**33.5343**	**22.3859**	**0.0409**	**0.4395**	**1.6609**	**2.0313**	**0.0906**	**1.5439**	**1.6176**	**0.0000**	**3,962.5660**	**3,962.5660**	**1.0666**	**0.0000**	**3,989.2307**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3863	33.5343	22.3859	0.0409	0.2525	1.6609	1.9134	0.0558	1.5439	1.5997	0.0000	3,962.5660	3,962.5660	1.0666	0.0000	3,989.2307
2021	3.2336	31.7451	22.1437	0.0409	0.2526	1.5533	1.8059	0.0558	1.4430	1.4988	0.0000	3,957.4000	3,957.4000	1.0629	0.0000	3,983.9721
2022	2.7028	25.9971	21.1249	0.0408	0.3215	1.2445	1.5659	0.0727	1.1570	1.2297	0.0000	3,950.7402	3,950.7402	1.0598	0.0000	3,977.2361
Maximum	**3.3863**	**33.5343**	**22.3859**	**0.0409**	**0.3215**	**1.6609**	**1.9134**	**0.0727**	**1.5439**	**1.5997**	**0.0000**	**3,962.5660**	**3,962.5660**	**1.0666**	**0.0000**	**3,989.2307**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.98	0.00	6.28	22.53	0.00	1.22	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	636.8902	18.6359	909.9501	1.3424		99.0568	99.0568		99.0568	99.0568	10,449.0068	11,067.8447	21,516.8515	13.1835	0.8798	22,108.6141
Energy	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
Mobile	33.2537	176.5124	339.1475	1.7251	182.9303	0.7358	183.6661	48.9362	0.6840	49.6201		175,778.5662	175,778.5662	5.8824		175,925.6273
Total	**672.0541**	**211.5879**	**1,256.8969**	**3.1717**	**182.9303**	**101.1123**	**284.0427**	**48.9362**	**101.0605**	**149.9967**	**10,449.0068**	**207,684.6201**	**218,133.6270**	**19.4653**	**1.2618**	**218,996.2817**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	96.7506	14.9944	223.7194	0.0912		2.2245	2.2245		2.2245	2.2245	0.0000	16,319.6094	16,319.6094	0.6824	0.2920	16,423.6698
Energy	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
Mobile	31.1389	168.4980	298.3039	1.5001	156.4054	0.6430	157.0485	41.8404	0.5976	42.4381		152,910.3804	152,910.3804	5.2587		153,041.8468
Total	**129.7996**	**199.9321**	**529.8226**	**1.6955**	**156.4054**	**4.1873**	**160.5927**	**41.8404**	**4.1419**	**45.9823**	**0.0000**	**190,068.1991**	**190,068.1991**	**6.3404**	**0.6740**	**190,427.5570**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	80.69	5.51	57.85	46.54	14.50	95.86	43.46	14.50	95.90	69.34	100.00	8.48	12.87	67.43	46.59	13.05

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	4/19/2022	5	600	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.704 9	3,747.704 9	1.0580		3,774.153 6
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2145**	**1.6587**	**1.8732**	**0.0325**	**1.5419**	**1.5743**		**3,747.704 9**	**3,747.704 9**	**1.0580**		**3,774.153 6**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9600e-003	0.2800	0.0563	7.8000e-004	0.0327	1.1000e-003	0.0338	8.5000e-003	1.0500e-003	9.5600e-003		82.1606	82.1606	2.9700e-003		82.2349
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0742**	**0.3333**	**0.6327**	**2.1100e-003**	**0.1559**	**2.1700e-003**	**0.1581**	**0.0412**	**2.0300e-003**	**0.0432**		**214.8611**	**214.8611**	**8.6400e-003**		**215.0771**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0965**	**1.6587**	**1.7552**	**0.0146**	**1.5419**	**1.5565**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9600e-003	0.2800	0.0563	7.8000e-004	0.0327	1.1000e-003	0.0338	8.5000e-003	1.0500e-003	9.5600e-003		82.1606	82.1606	2.9700e-003		82.2349
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0742**	**0.3333**	**0.6327**	**2.1100e-003**	**0.1559**	**2.1700e-003**	**0.1581**	**0.0412**	**2.0300e-003**	**0.0432**		**214.8611**	**214.8611**	**8.6400e-003**		**215.0771**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.2145**	**1.5513**	**1.7659**	**0.0325**	**1.4411**	**1.4736**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.4300e-003	0.2568	0.0537	7.7000e-004	0.0328	9.6000e-004	0.0338	8.5300e-003	9.2000e-004	9.4500e-003		81.2006	81.2006	2.9300e-003		81.2739
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0685**	**0.3044**	**0.5787**	**2.0600e-003**	**0.1561**	**1.9900e-003**	**0.1580**	**0.0412**	**1.8700e-003**	**0.0431**		**209.4551**	**209.4551**	**7.9800e-003**		**209.6547**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0965**	**1.5513**	**1.6479**	**0.0146**	**1.4411**	**1.4557**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.4300e-003	0.2568	0.0537	7.7000e-004	0.0328	9.6000e-004	0.0338	8.5300e-003	9.2000e-004	9.4500e-003		81.2006	81.2006	2.9300e-003		81.2739
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0611	0.0476	0.5250	1.2900e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		128.2544	128.2544	5.0500e-003		128.3808
Total	**0.0685**	**0.3044**	**0.5787**	**2.0600e-003**	**0.1561**	**1.9900e-003**	**0.1580**	**0.0412**	**1.8700e-003**	**0.0431**		**209.4551**	**209.4551**	**7.9800e-003**		**209.6547**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.2145**	**1.2427**	**1.4572**	**0.0325**	**1.1553**	**1.1878**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.9400e-003	0.2350	0.0512	7.6000e-004	0.1017	8.2000e-004	0.1025	0.0254	7.9000e-004	0.0262		80.2194	80.2194	2.8800e-003		80.2914
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0636**	**0.2777**	**0.5308**	**2.0000e-003**	**0.2249**	**1.8100e-003**	**0.2267**	**0.0581**	**1.7000e-003**	**0.0598**		**203.9590**	**203.9590**	**7.4000e-003**		**204.1441**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0965**	**1.2427**	**1.3392**	**0.0146**	**1.1553**	**1.1699**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.9400e-003	0.2350	0.0512	7.6000e-004	0.1017	8.2000e-004	0.1025	0.0254	7.9000e-004	0.0262		80.2194	80.2194	2.8800e-003		80.2914
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0427	0.4796	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		123.7396	123.7396	4.5200e-003		123.8527
Total	**0.0636**	**0.2777**	**0.5308**	**2.0000e-003**	**0.2249**	**1.8100e-003**	**0.2267**	**0.0581**	**1.7000e-003**	**0.0598**		**203.9590**	**203.9590**	**7.4000e-003**		**204.1441**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	31.1389	168.4980	298.3039	1.5001	156.4054	0.6430	157.0485	41.8404	0.5976	42.4381		152,910.3804	152,910.3804	5.2587		153,041.8468
Unmitigated	33.2537	176.5124	339.1475	1.7251	182.9303	0.7358	183.6661	48.9362	0.6840	49.6201		175,778.5662	175,778.5662	5.8824		175,925.6273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	367.94	353.56	324.23	1,036,097	885,863
City Park	186.49	2,244.74	1651.74	1,472,716	1,259,172
Condo/Townhouse	10,457.88	10,205.89	8711.90	29,305,723	25,056,393
Elementary School	2,367.15	0.00	0.00	3,728,158	3,187,575
General Office Building	919.13	204.99	87.50	1,668,777	1,426,805
High School	600.21	214.11	87.75	1,235,364	1,056,237
Junior High School	814.86	0.00	0.00	1,308,545	1,118,806
Library	825.04	682.89	373.94	1,254,686	1,072,756
Regional Shopping Center	5,693.19	6,662.50	3365.25	9,641,600	8,243,568
Single Family Housing	7,615.90	7,927.90	6895.91	21,772,663	18,615,627
Supermarket	1,704.34	2,960.43	2774.55	2,316,596	1,980,690
Total	31,552.14	31,457.00	24,272.78	74,740,926	63,903,492

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
NaturalGas Unmitigated	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1309.65	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003		154.0760	154.0760	2.9500e-003	2.8200e-003	154.9916
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	92331.6	0.9957	8.5090	3.6209	0.0543		0.6880	0.6880		0.6880	0.6880		10,862.5443	10,862.5443	0.2082	0.1992	10,927.0949
Elementary School	7750.47	0.0836	0.7599	0.6383	4.5600e-003		0.0578	0.0578		0.0578	0.0578		911.8197	911.8197	0.0175	0.0167	917.2382
General Office Building	3737.41	0.0403	0.3664	0.3078	2.2000e-003		0.0279	0.0279		0.0279	0.0279		439.6948	439.6948	8.4300e-003	8.0600e-003	442.3077
High School	2352.44	0.0254	0.2306	0.1937	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.7575	276.7575	5.3000e-003	5.0700e-003	278.4021
Junior High School	2987.46	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223		351.4657	351.4657	6.7400e-003	6.4400e-003	353.5543
Library	1060.01	0.0114	0.1039	0.0873	6.2000e-004		7.9000e-003	7.9000e-003		7.9000e-003	7.9000e-003		124.7068	124.7068	2.3900e-003	2.2900e-003	125.4479
Regional Shopping Center	865.745	9.3400e-003	0.0849	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003		101.8523	101.8523	1.9500e-003	1.8700e-003	102.4576
Single Family Housing	63703.5	0.6870	5.8707	2.4982	0.0375		0.4747	0.4747		0.4747	0.4747		7,494.5307	7,494.5307	0.1437	0.1374	7,539.0669
Supermarket	1026.47	0.0111	0.1006	0.0845	6.0000e-004		7.6500e-003	7.6500e-003		7.6500e-003	7.6500e-003		120.7616	120.7616	2.3100e-003	2.2100e-003	121.4792
Total		**1.9102**	**16.4396**	**7.7993**	**0.1042**		**1.3198**	**1.3198**		**1.3198**	**1.3198**		**20,838.2093**	**20,838.2093**	**0.3994**	**0.3820**	**20,962.0403**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.30965	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003		154.0760	154.0760	2.9500e-003	2.8200e-003	154.9916
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	92.3316	0.9957	8.5090	3.6209	0.0543		0.6880	0.6880		0.6880	0.6880		10,862.5443	10,862.5443	0.2082	0.1992	10,927.0949
Elementary School	7.75047	0.0836	0.7599	0.6383	4.5600e-003		0.0578	0.0578		0.0578	0.0578		911.8197	911.8197	0.0175	0.0167	917.2382
General Office Building	3.73741	0.0403	0.3664	0.3078	2.2000e-003		0.0279	0.0279		0.0279	0.0279		439.6948	439.6948	8.4300e-003	8.0600e-003	442.3077
High School	2.35244	0.0254	0.2306	0.1937	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.7575	276.7575	5.3000e-003	5.0700e-003	278.4021
Junior High School	2.98746	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223		351.4657	351.4657	6.7400e-003	6.4400e-003	353.5543
Library	1.06001	0.0114	0.1039	0.0873	6.2000e-004		7.9000e-003	7.9000e-003		7.9000e-003	7.9000e-003		124.7068	124.7068	2.3900e-003	2.2900e-003	125.4479
Regional Shopping Center	0.865745	9.3400e-003	0.0849	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003		101.8523	101.8523	1.9500e-003	1.8700e-003	102.4576
Single Family Housing	63.7035	0.6870	5.8707	2.4982	0.0375		0.4747	0.4747		0.4747	0.4747		7,494.5307	7,494.5307	0.1437	0.1374	7,539.0669
Supermarket	1.02647	0.0111	0.1006	0.0845	6.0000e-004		7.6500e-003	7.6500e-003		7.6500e-003	7.6500e-003		120.7616	120.7616	2.3100e-003	2.2100e-003	121.4792
Total		**1.9102**	**16.4396**	**7.7993**	**0.1042**		**1.3198**	**1.3198**		**1.3198**	**1.3198**		**20,838.2093**	**20,838.2093**	**0.3994**	**0.3820**	**20,962.0403**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	96.7506	14.9944	223.7194	0.0912		2.2245	2.2245		2.2245	2.2245	0.0000	16,319.6094	16,319.6094	0.6824	0.2920	16,423.6698
Unmitigated	636.8902	18.6359	909.9501	1.3424		99.0568	99.0568		99.0568	99.0568	10,449.0068	11,067.8447	21,516.8515	13.1835	0.8798	22,108.6141

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	13.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	81.5930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	535.5155	16.1157	691.5389	1.3308		97.8409	97.8409		97.8409	97.8409	10,449.0068	10,672.7294	21,121.7362	12.8063	0.8798	21,704.0697
Landscaping	6.5515	2.5203	218.4112	0.0116		1.2159	1.2159		1.2159	1.2159		395.1153	395.1153	0.3772		404.5444
Total	**636.8902**	**18.6359**	**909.9501**	**1.3424**		**99.0568**	**99.0568**		**99.0568**	**99.0568**	**10,449.0068**	**11,067.8447**	**21,516.8515**	**13.1835**	**0.8798**	**22,108.6141**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	13.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.5091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4598	12.4742	5.3082	0.0796		1.0086	1.0086		1.0086	1.0086	0.0000	15,924.4941	15,924.4941	0.3052	0.2920	16,019.1254
Landscaping	6.5515	2.5203	218.4112	0.0116		1.2159	1.2159		1.2159	1.2159		395.1153	395.1153	0.3772		404.5444
Total	**96.7506**	**14.9944**	**223.7194**	**0.0912**		**2.2245**	**2.2245**		**2.2245**	**2.2245**	**0.0000**	**16,319.6094**	**16,319.6094**	**0.6824**	**0.2920**	**16,423.6698**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas CASP Model Full Buildout (2040) - Smaller-Scale Alt.

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	83.33	1000sqft	1.91	83,332.50	0
Elementary School	1,835.00	Student	13.33	153,412.18	0
High School	351.00	Student	12.00	46,564.00	0
Junior High School	503.00	Student	6.67	59,133.53	0
Library	14.67	1000sqft	0.34	14,666.52	0
City Park	98.67	Acre	98.67	4,297,877.02	0
Apartments Mid Rise	55.33	Dwelling Unit	1.45	55,332.78	203
Condo/Townhouse	1,799.98	Dwelling Unit	112.50	1,799,982.00	6606
Single Family Housing	799.99	Dwelling Unit	259.74	1,439,985.60	2936
Regional Shopping Center	133.33	1000sqft	3.06	133,332.00	0
Supermarket	16.67	1000sqft	0.38	16,666.50	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2, CH4, and N2O intensity factors reduced to 0 due to carbon-free electricity from Monterey Bay Community Power (MBCP).

Land Use - Land Use Types & unit amounts consistent with TIA (Fehr & Peers). Smaller-scale Alternative modeled with 33.3333% reduced unit amounts, lot acreage, square feet, and population.

Construction Phase - No construction modeling for the Alternative.

Off-road Equipment -

Trips and VMT - Default values.

Demolition - Assume approximately 125,000 sf of demolition (existing buildings located in the Plan Area).

Grading - Assumes whole area (760.44 acres) is graded.

Vehicle Trips - Trip lengths modified to reflect what is provided with Fehr & Peers TIA (average of 3.54 daily VMT/trip).

Vehicle Emission Factors -

Energy Use -

Construction Off-road Equipment Mitigation - Construction mitigation: Water exposed area 2x per day. Limit vehicle speed to 15mph on construction sites; Tier 3 construction equipment.

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. Est. 43 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblLandUse	LandUseSquareFeet	83,330.00	83,332.50
tblLandUse	LandUseSquareFeet	14,670.00	14,666.52
tblLandUse	LandUseSquareFeet	4,298,065.20	4,297,877.02
tblLandUse	LandUseSquareFeet	55,330.00	55,332.78
tblLandUse	LandUseSquareFeet	1,799,980.00	1,799,982.00
tblLandUse	LandUseSquareFeet	1,439,982.00	1,439,985.60
tblLandUse	LandUseSquareFeet	133,330.00	133,332.00
tblLandUse	LandUseSquareFeet	16,670.00	16,666.50
tblLandUse	LotAcreage	3.52	13.33
tblLandUse	LotAcreage	1.07	12.00
tblLandUse	LotAcreage	1.36	6.67
tblLandUse	LotAcreage	1.46	1.45
tblLandUse	Population	158.00	203.00
tblLandUse	Population	5,148.00	6,606.00
tblLandUse	Population	2,288.00	2,936.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3925	33.5547	22.3813	0.0408	0.3705	1.6609	2.0314	0.0737	1.5439	1.6176	0.0000	3,952.5024	3,952.5024	1.0665	0.0000	3,979.1656
2021	3.2393	31.7630	22.1379	0.0408	0.3706	1.5534	1.9239	0.0737	1.4430	1.5167	0.0000	3,947.6153	3,947.6153	1.0629	0.0000	3,974.1863
2022	2.7080	26.0128	21.1181	0.0407	0.4395	1.2445	1.6839	0.0906	1.1570	1.2476	0.0000	3,941.2398	3,941.2398	1.0598	0.0000	3,967.7350
Maximum	**3.3925**	**33.5547**	**22.3813**	**0.0408**	**0.4395**	**1.6609**	**2.0314**	**0.0906**	**1.5439**	**1.6176**	**0.0000**	**3,952.5024**	**3,952.5024**	**1.0665**	**0.0000**	**3,979.1656**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.3925	33.5547	22.3813	0.0408	0.2525	1.6609	1.9134	0.0558	1.5439	1.5997	0.0000	3,952.5024	3,952.5024	1.0665	0.0000	3,979.1655
2021	3.2393	31.7630	22.1379	0.0408	0.2526	1.5534	1.8060	0.0558	1.4430	1.4988	0.0000	3,947.6153	3,947.6153	1.0629	0.0000	3,974.1863
2022	2.7080	26.0128	21.1181	0.0407	0.3215	1.2445	1.5660	0.0727	1.1570	1.2297	0.0000	3,941.2398	3,941.2398	1.0598	0.0000	3,967.7350
Maximum	**3.3925**	**33.5547**	**22.3813**	**0.0408**	**0.3215**	**1.6609**	**1.9134**	**0.0727**	**1.5439**	**1.5997**	**0.0000**	**3,952.5024**	**3,952.5024**	**1.0665**	**0.0000**	**3,979.1655**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.98	0.00	6.28	22.53	0.00	1.22	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	636.8902	18.6359	909.9501	1.3424		99.0568	99.0568		99.0568	99.0568	10,449.0068	11,067.8447	21,516.8515	13.1835	0.8798	22,108.6141
Energy	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
Mobile	29.9930	180.8440	348.1961	1.6355	182.9303	0.7379	183.6682	48.9362	0.6860	49.6222		166,684.0850	166,684.0850	6.1379		166,837.5320
Total	**668.7934**	**215.9195**	**1,265.9455**	**3.0821**	**182.9303**	**101.1144**	**284.0448**	**48.9362**	**101.0625**	**149.9987**	**10,449.0068**	**198,590.1390**	**209,039.1458**	**19.7208**	**1.2618**	**209,908.1864**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	96.7506	14.9944	223.7194	0.0912		2.2245	2.2245		2.2245	2.2245	0.0000	16,319.6094	16,319.6094	0.6824	0.2920	16,423.6698
Energy	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
Mobile	27.8347	171.8795	309.5035	1.4209	156.4054	0.6452	157.0506	41.8404	0.5997	42.4401		144,852.5733	144,852.5733	5.5145		144,990.4350
Total	**126.4954**	**203.3135**	**541.0222**	**1.6163**	**156.4054**	**4.1894**	**160.5948**	**41.8404**	**4.1439**	**45.9843**	**0.0000**	**182,010.3920**	**182,010.3920**	**6.5963**	**0.6740**	**182,376.1452**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	81.09	5.84	57.26	47.56	14.50	95.86	43.46	14.50	95.90	69.34	100.00	8.35	12.93	66.55	46.59	13.12

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2020	4/19/2022	5	600	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	569.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2145**	**1.6587**	**1.8732**	**0.0325**	**1.5419**	**1.5743**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.2300e-003	0.2866	0.0609	7.6000e-004	0.0327	1.1300e-003	0.0339	8.5000e-003	1.0800e-003	9.5800e-003		80.5479	80.5479	3.1800e-003		80.6273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0803**	**0.3537**	**0.6281**	**2.0100e-003**	**0.1559**	**2.2000e-003**	**0.1581**	**0.0412**	**2.0600e-003**	**0.0433**		**204.7974**	**204.7974**	**8.5800e-003**		**205.0119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0965**	**1.6587**	**1.7552**	**0.0146**	**1.5419**	**1.5565**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.2300e-003	0.2866	0.0609	7.6000e-004	0.0327	1.1300e-003	0.0339	8.5000e-003	1.0800e-003	9.5800e-003		80.5479	80.5479	3.1800e-003		80.6273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0803**	**0.3537**	**0.6281**	**2.0100e-003**	**0.1559**	**2.2000e-003**	**0.1581**	**0.0412**	**2.0600e-003**	**0.0433**		**204.7974**	**204.7974**	**8.5800e-003**		**205.0119**

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.2145**	**1.5513**	**1.7659**	**0.0325**	**1.4411**	**1.4736**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.6900e-003	0.2624	0.0581	7.5000e-004	0.0328	9.9000e-004	0.0338	8.5300e-003	9.5000e-004	9.4800e-003		79.5842	79.5842	3.1400e-003		79.6626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0742**	**0.3223**	**0.5729**	**1.9600e-003**	**0.1561**	**2.0200e-003**	**0.1581**	**0.0412**	**1.9000e-003**	**0.0431**		**199.6703**	**199.6703**	**7.9500e-003**		**199.8689**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.0965**	**1.5513**	**1.6479**	**0.0146**	**1.4411**	**1.4557**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	7.6900e-003	0.2624	0.0581	7.5000e-004	0.0328	9.9000e-004	0.0338	8.5300e-003	9.5000e-004	9.4800e-003		79.5842	79.5842	3.1400e-003		79.6626
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0599	0.5148	1.2100e-003	0.1232	1.0300e-003	0.1243	0.0327	9.5000e-004	0.0336		120.0862	120.0862	4.8100e-003		120.2063
Total	**0.0742**	**0.3223**	**0.5729**	**1.9600e-003**	**0.1561**	**2.0200e-003**	**0.1581**	**0.0412**	**1.9000e-003**	**0.0431**		**199.6703**	**199.6703**	**7.9500e-003**		**199.8689**

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Fugitive Dust					0.2145	0.0000	0.2145	0.0325	0.0000	0.0325			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.2145**	**1.2427**	**1.4572**	**0.0325**	**1.1553**	**1.1878**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.1700e-003	0.2397	0.0553	7.4000e-004	0.1017	8.5000e-004	0.1026	0.0254	8.1000e-004	0.0263		78.5981	78.5981	3.0900e-003		78.6753
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0688**	**0.2934**	**0.5241**	**1.9000e-003**	**0.2249**	**1.8400e-003**	**0.2268**	**0.0581**	**1.7200e-003**	**0.0599**		**194.4586**	**194.4586**	**7.3800e-003**		**194.6430**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0965	0.0000	0.0965	0.0146	0.0000	0.0146			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0965**	**1.2427**	**1.3392**	**0.0146**	**1.1553**	**1.1699**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.1700e-003	0.2397	0.0553	7.4000e-004	0.1017	8.5000e-004	0.1026	0.0254	8.1000e-004	0.0263		78.5981	78.5981	3.0900e-003		78.6753
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0617	0.0537	0.4688	1.1600e-003	0.1232	9.9000e-004	0.1242	0.0327	9.1000e-004	0.0336		115.8605	115.8605	4.2900e-003		115.9677
Total	**0.0688**	**0.2934**	**0.5241**	**1.9000e-003**	**0.2249**	**1.8400e-003**	**0.2268**	**0.0581**	**1.7200e-003**	**0.0599**		**194.4586**	**194.4586**	**7.3800e-003**		**194.6430**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	27.8347	171.8795	309.5035	1.4209	156.4054	0.6452	157.0506	41.8404	0.5997	42.4401		144,852.5733	144,852.5733	5.5145		144,990.4350
Unmitigated	29.9930	180.8440	348.1961	1.6355	182.9303	0.7379	183.6682	48.9362	0.6860	49.6222		166,684.0850	166,684.0850	6.1379		166,837.5320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	367.94	353.56	324.23	1,036,097	885,863
City Park	186.49	2,244.74	1651.74	1,472,716	1,259,172
Condo/Townhouse	10,457.88	10,205.89	8711.90	29,305,723	25,056,393
Elementary School	2,367.15	0.00	0.00	3,728,158	3,187,575
General Office Building	919.13	204.99	87.50	1,668,777	1,426,805
High School	600.21	214.11	87.75	1,235,364	1,056,237
Junior High School	814.86	0.00	0.00	1,308,545	1,118,806
Library	825.04	682.89	373.94	1,254,686	1,072,756
Regional Shopping Center	5,693.19	6,662.50	3365.25	9,641,600	8,243,568
Single Family Housing	7,615.90	7,927.90	6895.91	21,772,663	18,615,627
Supermarket	1,704.34	2,960.43	2774.55	2,316,596	1,980,690
Total	31,552.14	31,457.00	24,272.78	74,740,926	63,903,492

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Single Family Housing	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
City Park	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Condo/Townhouse	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Elementary School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
General Office Building	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Junior High School	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Library	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Regional Shopping Center	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Single Family Housing	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491
Supermarket	0.577209	0.024156	0.214776	0.103225	0.009844	0.003830	0.021383	0.030701	0.004268	0.001869	0.007043	0.001207	0.000491

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403
NaturalGas Unmitigated	1.9102	16.4396	7.7993	0.1042		1.3198	1.3198		1.3198	1.3198		20,838.2093	20,838.2093	0.3994	0.3820	20,962.0403

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1309.65	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003		154.0760	154.0760	2.9500e-003	2.8200e-003	154.9916
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	92331.6	0.9957	8.5090	3.6209	0.0543		0.6880	0.6880		0.6880	0.6880		10,862.5443	10,862.5443	0.2082	0.1992	10,927.0949
Elementary School	7750.47	0.0836	0.7599	0.6383	4.5600e-003		0.0578	0.0578		0.0578	0.0578		911.8197	911.8197	0.0175	0.0167	917.2382
General Office Building	3737.41	0.0403	0.3664	0.3078	2.2000e-003		0.0279	0.0279		0.0279	0.0279		439.6948	439.6948	8.4300e-003	8.0600e-003	442.3077
High School	2352.44	0.0254	0.2306	0.1937	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.7575	276.7575	5.3000e-003	5.0700e-003	278.4021
Junior High School	2987.46	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223		351.4657	351.4657	6.7400e-003	6.4400e-003	353.5543
Library	1060.01	0.0114	0.1039	0.0873	6.2000e-004		7.9000e-003	7.9000e-003		7.9000e-003	7.9000e-003		124.7068	124.7068	2.3900e-003	2.2900e-003	125.4479
Regional Shopping Center	865.745	9.3400e-003	0.0849	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003		101.8523	101.8523	1.9500e-003	1.8700e-003	102.4576
Single Family Housing	63703.5	0.6870	5.8707	2.4982	0.0375		0.4747	0.4747		0.4747	0.4747		7,494.5307	7,494.5307	0.1437	0.1374	7,539.0669
Supermarket	1026.47	0.0111	0.1006	0.0845	6.0000e-004		7.6500e-003	7.6500e-003		7.6500e-003	7.6500e-003		120.7616	120.7616	2.3100e-003	2.2100e-003	121.4792
Total		**1.9102**	**16.4396**	**7.7993**	**0.1042**		**1.3198**	**1.3198**		**1.3198**	**1.3198**		**20,838.2093**	**20,838.2093**	**0.3994**	**0.3820**	**20,962.0403**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	1.30965	0.0141	0.1207	0.0514	7.7000e-004		9.7600e-003	9.7600e-003		9.7600e-003	9.7600e-003		154.0760	154.0760	2.9500e-003	2.8200e-003	154.9916
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	92.3316	0.9957	8.5090	3.6209	0.0543		0.6880	0.6880		0.6880	0.6880		10,862.5443	10,862.5443	0.2082	0.1992	10,927.0949
Elementary School	7.75047	0.0836	0.7599	0.6383	4.5600e-003		0.0578	0.0578		0.0578	0.0578		911.8197	911.8197	0.0175	0.0167	917.2382
General Office Building	3.73741	0.0403	0.3664	0.3078	2.2000e-003		0.0279	0.0279		0.0279	0.0279		439.6948	439.6948	8.4300e-003	8.0600e-003	442.3077
High School	2.35244	0.0254	0.2306	0.1937	1.3800e-003		0.0175	0.0175		0.0175	0.0175		276.7575	276.7575	5.3000e-003	5.0700e-003	278.4021
Junior High School	2.98746	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223		351.4657	351.4657	6.7400e-003	6.4400e-003	353.5543
Library	1.06001	0.0114	0.1039	0.0873	6.2000e-004		7.9000e-003	7.9000e-003		7.9000e-003	7.9000e-003		124.7068	124.7068	2.3900e-003	2.2900e-003	125.4479
Regional Shopping Center	0.865745	9.3400e-003	0.0849	0.0713	5.1000e-004		6.4500e-003	6.4500e-003		6.4500e-003	6.4500e-003		101.8523	101.8523	1.9500e-003	1.8700e-003	102.4576
Single Family Housing	63.7035	0.6870	5.8707	2.4982	0.0375		0.4747	0.4747		0.4747	0.4747		7,494.5307	7,494.5307	0.1437	0.1374	7,539.0669
Supermarket	1.02647	0.0111	0.1006	0.0845	6.0000e-004		7.6500e-003	7.6500e-003		7.6500e-003	7.6500e-003		120.7616	120.7616	2.3100e-003	2.2100e-003	121.4792
Total		**1.9102**	**16.4396**	**7.7993**	**0.1042**		**1.3198**	**1.3198**		**1.3198**	**1.3198**		**20,838.2093**	**20,838.2093**	**0.3994**	**0.3820**	**20,962.0403**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	96.7506	14.9944	223.7194	0.0912		2.2245	2.2245		2.2245	2.2245	0.0000	16,319.6094	16,319.6094	0.6824	0.2920	16,423.6698
Unmitigated	636.8902	18.6359	909.9501	1.3424		99.0568	99.0568		99.0568	99.0568	10,449.0068	11,067.8447	21,516.8515	13.1835	0.8798	22,108.6141

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	13.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	81.5930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	535.5155	16.1157	691.5389	1.3308		97.8409	97.8409		97.8409	97.8409	10,449.0068	10,672.7294	21,121.7362	12.8063	0.8798	21,704.0697
Landscaping	6.5515	2.5203	218.4112	0.0116		1.2159	1.2159		1.2159	1.2159		395.1153	395.1153	0.3772		404.5444
Total	**636.8902**	**18.6359**	**909.9501**	**1.3424**		**99.0568**	**99.0568**		**99.0568**	**99.0568**	**10,449.0068**	**11,067.8447**	**21,516.8515**	**13.1835**	**0.8798**	**22,108.6141**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	13.2302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	75.5091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4598	12.4742	5.3082	0.0796		1.0086	1.0086		1.0086	1.0086	0.0000	15,924.4941	15,924.4941	0.3052	0.2920	16,019.1254
Landscaping	6.5515	2.5203	218.4112	0.0116		1.2159	1.2159		1.2159	1.2159		395.1153	395.1153	0.3772		404.5444
Total	**96.7506**	**14.9944**	**223.7194**	**0.0912**		**2.2245**	**2.2245**		**2.2245**	**2.2245**	**0.0000**	**16,319.6094**	**16,319.6094**	**0.6824**	**0.2920**	**16,423.6698**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B.3

Energy Consumption Estimates

On-road Mobile (Operational) Energy Usage

Unmitigated:

Step 1:

Therefore:

Average Daily VMT:

184,767 Source: Fehr & Peers TIA

Step 2: Given:

Fleet Mix (CalEEMod Output)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
57.7209%	2.4156%	21.4776%	10.3225%	0.9844%	0.3830%	2.1383%	3.0701%	0.4268%	0.1869%	0.7043%	0.1207%	0.0491%

And:

Gasoline MPG Factors for each Vehicle Class - Year 2040 (EMFAC2017 Output)

LDA	LDT1	LDT2	MDV	MCY	MH
40.44131052	34.261903	34.274321	27.84492805	35.87953104	5.977230368

Diesel MPG Factors for each Vehicle Class - Year 2040 (EMFAC2017 Output)

LHD1	LHD2	MHD	HHD	OBUS	UBUS	SBUS
22.29999255	19.612594	11.317803	7.176957611	5.880690125	7.092641534	10.592977

Therefore:

Weighted Average MPG Factors

Gasoline: **37.4** Diesel: **10.5**

Step 3: **Therefore:**

4,580 daily gallons of gasoline **1,282 daily gallons of diesel**

or

1,671,591 annual gallons of gasoline **467,979 annual gallons of diesel**

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Demolition, Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Given Factor:	**509.2**	**metric tons**	**CO_2**	**(provided in CalEEMod Output File)**	
Conversion Factor:	2204.6262	pounds	per metric ton		
Intermediate Result:	**1,122,573**	**pounds**	**CO_2**		
Conversion Factor:	22.38	pounds	CO_2 per 1 gallon of diesel fuel		Source: U.S. EIA, 2016
Final Result:	**50,159.64**	**gallons**	**diesel fuel**		http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11

Mitigated Onsite Scenario	Total CO_2 (MT/yr) (provided in CalEEMod Output File)
Demolition	35.6985

On-road Mobile (Construction) Energy Usage - Demolition

Step 1: **Total Daily Worker Trips (CalEEMod output)**

15

Worker Trip Length (miles) (CalEEMod output)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEI

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class - Year 2040 (EMFAC2017 output)

LDA	LDT1	LDT2
40.441311	34.261903	34.274321

Therefore:

Weighted Average Worker MPG Factor

37.354711

Step 3: **Therefore:**

4.3 Worker daily gallons of gasoline (all workers)

Step 4: 21 **# of Days (CalEEMod ouput)**

Therefore:

Result: **91 Total gallons of gasoline (all workers)**

On-road Mobile (Construction) Energy Usage - Site Preparation

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

35

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

378

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	**LDT1**	**LDT2**
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2017) - Year 2040

LDA	**LDT1**	**LDT2**
40.441311	**34.261903**	**34.274321**

Therefore:

Weighted Average Worker MPG Factor

37.4

Step 3: **Therefore:**

10.1 Worker daily gallons of gasoline

Step 4: 67 **# of Days (CalEEMod Output)**

Therefore:

Result: **678 Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

20

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

216

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2017) - Year 2040

LDA	LDT1	LDT2
40.441311	34.261903	34.274321

Therefore:

Weighted Average Worker MPG Factor

37.4

Step 3: **Therefore:**

5.8 Worker daily gallons of gasoline

Step 4: 65 **# of Days (CalEEMod Output)**

Therefore:

Result: **376** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Underground Utilities

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

40

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

432

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2017) - Year 2040

LDA	LDT1	LDT2
40.441311	34.261903	34.274321

Therefore:

Weighted Average Worker MPG Factor

37.4

Step 3: **Therefore:**

11.6 Worker daily gallons of gasoline

Step 4: 45 **# of Days (CalEEMod Output)**

Therefore:

Result: **520** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Paving

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

15

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	**LDT1**	**LDT2**
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2017) - Year 2040

LDA	**LDT1**	**LDT2**
40.441311	34.261903	34.274321

Therefore:

Weighted Average Worker MPG Factor

37.4

Step 3: **Therefore:**

4.3 Worker daily gallons of gasoline

Step 4: 87 **# of Days (CalEEMod Output)**

Therefore:

Result: **377** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Building Construction

Step 1:

Total Daily Worker Trips (CalEEMod Output)

5,429	5%	**271**

Total Daily Vendor Trips (CalEEMod Output)

1,608	5%	**80**

Note: Assumes 5% of Plan Area under construction at given point in time (on average) until buildout.

Worker Trip Length (miles) (CalEEMod Output)
10.8

Vendor Trip Length (miles) (CalEEMod Output)
7.3

Therefore:

Average Worker Daily VMT:
2,932

Average Vendor Daily VMT:
587

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	**LDT1**	**LDT2**
0.5	0.25	0.25

Assumed Fleet Mix for Vendors

Fleet Mix for Workers (CalEEMod Output)

MHD	**HHD**
0%	100%

And:

MPG Factors for each Vehicle Class (from EMFAC2017) - Year 2040

<u>Gasoline:</u>

LDA	**LDT1**	**LDT2**
40.44131052	34.261903	34.274321

<u>Diesel:</u>

MHD	**HHD**
11.31780322	7.1769576

Therefore:

Weighted Average Worker (Gasoline) MPG Factor
37.4

Weighted Average Vendor (Diesel) MPG Factor
7.2

Step 3:

Therefore:
78 Worker daily gallons of gasoline

Therefore:
82 Vendor daily gallons of diesel

Step 4:

5086 **# of Days (CalEEMod Output)**

Therefore:
399,158 Total gallons of gasoline

Therefore:
415,925 Total gallons of diesel

On-road Mobile (Construction) Energy Usage - Architectural Coating

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

1086	5%	54

Note: Assumes 5% of Plan Area under construction at given point in time (on average) until buildout.

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

586

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2017 Output) - Year 2040

LDA	LDT1	LDT2
40.441311	34.261903	34.274321

Therefore:

Weighted Average Worker MPG Factor

37.4

Step 3: **Therefore:**

15.7 Worker daily gallons of gasoline

Step 4: 4,960 **# of Days (CalEEMod Output)**

Therefore:

Result: **77,868 Total gallons of gasoline**

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: MONTEREY
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Fuel Consumption	**MPG**	
MONTEREY	2040	All Other Buses	Aggregated	Aggregated	DSL	281.6176	13214.75	1.239865026	**10.65821**	
MONTEREY	2040	LDA	Aggregated	Aggregated	GAS	234281.6	7289724	180.2543983	**40.44131**	
MONTEREY	2040	LDA	Aggregated	Aggregated	DSL	2875.104	90390.11	1.465688431	**61.67075**	
MONTEREY	2040	LDA	Aggregated	Aggregated	ELEC	14220.34	467024.7	0	**#DIV/0!**	
MONTEREY	2040	LDT1	Aggregated	Aggregated	GAS	24628.39	714328.7	20.84906595	**34.2619**	
MONTEREY	2040	LDT1	Aggregated	Aggregated	DSL	3.116886	94.58065	0.002901077	**32.60191**	
MONTEREY	2040	LDT1	Aggregated	Aggregated	ELEC	830.4374	27078.25	0	**#DIV/0!**	
MONTEREY	2040	LDT2	Aggregated	Aggregated	GAS	80760.43	2362567	68.93112141	**34.27432**	
MONTEREY	2040	LDT2	Aggregated	Aggregated	DSL	803.8782	24122.81	0.52674749	**45.79578**	
MONTEREY	2040	LDT2	Aggregated	Aggregated	ELEC	3264.422	73546.86	0	**#DIV/0!**	
MONTEREY	2040	LHD1	Aggregated	Aggregated	GAS	4516.573	134282.5	13.28163766	**10.11039**	
MONTEREY	2040	LHD1	Aggregated	Aggregated	DSL	4051.181	122173.6	5.478638743	**22.29999**	
MONTEREY	2040	LHD2	Aggregated	Aggregated	GAS	594.4239	18046.04	2.036204643	**8.862588**	
MONTEREY	2040	LHD2	Aggregated	Aggregated	DSL	1691.527	48736.22	2.484944845	**19.61259**	
MONTEREY	2040	MCY	Aggregated	Aggregated	GAS	9988.478	90507.87	2.522548827	**35.87953**	
MONTEREY	2040	MDV	Aggregated	Aggregated	GAS	52287.49	1469579	52.77725817	**27.84493**	
MONTEREY	2040	MDV	Aggregated	Aggregated	DSL	1801.156	52550.78	1.493865401	**35.17772**	
MONTEREY	2040	MDV	Aggregated	Aggregated	ELEC	2300.642	52365.86	0	**#DIV/0!**	
MONTEREY	2040	MH	Aggregated	Aggregated	GAS	601.2419	5477.521	0.916397831	**5.97723**	
MONTEREY	2040	MH	Aggregated	Aggregated	DSL	330.1864	2559.447	0.218990597	**11.68747**	
MONTEREY	2040	Motor Coach	Aggregated	Aggregated	DSL	114.1203	14114.99	1.753727344	**8.048565**	
MONTEREY	2040	OBUS	Aggregated	Aggregated	GAS	130.4443	7494.896	1.274492631	**5.88069**	
MONTEREY	2040	PTO	Aggregated	Aggregated	DSL	0	4606.823	0.748743739	**6.152736**	
MONTEREY	2040	SBUS	Aggregated	Aggregated	GAS	78.66012	5285.249	0.470426697	**11.23501**	
MONTEREY	2040	SBUS	Aggregated	Aggregated	DSL	375.1986	11956.76	1.128744249	**10.59298**	**MHD**
MONTEREY	2040	T6 Ag	Aggregated	Aggregated	DSL	46.43044	95.82096	0.012926902	**7.412523**	**11.3178**
MONTEREY	2040	T6 CAIRP heavy	Aggregated	Aggregated	DSL	42.38583	7055.481	0.474916065	**14.85627**	
MONTEREY	2040	T6 CAIRP small	Aggregated	Aggregated	DSL	21.63019	926.9502	0.069902333	**13.26065**	
MONTEREY	2040	T6 instate constru	Aggregated	Aggregated	DSL	93.77322	6147.009	0.631886871	**9.728022**	
MONTEREY	2040	T6 instate constru	Aggregated	Aggregated	DSL	549.7132	27350.95	2.589899179	**10.56062**	
MONTEREY	2040	T6 instate heavy	Aggregated	Aggregated	DSL	820.5916	78127.64	6.190460241	**12.62065**	
MONTEREY	2040	T6 instate small	Aggregated	Aggregated	DSL	2222.493	99603.69	8.089236119	**12.31311**	
MONTEREY	2040	T6 OOS heavy	Aggregated	Aggregated	DSL	24.96141	4182.883	0.28134986	**14.8672**	
MONTEREY	2040	T6 OOS small	Aggregated	Aggregated	DSL	11.54175	488.6443	0.036932204	**13.23084**	
MONTEREY	2040	T6 Public	Aggregated	Aggregated	DSL	113.3855	1743.877	0.188573303	**9.247739**	
MONTEREY	2040	T6 utility	Aggregated	Aggregated	DSL	81.47047	1358.703	0.116108344	**11.70203**	
MONTEREY	2040	T6TS	Aggregated	Aggregated	GAS	462.3291	34733.43	5.775449682	**6.013979**	**HHD**
MONTEREY	2040	T7 Ag	Aggregated	Aggregated	DSL	22.17793	33.86806	0.009902636	**3.420106**	**7.176958**
MONTEREY	2040	T7 CAIRP	Aggregated	Aggregated	DSL	379.3336	80252.72	8.208001985	**9.777376**	
MONTEREY	2040	T7 CAIRP construc	Aggregated	Aggregated	DSL	24.72452	4415.45	0.564533777	**7.82141**	
MONTEREY	2040	T7 NNOOS	Aggregated	Aggregated	DSL	587.8307	97864.57	10.51378427	**9.308216**	
MONTEREY	2040	T7 NOOS	Aggregated	Aggregated	DSL	150.7186	31528.1	3.300913386	**9.551327**	
MONTEREY	2040	T7 POAK	Aggregated	Aggregated	DSL	54.99952	9517.809	1.10926609	**8.580276**	
MONTEREY	2040	T7 Public	Aggregated	Aggregated	DSL	121.3127	2459.149	0.371102908	**6.626595**	
MONTEREY	2040	T7 Single	Aggregated	Aggregated	DSL	297.6919	23200.88	2.936859757	**7.899894**	
MONTEREY	2040	T7 single construc	Aggregated	Aggregated	DSL	143.8807	10953.92	1.554836407	**7.045063**	
MONTEREY	2040	T7 SWCV	Aggregated	Aggregated	DSL	131.9557	5380.603	1.579938724	**3.405577**	
MONTEREY	2040	T7 SWCV	Aggregated	Aggregated	NG	55.36399	2257.502	0.764187811	**2.95412**	
MONTEREY	2040	T7 tractor	Aggregated	Aggregated	DSL	493.2112	62009.29	5.921198281	**10.47242**	
MONTEREY	2040	T7 tractor constru	Aggregated	Aggregated	DSL	120.5765	9036.02	1.255586144	**7.196654**	
MONTEREY	2040	T7 utility	Aggregated	Aggregated	DSL	19.15301	388.2473	0.04843457	**8.015913**	
MONTEREY	2040	T7IS	Aggregated	Aggregated	GAS	1.753629	321.5152	0.057625239	**5.579417**	
MONTEREY	2040	UBUS	Aggregated	Aggregated	GAS	48.83487	5438.37	0.870284277	**6.248958**	
MONTEREY	2040	UBUS	Aggregated	Aggregated	DSL	51.30128	8573.699	1.208816027	**7.092642**	
MONTEREY	2040	UBUS	Aggregated	Aggregated	NG	89.77724	15003.97	3.619202177	**4.145658**	

APPENDIX B.4

Greenhouse Gas Efficiency Metric Calculation Methodology

Greenhouse Gas Efficiency Metric Calculation Methodology – Salinas Central Area Specific Plan

The methodology used for assessing the proposed project's consistency with GHG targets established in AB 32 is the use of GHG efficiency metrics to assess the GHG efficiency of the project on a "service population (SP)" basis (the sum of the number of jobs and the number of residents provided by a project). These metrics represent the rate of emissions needed to achieve a fair share of the state's emissions mandate embodied in AB 32. The use of "fair share" in this instance indicates the GHG efficiency level that, if applied statewide, would meet the AB 32 emissions target and support efforts to reduce emissions beyond 2020.

GHG efficiency metrics for the project were developed based on emissions rates for the land use-driven emission sectors in the CARB's GHG inventory. The GHG efficiency metric is only based on sectors that would accommodate projected growth (as indicated by population and employment growth) while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). The per service population efficiency target is based on the AB 32 GHG reduction target and GHG emissions inventory prepared for the CARB's 2008 Scoping Plan.

To develop the efficiency metric for 2020, land-use driven sectors in the CARB's 1990 GHG inventory were identified and separated to tailor the inventory to land use projects. This process removes emission sources that would not be applicable to the project area. For example, emissions associated with ships and commercial boats, aviation, rail, industrial sources, agriculture and forestry, and unspecified sectors were removed from the CARB's 1990 inventory in order to exclude non-land use sectors. The exceptions for the industrial sector are the landfill and domestic wastewater sub-sectors which were included in development of the GHG efficiency metric because emissions from these sectors are included in the project's emissions profile. Isolating the land use-driven sectors from the CARB's overall inventory ensures that the threshold is directly applicable to land use projects, whereby emission sectors included in the inventory used for developing the GHG efficiency metric can be mapped to a project's emissions data. For example, emissions associated with on-road transportation, electricity, natural gas, wastewater treatment, and solid waste are included in both the inventory used to develop the GHG efficiency metric and the project's operational emissions. The CARB's complete 1990 inventory and the adjusted land use-driven emissions inventory are shown on the following pages.

The land-use sector driven inventory for 1990 was divided by the population and employment projections for California in 2020. Detailed calculations showing derivation of the efficiency metrics are shown on the following pages. The efficiency metric allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of sources from land-use related sectors. The efficiency approach allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32. The resultant GHG efficiency metric would be (approximately) 4.84 MT CO_2e/SP/year for 2020 (as provided below).

The proposed project is anticipated to be built out in the relative medium-term, within the timeframe of the State's longer-term target years (2030 and 2050). The CARB has indicated that an average statewide

GHG reduction of 5.2 percent per year would be necessary to achieve the 2030 target[1,2]. Therefore, GHG efficiency goals in terms of metric tons per service population, similar to the one developed for 2020, were estimated for Years 2030, 2040, and 2050 to allow evaluation of the project's GHG emissions in the post-2020 landscape. The equivalent goal for 2030 computes to approximately 2.62 MT CO_2e/SP/year. For Year 2040, the goal computes to 1.94 MT CO_2e/SP/year, for Year 2045, 1.07 MT CO_2e/SP/year, and for Year 2050 the goal is 0.80 MT CO_2e/SP/year. These targets were estimated by applying a uniform reduction from the CARB's 1990 emissions inventory and dividing the resultant value by the projected population and employment in these future years.

These GHG efficiency metric were derived based on the reduction trajectory the state needs to maintain to achieve its 2030 and 2050 goals (an approximately 5.2 percent reduction per year) (CARB, 2016b). Therefore, if the project's emissions are determined to be on this trajectory based on compliance with the 2040 GHG emissions per service population goal, it would not be anticipated to interfere with the State's long-term GHG reduction goals.

All calculations are based on the IPCC Second Assessment Report's Global Warming Potentials to allow consistent comparison between the ARB 1990 inventory and the California Emissions Estimator Model (CalEEMod; used to estimate project emissions).

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[1] California Air Resources Board. 2016. California Climate Strategy. January 29, 2016. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN210091_20160129T154626_California_Climate_Strategy_CARB_for_RETI_20_Plenary_Meeting_on.pdf

[2] California Air Resources Board. 2015. 2030 Target Scoping Plan Workshop Slides. (October 1, 2015). Available at: http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

California Greenhouse Gas Inventory for 1990 – by Sector and Activity (Land Use-driven sectors only)
Million metric tons of CO_2-equiavlent (CO_2e) – (based on IPCC Second Assessment Report's Global Warming Potentials) (CARB, 2007).

Year 1990

Transportation	
On Road	
Passenger Cars	63.77
Light Duty Trucks	44.75
Motorcycles	0.43
Heavy Duty Trucks	29.03
Freight	0.02
Electricity Generation In-State	
CHP: Commercial	***0.70***
Merchant Owned	***2.33***
Transmission and Distribution	***1.56***
Utility Owned	***29.92***
Electricity Generation In-State	
Specified Imports	***29.61***
Transmission and Distribution	***1.02***
Unspecified Imports	***30.96***
Commercial	
CHP: Commercial	***0.40***
Communication	***0.07***
Domestic Utilities	***0.34***
Education	***1.42***
Food Services	***1.89***
Healthcare	***1.32***
Hotels	***0.67***
Not Specified Commercial	***5.58***
Offices	***1.46***
Retail & Wholesale	***0.68***
Transportation Services	***0.03***
Residential	
Household Use	***29.66***
Industrial	
Landfills	***6.26***
Wastewater Treatment	
Domestic Wastewater	2.83
Total Emissions	**286.70**

Future Year Service Population Thresholds

	2020	2030	2035	2040	2050
Population	40,719,999	44,019,846	45,521,334	46,088,425	49,158,401
Employment	18,511,200	20,011,301*	20,693,874*	21,313,702*	22,347,274*
Service Population	59,231,199	64,031,147	66,215,208	68,198,503	71,505,675
Emissions (Million Metric Tons)	286.70	167.67	128.22	98.06	57.35
MT/SP	**4.84**	**2.62**	**1.94**	**1.44**	**0.802**

Notes:

SP = service population.

*Assumes proportion of employed persons to the overall population remains equal to that as was applicable in 2020 (direct 2030, 2035, 2040, 2045, and 2050 employment projections were not available).

2030, 2035, 2040, and 2050 Emissions are based on an annual 5.2% reduction from 2020 (CARB, 2016).

Sources:

California Air Resources Board (CARB). 2007. Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. Public Release Date: November 16, 2007. Available: https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm

California Air Resources Board (CARB). 2015. 2030 Target Scoping Plan Workshop Slides. (October 1, 2015). Available: http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

California Air Resources Board (CARB). 2016. California Climate Strategy. January 29, 2016. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN210091_20160129T154626_California_Climate_Strategy_CARB_for_RETI_20_Plenary_Meeting_on.pdf

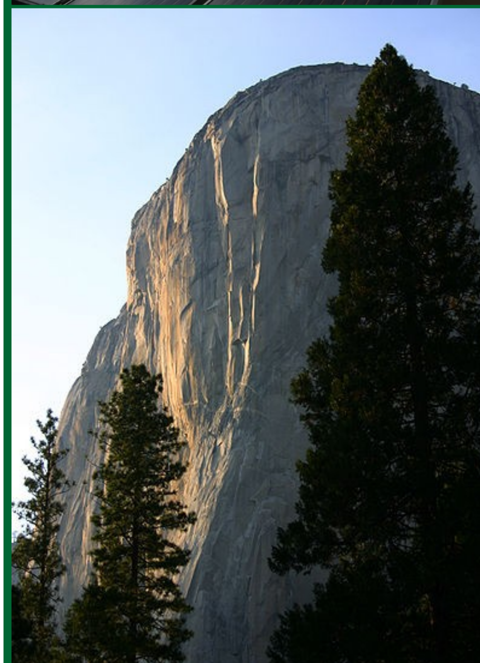
California Department of Finance, Demographics Research Unit (Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 5-year Increments. Published February, 2017.

California Department of Finance Employment Development Department. Industry Employment Projections Labor Market Information Division 2010-2020. Published 5/23/2012.

APPENDIX C – CAPCOA QUANTIFYING GHG MITIGATION MEASURES

CAPCOA

CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION



Quantifying Greenhouse Gas Mitigation Measures

A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures

August, 2010

Quantifying Greenhouse Gas Mitigation Measures

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California Air Pollution Control Officers Association

with

Northeast States for Coordinated Air Use Management

National Association of Clean Air Agencies

Environ

Fehr & Peers

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Disclaimer

The California Air Pollution Control Officers Association (CAPCOA) has prepared this report on quantifying greenhouse gas emissions from select mitigation strategies to provide a common platform of information and tools to support local governments.

This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which a city or county chooses to address greenhouse gas emissions in the context of projects it reviews, or in the preparation of its General Plan.

This paper has been prepared at a time when California law and regulation, as well as accepted practice regarding how climate change should be addressed in government programs, is undergoing change. There is pending litigation that may have bearing on these decisions, as well as active legislation at the federal level. In the face of this uncertainty, local governments are working to understand the new expectations, and how best to meet them. This paper is provided as a resource to local policy and decision makers to enable them to make the best decisions they can during this period of uncertainty.

Finally, in order to provide context for the quantification methodologies it describes, this report reviews requirements, discusses policy options, and highlights methods, tools, and resources available; these reviews and discussions are not intended to provide legal advice and should not be construed as such. Questions of legal interpretation, or requests for legal advice, should be directed to the jurisdiction's counsel.

Table of Contents

Executive Summary

This report on *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* was prepared by the California Air Pollution Control Officers Association with the Northeast States for Coordinated Air Use Management and the National Association of Clean Air Agencies, and with technical support from Environ and Fehr & Peers. It is primarily focused on the quantification of project-level mitigation of greenhouse gas emissions associated with land use, transportation, energy use, and other related project areas. The mitigation measures quantified in the Report generally correspond to measures previously discussed in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. The Report does not provide policy guidance or advocate any policy position related to greenhouse gas emission reduction.

The Report provides a discussion of background information on programs and other circumstances in which quantification of greenhouse gas emissions is important. This includes voluntary emission reduction efforts, project-level emission reduction efforts, reductions for regulatory compliance, and reductions for some form of credit. The information provided covers basic terms and concepts and again, does not endorse or provide guidance on any policy position.

Certain key concepts for quantification are covered in greater depth. These include baseline, business-as-usual, types of emission reductions, project scope, lifecycle analysis, accuracy and reliability, additionality, and verification.

In order to provide transparency and to enhance the understanding of underlying strengths and weaknesses, the Report includes a detailed explanation of the approaches and methods used in developing the quantification of the mitigation measures. There is a summary of baseline methods (which are discussed in greater detail in Appendix B) as well as a discussion of methods for the measures. This includes the selection process for the measures, the development of the quantification approaches, and limitations in the data used to derive the quantification.

The mitigation measures were broken into categories, and an overview is provided for each category. The overview discusses specific considerations in quantifying emissions for measures in the category, as well as project-specific data the user will need to provide. Where appropriate and where data are readily available, the user is directed to relevant data sources. In addition, some tables and other information are included in the appendices.

The mitigation measures are presented in Fact Sheets. An overview of the Fact Sheets is provided which outlines their organization and describes the layout of information. The Report also includes a step-by-step guide to using a Fact Sheet to quantify a project, and discusses the use of Fact Sheets outside of California. The Report also discusses the grouping of the measures, and outlines procedures and limitations for quantifying projects where measures are combined either within or across categories. These limitations are critical to ensure that emission reductions are appropriately quantified and are not double counted. As a general guide, approximate ranges of effectiveness are provided for each of the measures, and this is presented in tables at the end of Chapter 6. These ranges are for reference only and should not be used in lieu of the actual Fact Sheets; they do not provide accurate quantification on a project-specific basis.

The Fact Sheets themselves are presented in Chapter 7, which includes an index of the Fact Sheets and cross references each measure to measures described in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. Each Fact Sheet includes a description of the measure, assumptions and limitations in the quantification, a baseline methodology, and the quantification of the measure itself. There is also a sample project calculation, and a discussion of the data and studies used in the development of the quantification.

In the Appendices, there is a glossary of terms. The baseline methodology is fully explained, and there is additional supporting information for the transportation methods and the non-transportation methods. Finally, the Report includes select reference tables that the user may consult for select project-specific factors that are called for in some of the Fact Sheets.

Background

The California Air Pollution Control Officers Association (CAPCOA) prepared the report, *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (Quantification Report, or Report), in collaboration with the Northeast States for Coordinated Air Use Management (NESCAUM) and the National Association of Clean Air Agencies (NACAA), and with contract support from Environ, and Fehr & Peers, who performed the technical analysis. The Report provides methods for quantifying emission reductions from a specified list of mitigation measures, primarily focused on project-level mitigation. The emissions calculations include greenhouse gases (GHGs), particulate matter (PM), carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO2), and reactive organic gases (ROG), as well as toxic air pollutants, where information is available.

The measures included in this Report were selected because they are frequently considered as mitigation for GHG impacts, and standardized methods for quantifying emissions from these projects were not previously available. Measures were screened on the basis of the feasibility of quantifying the emissions, the availability of robust and meaningful data upon which to base the quantification, and whether the measures (alone or in combination with other measures) would result in appreciable reductions in GHG emissions. CAPCOA does not mean to suggest that other measures should not be considered, or that they might not be effective or quantifiable; on the contrary, there are many options and approaches to mitigate emissions of GHGs. CAPCOA sought to provide a high quality quantification tool to local governments with the broadest applicability possible, given the resource limitations for the project. CAPCOA encourages local governments to be bold and creative as they approach the challenge of climate change, and does not intend this Report to limit the scope of measures considered for mitigation.

The majority of the measures in the Report have been discussed in CAPCOA's previous resource documents: *CEQA and Climate Change*, and *Model Policies for Greenhouse Gases in General Plans*. The measures in this Report are cross-referenced to those prior reports. The quantification methods provided here are largely project-level in nature; they can certainly inform planning decisions, however a complete planning-level analysis of mitigation strategies will entail additional quantification.

In developing the quantification methods, CAPCOA and its contractors conducted an extensive literature review. The goal of the Report was to provide accurate and reliable quantification methods that can be used throughout California and adapted for use outside of the state as well.

Intent and Audience

This document is intended to further support the efforts of local governments to address the impacts of GHG emissions in their environmental review of projects and in their planning efforts. Project proponents and others interested in quantifying mitigation measures will also find the document useful.

The guidance provided in this Report specifically addresses appropriate procedures for applying quantification methods to achieve accurate and reliable results. The Report includes background information on programs and concepts associated with the quantification of GHG emissions. The Report does not provide policy guidance on any of these issues, nor does it dictate how any jurisdiction should address questions of policy. Policy considerations are left to individual agencies and their governing boards. Rather, this Report is intended to support the creation of a standardized approach to quantifying mitigation measures, to allow emission reductions and measure effectiveness to be considered and compared on a common basis.

Because the quantification methods in this Report were developed to meet the highest standards for accuracy and reliability, CAPCOA believes they will be generally accepted for most quantification purposes. The decision to accept any quantification method rests with the reviewing agency, however. Further, while the Report discusses the quantification of GHG emissions for a variety of purposes, including the quantification of reductions for credit, using these methods does not guarantee that credit will be awarded.

Using the Document

Chapters 2 and 3 of this Report discuss programs and concepts associated with GHG quantification. They are intended to provide background information for those interested in the context in which reductions are being made. Chapter 4 discusses the underpinnings of the quantification methods and specifically addresses limitations in the data used as well as limitations in applying the methods; it is important for anyone using this Report to review Chapter 4. Chapter 5 provides an overview of the mitigation measure categories, including key considerations in the quantification of emission reductions in those categories. Chapter 6 explains how to use the fact sheets for each measure's quantification method, and also discusses the effectiveness of the measures and how combining measures changes the effectiveness.

Once the user understands the quantification context, and the limitations of the methods, the fact sheets can be used like recipes in a cookbook . In using the fact sheets, however, CAPCOA strongly advises the reader to pay careful attention to the assumptions and limitations set forth for each individual measure, and to make sure that these are respected and appropriately considered.

The fact sheets with the actual quantification methods for each individual measure are contained in Chapter 7. The baseline methods are explained in Appendix B. It is the responsibility of the user to ensure that all data inputs are provided as called for in the methods, and that the data are of appropriate quality.

CAPCOA will not be able to provide case-by-case review or adjustments for specific projects outside of the provision for project-specific data inputs that is part of each fact sheet. Questions about individual projects may be referred to your local air district.

As a final note, the methods contained in this document include generalized information about the measures themselves. This information includes emission factors, usage rates, and other data from various sources, most commonly published data from public agencies. The data were carefully reviewed to ensure they represent the best information available for this purpose. The use of generalized information allows the quantification methods to be used across a range of circumstances, including variations in geographical location, climate, and population density, among others.

Where good quality, project-specific data is available that provides a superior characterization of a particular project, it should be used instead of the more generalized data presented here. The methods provided for baseline and mitigated emissions scenarios allow for such substitution. The local agency reviewing the project should review the project-specific data, however, to ensure that it meets standards for data quality and will not result in an inappropriate under- or overestimation of project emissions or mitigation.

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Quantification Framework

The Quantification Report has been prepared to support a range of quantification needs. It is based on the premise that quantification of GHG emissions and reductions should rest on a foundation of clear assumptions, limits, and calculations. When these elements and the methods of applying them are transparent, a common "language" is created that allows us to talk about, compare, and evaluate GHGs with confidence that we are looking at "apples to apples."

For the purpose of this report, GHGs are the six gases identified in the Kyoto Protocol: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). GHGs are expressed in metric tons (MT) of CO_2e (carbon dioxide equivalents). Individual GHGs are converted to CO_2e by multiplying values by their global warming potential (GWP). Global warming potentials represent a ratio of a gas' heat trapping characteristics compared to CO_2, which has a global warming potential of 1.

As a general rule, the quantification methods in this report are only accurate to the degree that the project adheres to the assumptions, limitations, and other criteria specified for a given measure. Where specific data inputs are indicated for either the baseline or the project scenario calculations, those data must be provided for the calculations to be valid. Further, the quality of the data used will substantially impact the quality of the results achieved. For example, if a calculation method calls for a traffic count, the calculations can't be made without supplying a traffic count number. However, the number used could be a rough estimate, could be based on a small, one-time sample, or could be derived through a full traffic study over a representative period of time or times. Clearly, using a rough estimate for any of the data inputs will yield results that are less accurate than they would be if higher quality data inputs were provided.

This does not mean that rough estimates cannot be used. There will be times when the quantification does not need to be precise. In order to speak the common language, however, it is important to identify how precise your data inputs are. It is also important to give careful consideration to the intended use of the quantification, to make sure that the results you achieve will be sufficiently rigorous to support the conclusions you draw from them.

The quantification methods in this report rely on very specific assumptions and limitations for each mitigation measure. Unlike the discussion of data inputs, the measure assumptions and limits affect more than the precision of the calculations: they determine whether the calculation is valid at all. For example, there is a method for calculating GHG reductions for each percentage in improvement in building energy use beyond the performance standards in California's Title 24; that method states that the measure is specifically for electricity and natural gas use in residential and commercial buildings subject to Title 24. If the building is located outside of California, where Title 24 is not applicable, the method will not yield accurate results unless the baseline assumptions are adjusted to reflect the standards that actually apply. Further, the measure effectiveness is based on assumptions that certain other energy efficiency measures are also applied (such as third-party HVAC-commissioning); if those additional measures are not applied, the calculated reductions will not be accurate and will overestimate the reductions compared to what will actually be achieved.

There may be situations where you choose to apply a method even if the assumptions do not match the specific conditions of the project; while CAPCOA does not recommend this, if you do it, it is imperative that any deviations are clearly identified. While you may still be able to calculate a reduction for your measure, in many cases the error in your result will be so large that any conclusions you would draw from the analysis could be completely wrong.

Quantifying Measures for Different Purposes

There are several reasons that a person might implement measures to reduce GHG emissions. Some measures are implemented simply because it's a good thing to do. Knowing how many metric tons of GHG emissions were reduced might not be important in that case. There are other reasons for undertaking a project to reduce GHGs, however, and for some of these purposes quantification (and verification) become increasingly important, and sensitive. This chapter discusses the role of quantification, and to a lesser extent verification, in reductions undertaken for a range of reasons. These include: voluntary reductions, reductions undertaken specifically to mitigate current or future impacts, reductions for regulatory compliance, and reductions where some form of credit is being sought, including credits that may be traded on a credit exchange. The purpose for which reductions are quantified will determine the level of detail involved in the quantification, as well as the degree of verification needed to support the quantification. As stated previously, this discussion is provided for information purposes only; it should not be construed to advocate or endorse any particular policy position.

Voluntary Reductions

Voluntary reductions of GHG emissions are reductions that are not required for any reason, including a regulation, law, or other form of standard. Even when reductions are not mandatory, however, there may be reasons to quantify them. The project proponent may simply want to know how effective the project is. Examples of this would be when a project is undertaken in an educational setting, or to demonstrate the general feasibility of a concept, or promote an image of environmental responsibility. In such a case, the focus may be on implementing the project more than documenting exactly how many tons of CO_2e have been reduced, and a reasonable estimate might be sufficient. The project proponent may wish to track reductions to fulfill an organizational policy or commitment, or to establish a track record in GHG reductions. For these purposes, the quantification does not need to be precise, but it should still be based on sound principles and accepted methods.

When reductions are purely voluntary, they may be estimated using the methods contained in this document, even if all of the variables are not known, or if some of the assumptions are not fully supported by the specifics of the project. If the quantification is performed without the level of detail outlined in the method for a given measure (or specified for the baseline calculations), the results will be less accurate. The same is true if a method is used in a situation where the assumptions are not fully supported, or if the method is used outside the noted limitations. As one would expect, the greater the degree of variation from the conditions put forth in the fact sheets, the less accurate the quantification will be. Significant deviation can result in very large errors.

If there is any possibility that the project proponent may at some point wish to use the reductions to fulfill a future regulatory or mitigation requirement, or seek some form of credit for the reductions, the proponent should not deviate from the methods and should ensure that all necessary data are included, and all assumptions and limitations are appropriately addressed. Acceptance of the quantification methods in this Report to fulfill any requirement is solely at the discretion of the approving agency. Use of these methods does not guarantee that credit of any kind will be awarded for reductions made.

Reductions to Mitigate Current or Future Impacts

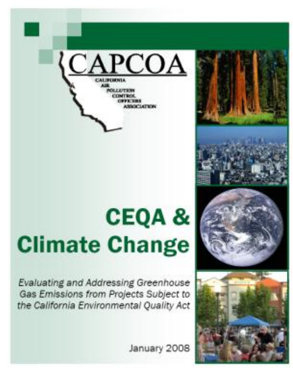
One of the most common reasons for quantifying emissions of GHG is to analyze and mitigate current or future impacts of specific actions or activities. This can include project-level impacts, such as those evaluated under the California Environmental Quality Act (CEQA), or plan-level impacts, such those resulting from the implementation of a General Plan or Climate Action Plan. Quantification of projects and mitigation under CEQA was the main focus in preparing this guidance document. Most of the measures quantified in the Report are project-level in nature. Many of these are also good examples of the kinds of policies and actions that would be included in a General Plan or a Climate Action Plan. The quantification methods provided here can be used to support conclusions about the effectiveness of different measures in a planning context; however, a full analysis of plan-level impacts will require consideration of additional factors, depending on the nature of the measure. Some of the measures have been specifically identified as General Plan measures, and a discussion is included about appropriate analysis of these measures, where study data exist to support such analysis.

Project-Level Mitigation: Existing environmental law and policy requires that environmental impacts of projects be evaluated and disclosed to the public, and where those impacts are potentially significant, that they be mitigated. At the federal level, the National Environmental Protection Act (NEPA) governs this evaluation. Many states have their own programs as well; in California, the California Environmental Quality Act, or CEQA, sets forth the requirements and the framework for the review.

The responsibility to evaluate impacts, to determine significance, and to define appropriate mitigation rests with the Lead Agency. This is typically a city or county with land-use decision-making authority, although other agencies can be Lead Agencies, depending on the nature of the project and the jurisdiction of the agency.

<u>Guidance on CEQA and Climate Change</u>: There are currently two resources for Lead Agencies on incorporating considerations of climate change into their CEQA processes. The first was prepared by CAPCOA, and the most recent is an amendment to the official CEQA Guidelines prepared by the California Natural Resources Agency (Resources Agency).

<u>CAPCOA Guidance</u>- In January of 2008, CAPCOA released a resource document, *"CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act,"* that discussed different approaches to determining whether GHG emissions from projects are significant under CEQA. It reviewed the models and other tools available at that time for conducting GHG analyses, and the document also contained a list of mitigation measures. A copy of the report is available at *http://www.capcoa.org*.



<u>Resources Agency Guidance</u>- Since the release of that report, the California Natural Resources Agency (Resources Agency) finalized its guidance on GHG emissions and CEQA in December of 2009. Under Senate Bill 97 (Chapter 148, Statutes of 2007), the Governor's Office of Planning and Research (OPR) was required to prepare amendments to the state's CEQA Guidelines addressing analysis and mitigation of the potential effects of GHG emissions in CEQA documents. The legislation required the Resources Agency to adopt the amended Guidelines by 2010.

The CEQA Guidelines Amendments adopted by the Resources Agency made material changes to 14 sections of the Guidelines. The changes include dealing with the determination of significance (principally in Public Resource Code Section 15064) and cumulative impacts, as well as areas such as the consultation process for the draft EIR, the statement of overriding considerations, the environmental setting, mitigation measures, and tiering and streamlining. Overall, the discussion of determining significance in

these amendments is consistent with the earlier report released by CAPCOA.

In the Final Statement of Reasons (SOR) for the adoption of the amendments to the CEQA Guidelines, the Resources Agency makes two points that are important with regard to quantification of GHG emissions from projects. First, it states that the Guidelines “appropriately focus on a project’s potential incremental contribution of GHGs” and that the amendments “expressly incorporate the fair argument standard.” [1] This sets the parameters for the analysis to be performed. The Resources Agency further states that the analysis for GHGs must be consistent with existing CEQA principles, which includes standards for the substantial evidence needed to support findings.

Second, the Final SOR specifically states that the amendments “interpret and make specific statutory CEQA provisions and case law … determining the significance of GHG emissions that may result from proposed projects.”[2] In this context, they cite specific case law as well as CEQA Guidelines Section 15144 that require a lead agency to “meaningfully attempt to quantify the Project’s potential impacts on GHG emissions and determine their significance.”[3]

Complete copies of the 2009 CEQA Guidelines Amendments and the Final Statement of Reasons may be downloaded at: *http://ceres.ca.gov/ceqa/docs/*.

Quantification of Projects: Project level quantification, especially as it pertains to CEQA, was CAPCOA’s main focus in developing this Report. The baseline conditions and quantification methods were selected to be consistent with the implementation of AB 32, as well as the Scoping Plan developed by ARB. The list of mitigation measures selected for the Report reflects the types of strategies that local governments and project proponents have shown interest in, and sought direction on quantifying. For the most part, they entail clearly delineated boundary conditions, and have been designed to be applicable across a range of circumstances.

This Quantification Report does not provide any policy guidance on what amount of GHG emissions would be significant. The determination of significance, including any thresholds, is the exclusive purview of the Lead Agency and its policy board. CAPCOA’s Quantification Report provides methods to quantify emissions from specific types of mitigation projects or measures. It is based on a careful review of existing studies and determinations to develop rigorous quantification methods that meet the substantial evidence requirements of CEQA.

A project proponent or reviewer who wishes to use these methods to quantify emissions for the purpose of complying with CEQA must adhere to the assumptions and limitations

[1] California Natural Resources Agency: “Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing and Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97,” December, 2009; p 12.
[2] Ibid: p. 18.
[3] Ibid: p. 18.

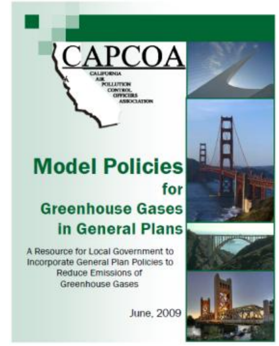
specified in the methods for each project type. If these assumptions and limitations are not followed, the quantification will not be valid. Ultimately, the Lead Agency will have the responsibility to review and decide whether to allow any requests for deviations from the method, and to determine whether those deviations have a substantive impact on the results. Lead Agencies may contact their local air district for assistance in making such a review, but CAPCOA will not be in a position to provide any case-by-case review of changes to the quantification methods in this report.

As stated previously, where good quality, project-specific data are available, they should be substituted for the more generalized data used in the baseline and mitigation emissions calculations. The quality of the data inputs can significantly affect the accuracy and reliability of the results. When quantification is performed for CEQA compliance, CAPCOA recommends that project-specific data be as robust as possible. We discourage the use of approximations or unsubstantiated numbers. In any case, CAPCOA strongly recommends that the source(s) and/or basis of all project-specific data supplied by the project proponent be clearly identified in the analysis, and the limitations of the data be discussed.

Plan-Level Mitigation: Cities and counties, as well as other entities, develop environmental planning documents. The most common are General Plans, which specify the blueprint for land-use, transportation, housing, growth, and resource management for cities, counties, and regions. These plans are periodically updated, and in recent updates, the California Attorney General has put jurisdictions on notice that their plans must consider climate change.

A stand-alone plan that considers climate change is a Climate Action Plan. Climate Action Plans can be developed for a school or company, for a city, county, region, or larger jurisdiction. A Climate Action Plan will typically identify a reduction target or commitment, and then set forth the complement of goals, policies, measures, and ordinances that will achieve the target. These policies and other strategies will typically include measures in transportation, land use, energy conservation, water conservation, and other elements.

<u>Guidance on Planning and Climate Change</u>: CAPCOA prepared a guidance document on GHGs and General Plans for local governments. There are also several important processes under way that will have a significant impact on the planning process in the coming years. These include the early implementation of Senate Bill 375 (Steinberg, Statutes of 2008); the development of new General Plan Guidelines; and statewide planning for adaptation to the impacts of climate change. They are described below.

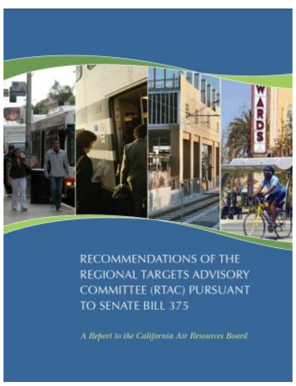


<u>*CAPCOA Guidance for General Plans*</u>- In June of 2009, CAPCOA released "*Model Policies for Greenhouse Gases in General Plans: A Resource for Local Government to Incorporate General Plan Policies to Reduce Emissions of Greenhouse Gases*." This document embodied a menu of GHG mitigation measures that could

be included in a General Plan or a Climate Action Plan. It was structured around the elements of a General Plan, provided model language that could be taken and dropped into a plan, and also provided a worksheet for evaluating which measures to use. The CAPCOA Model Policies document focused on strategies to reduce GHG emissions; it did not address climate change adaptation, which is an important, but separate consideration.

Senate Bill 375- Senate Bill 375 is considered a landmark piece of legislation that aligns regional land use, transportation, housing, and greenhouse gas reduction planning efforts. The bill requires the ARB to set greenhouse gas emission reduction targets for light trucks and passenger vehicles for 2020 and 2035. The 18 Metropolitan Planning Organizations (MPOs) are responsible for preparing Sustainable Communities Strategies and, if needed, Alternative Planning Strategies (APS), that will include a region's respective strategy for meeting the established targets. An APS is an alternative strategy that must show how the region would, if implemented, meet the target if the SCS does not.

To develop the targets, SB 375 called for a Regional Targets Advisory Committee (RTAC), which included representatives from the MPOs, cities and counties, air districts, elected officials, the business community, nongovernmental organizations, and experts in land use and transportation. The RTAC provided recommendations on the targets to ARB in a formal report in September, 2009. The report covers a range of important considerations in target setting and implementation. Target setting topics include: the use of empirical data and modeling; key underlying assumptions; best management practices; the base year, the metric, targets for 2020 and 2035; and both statewide and regional factors affecting transportation patterns. For implementation, the report considers housing and social equity issues; local government challenges in meeting the targets; funding and other support at the state and federal level; and a variety of other important considerations. A complete copy of the report may be downloaded at: *http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf*.



ARB staff released draft regional targets for 2020 for the four largest MPOs in June, 2010, along with placeholder targets for 2035. Placeholder targets were also issued for both 2020 and 2035 for MPOs in the San Joaquin Valley. An alternative approach to target setting was proposed for the remaining MPOs. As required by SB 375, ARB expects to formally adopt the final targets before the end of September, 2010. Additional information about the target setting process can be found at: *http://www.arb.ca.gov/cc/sb375/sb375.htm*.

For the four largest MPOs, the draft 2020 targets are expressed as a percent reduction in emissions based on the potential reductions from land use and transportation planning scenarios provided by the MPOs, with a proposed range for the targets between 5% and 10%[4]. This reduction excludes the expected emission reductions from Pavley GHG vehicle standards and low carbon fuel standard measures. Each of the four regions has its own placeholder targets for 2035, shown in Table 2-1, below.

Table 2-1: Draft Regional Targets for 2035

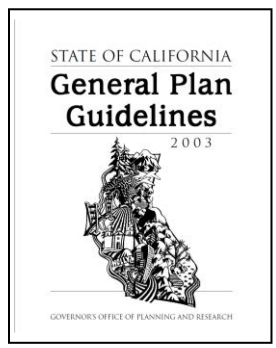
Regional MPO	Draft GHG Reduction Target
Metropolitan Planning Commission (MTC)	3-12%
Sacramento Area Council of Governments (SACOG)	13-17%
San Diego Association of Governments (SANDAG)	5-19%
Southern California Association of Governments (SCAG)	3-12%

Source: ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375" page 4.

The placeholder targets for the MPOs in the San Joaquin Valley range from 1-7% for both 2020 and 2035. Placeholder targets were provided in lieu of draft targets to allow the MPOs to provide additional information for ARB to consider before finalizing the targets. For the remaining six MPOs, ARB proposes to use the most current per-capita GHG emissions data, adjusted for the impacts of the recession, as the basis for setting individual regional targets in those areas.

In addition to serving on the RTAC, local districts will support the MPOs as they develop their strategies to meet their regional targets, and local cities and counties as they incorporate sustainable strategies into their own planning efforts. Two of the contractors who developed the quantification methods in this Quantification Report also served on the RTAC, and every effort has been made to ensure that work here will ultimately be compatible with, and useful in, the implementation of SB 375.

General Plan Guidelines- The Governor's Office of Planning and Research (OPR) provides technical assistance on land use planning and CEQA matters to local governments. In this effort, OPR is required to adopt and periodically revise advisory guidelines to assist local governments in the preparation of local general plans. Commonly referred to as the General Plan Guidelines, the most current edition was released in 2003.



In the 2003 edition, OPR included an overview of the General Plan statutory requirements, a review of CEQA's role in the general plan process, implementation techniques, and the General Plan's relationship to other statutory planning requirements. The 2003 Guidelines do not specifically address GHG emissions or climate change.

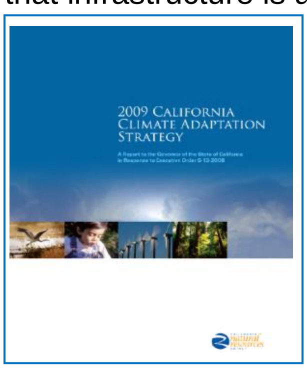
[4] ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375," June, 2010; page 4.

It is important to note that the General Plan Guidelines are advisory, not mandatory. Nevertheless, it is the state's only official document explaining California's legal requirements for general plans. The General Plan Guidelines are continually shaped to reflect current trends, changes in applicable laws, and incorporate additional statutory requirements. This includes anticipated effects from AB 32 and SB 375.

An update to the 2003 General Plan Guidelines has been in development and includes a Climate Change Supplement. This update is expected to be finalized by the end of 2010.

<u>*Adaptation*</u>- Adaptation has not received the same attention that has been given to steps that might prevent or mitigate the extent of climate change, however it is a topic that should not be ignored in General Plans. The overwhelming body of scientific studies point to a certain amount of change in our climate that is inevitable, even if we are aggressive and diligent in our efforts to prevent it. Many regions of the state (indeed, the nation) are projected to see substantial impacts on agriculture, climate dependant business (such as recreation and tourism), infrastructure, and habitat. Coastal areas will see a rise in sea level, currently projected to be between one and three meters by 2100. Wild fires are expected to increase in number, size, and severity. Stresses on the environment, combined with extreme weather events, are projected to increase the incidence and severity of a number of infectious diseases and other medical conditions. These and myriad other changes pose tremendous risks to people and our way of life.

For that reason, in December, 2009, a team of California state agencies released a report: "The 2009 Climate Adaptation Strategy." In it, the team states that 2.5 trillion dollars' worth of infrastructure in California is at risk from the various projected climate-related changes in our environment. The estimated cost of addressing the impacts on that infrastructure is about $3.9 billion, annually.[5] The report identifies a number of steps to be taken in the near term to appropriately plan for and address this threat. Highlights of the actions include: the formation of a Climate Adaptation Advisory Panel; new approaches to water management; revised land-use planning to avoid construction in highly vulnerable areas; evaluation of all state infrastructure projects to avoid exacerbating threats to infrastructure; and, more specific planning by emergency response agencies, public health agencies, and others to fortify existing communities and resources, and prepare for future stressors. For more information, the full report may be downloaded at: *http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF*.



<u>Quantification for Planning Purposes</u>: Quantification of the impacts of measures for planning purposes is a different exercise than quantification for a specific project. By its

[5] California Natural Resources Agency: "2009 Climate Adaptation Strategy" Dec. 2009; p. 5.

very nature, planning involves a future set of conditions about which less is known, and indeed knowable. The art and science of planning depend upon the interpretation of present conditions and trends, and the application of that interpretation to create a picture of future conditions. This document does not address detailed planning analysis in a comprehensive manner.

The majority of the measures described and quantified here are project-level measures; only a few are plan-level measures by design. That said, many of the project level measures are good examples of the implementation of planning-level policies that were described in the CAPCOA Model Policies report. The quantification of these measures will provide important and useful information for the planner to use in the context of quantifying anticipated effects in broader planning efforts.

In a planning context, it is especially important to be mindful of the interactions of different measures. A more detailed explanation is provided in Chapter 6, but the main concern is that certain measures do interact with each other, and their effects are not independent. This means that some measures will have little effect on their own, but in combination with other measures may have significant effect. The classic example of this is the bus shelter. A clean, well-lit, and comfortable bus shelter can enhance ridership on the buses stopping at that shelter and therefore reduce vehicle trips; but without the underlying bus service, the shelter itself does not reduce vehicle trips.

There are also instances where a measure is less effective in combination with other measures than it might be by itself. There are several reasons why this can occur. In some cases this happens because of a diminishing return for consecutive efforts. For example, there may be six good methods to increase ridership on a public transit line, any one of which might increase transit ridership by 20%. But implementing all of them will not necessarily increase ridership by 120%. In fact, for each successive method applied, it is likely that a lesser effect will be observed. Another example is where the measures are in some sense competing, as in a campaign to increase ridership on a commuter rail line at the same time that a new public transit bus line is established with overlapping service areas. Although the ridership campaign might be expected to cause 5% of drivers to switch to rail, some of those potential new riders might use the new bus service instead, making the ridership campaign less effective. At the same time, the new bus line might also be expected to reduce vehicle trips by 5%, but the actual reduction may be lower in reality if some of the ridership comes from those who would have been rail passengers and not from driving. Together, the ridership campaign for the rail line and the new bus line may only reduce vehicle trips by 7%, not the 10% predicted from the estimates of their independent effectiveness.[6]

These effects become more pronounced when considered in a city-wide, county-wide, or regional context. The interplay of land use decisions and transportation infrastructure development will be better assessed with more integrated computer modeling efforts. The quantification of some of the strategies at the individual, project level will provide

[6] Please note that the effectiveness estimates provided here are only for the purposes of illustration and should not be taken as actual quantification of such measures.

insight into how useful and appropriate the strategies will be in the planning effort, however. More detailed discussion of how to quantify combinations of measures is provided in Chapter 6.

Reductions for Regulatory Compliance

There are three basic types of regulations for which emissions quantification is likely to be required: command-and-control regulations, permitting, and participation in a cap-and-trade program. A discussion of each is provided for information purposes, as is a discussion of quantification for mandatory emissions reporting regulations. The quantification methods in this document are intended primarily for use in project-level mitigation. Regulatory programs are likely to have specific requirements for monitoring, reporting, and quantification, which may or may not allow the use of the methods in this Report.

Command and Control Regulations: Some local air districts have command-and-control regulations for GHGs already on the books. These include limitations on the use of certain chemicals that are active in the atmosphere, performance requirements for landfill gas collection, and for systems that use GHGs with high Global Warming Potential, as well as efficiency standards for specific equipment or processes. Under the umbrella of the Scoping Plan, the ARB is also developing command-and-control regulations for a number of source categories. Regulations already adopted include standards for various GHGs that have a high global warming potential, such as sulfur hexafluoride (SF_6) used in the electricity sector, semiconductors, and other operations; perfluorocarbons in semiconductor manufacturing; certain refrigerants; and materials used in consumer products. There are also GHG emission limits on light-duty vehicles, rules for port drayage trucks and other heavy-duty vehicles, as well as landfill methane control requirements, and the Low Carbon Fuel Standard. Additional rulemaking is currently underway.

For these types of regulations, compliance may not rest upon quantification of emissions or emissions reductions. In many cases, installation of a specific technology, substitution of materials, or implementation of inspection and maintenance programs meets the requirements of the rule, and is presumed to have a certain effectiveness in reducing emissions from a baseline level. When a focused regulation does require quantification of emissions, it will generally specify a method for testing emissions, where appropriate, or for calculating emissions from other measured parameters.

A related, but more flexible type of regulation for emission reductions is an overall emissions cap for facilities or operations. Under this approach, sometimes referred to as a “bubble,” the regulation calls for an overall reduction in emissions from a specified baseline, but the operator has the discretion to decide how to achieve those reductions. This is different from a cap-and-trade program (see below), in that there is no trading between facilities, or purchasing of credits to offset obligations. Because energy efficiency and other conservation projects are a likely strategy to meet a facility-wide GHG emission reduction requirement, the quantification of measures in this Report may be useful for compliance with such a cap. Of course, the caveats about assumptions and data inputs are also important here. Further, demonstration of compliance with this kind of limit will also involve verification of the emissions reductions, and is likely to include ongoing compliance tracking.

The regional targets of SB 375 are a type of emissions cap. It is important to note that the quantification presented in this Report may ultimately be useful in demonstrating reductions towards those targets. Although much of the work of implementing SB 375 will involve extensive land use and transportation modeling, the project level quantification in this Report may allow cities and counties to track their contribution towards their region's goal.

Permitting Programs: In addition to land-use permitting (discussed under "Project-level Mitigation" above), there may be requirements for operations to have permits to emit GHGs because GHGs are air pollutants. Federal air permitting requirements for stationary sources will become effective on January 1, 2011 (and will apply to applications that have not been acted upon prior to that date), under several federal permit programs, including Prevention of Significant Deterioration (PSD) and Title V. These programs are implemented by the local air districts. Applicability of these programs is based on annual potential to emit GHGs, with thresholds initially set between 75,000 and 100,000 tons per year, depending on the program, and decreasing over time, with final thresholds for smaller sources of GHG to be determined by a future federal rulemaking.

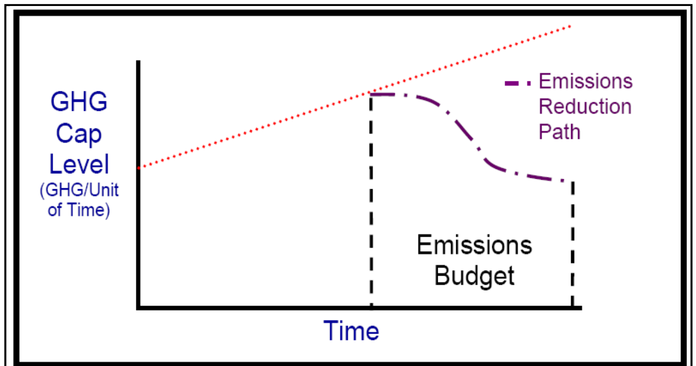
Because these permit programs are threshold-driven, quantification of emissions is an important element of compliance. At present, there is no specific federal guidance on quantifying GHG emissions pursuant to these programs, other than general guidelines for quantifying emissions of other regulated pollutants. This Quantification Report does not specifically address stationary source emissions, however some of the methods may be useful for certain elements of these programs, such as energy efficiency, water efficiency, and other associated measures of carbon use by a facility. The local air district with jurisdiction will be able to provide guidance on calculating emissions for a specific project, both for applicability and for compliance.

In addition, most permits require some form of verification, and ongoing demonstration on compliance. These obligations will be established as part of the permit.

Cap-and-Trade: A cap-and-trade program is a specific type of emissions trading program. Emissions trading in general is discussed in the next section. A brief explanation of cap-and-trade programs is provided below as background information for interested readers. It is not necessary to understand cap and trade programs, or emissions trading in general, in order to use the quantification methods in this report.

Further, these quantification methods were not developed specifically for the purposes of complying with cap and trade requirements, or for emissions trading more generally.

A cap-and-trade regulation establishes "allowances" for carbon emissions, expressed as CO_2 equivalents, usually in tons, or metric tons. An emitter of carbon must hold enough allowances to cover the amount of carbon it actually emits. Allowances are obtained on a carbon exchange, or market. In some cases they may be allocated by the government to emitters. There is a "cap" placed on the amount of allowances available in the market, and the cap declines over time. Carbon emitters must either reduce their emissions or purchase allowances from someone else; this is the "trade" part of the program. In this way, the program should cause carbon to be reduced wherever the reduction costs are lowest. The ARB is developing a cap-and-trade program which they currently expect will be considered for Board approval before the end of 2010. Information about the developing ARB program can be obtained from the conceptual drafts released by staff. Legislation is also pending at the federal level that would establish cap-and-trade on a national scale, but the ultimate scope and content of the program is still unknown. The most recent ARB draft proposal may be downloaded at: *http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm*.



From ARB materials for AB 32 Program Design Technical Stakeholder Working Group Meeting, April 25, 2008, Figure 1, page 3

Although compliance with a cap-and-trade program is not likely to be a reason for quantifying GHG reductions today, it is likely to be one in the future. When that time comes, there will be several important considerations in deciding whether to use this Quantification Report in meeting those obligations.

Mandatory Reporting: The ARB currently has a Mandatory Reporting Rule for specified stationary sources with GHG emissions greater than 25,000 metric tons of CO_2e per year. This rule was established pursuant to the requirements of AB 32, and was intended to provide information to support the development of the Scoping Plan and its implementing regulations. At the time the Mandatory Reporting Rule was approved by the ARB Board, staff indicated that the Rule was not intended, nor did it include the level of detail necessary, to implement the cap-and-trade program (which, at that time, was not yet proposed). Applicable quantification protocols will be developed and approved by the ARB Board as part of its cap-and-trade regulation, as will a revised Mandatory Reporting Rule. More information about the ARB's Mandatory Reporting Rule may be obtained at *http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm*.

The U.S. EPA also has a Mandatory Reporting Rule. Under this rule, suppliers of fossil fuels or greenhouse gases that are used in industrial operations, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to EPA. The EPA rule does not currently specify quantification methods, and CAPCOA anticipates that any methods in this Report that would be applicable to affected reporters (e.g., building energy use) would be also be acceptable for use under the rule. Details on this rule can be found in 40 CFR Part 98, which was published in the Federal Register (*www.regulations.gov*) on October 30, 2009 under Docket ID No. EPA-HQ-OAR-2008-0508-2278.

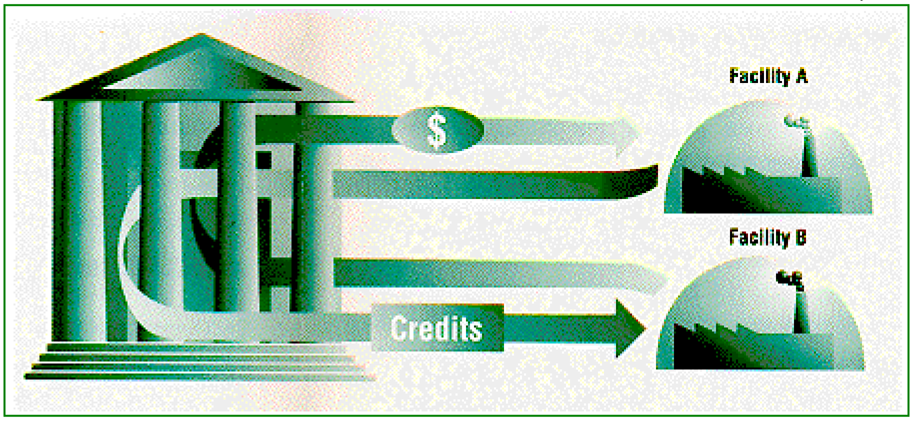
Reductions for Credit

There are several different ways to formally award credit for emission reductions. Emission reduction credits are used when the opportunity, desire, obligation, and the resources to implement reductions are not aligned. Sometimes an entity has the desire and opportunity to reduce emissions, but not the resources. Sometimes an entity is required to make reductions but has no viable project opportunities. Or funds may be available to implement project, but willing participants are needed. Systems are used to match up projects, proponents, funding, and, in some cases, compliance obligations, and the basis of the systems is emission reduction credits.

Concurrent Offsite Mitigation Projects: The simplest form of credit for emission reductions occurs when someone needs to reduce emissions to mitigate impacts (for example, under CEQA), but does not have a good opportunity within his or her own operation or project; but if a good opportunity is available at another operation the person who needs the reductions can fund that project in exchange for being able to take credit for the reduction. A variant of this can occur when a list of emission reduction projects that could be used for mitigation is maintained, and those projects are matched with people who need to implement mitigation. The key in this arrangement is that the project is directly funded by the person who needs mitigation, at whatever the cost the mitigation project ultimately has. The emission reductions occur, but are not traded as an independent commodity. The person who needs the mitigation remains obligated to ensure that the project is implemented and the emission reductions occur.

Mitigation Funds: Instead of matching the person needing mitigation with a project that is then directly funded by that person, it is also possible to collect the funding and then create the projects. In this case, funds are paid into a mitigation fund at a pre-established rate, and the operator of the fund is then obligated to find and implement emission reduction projects. The rate is typically set at a level (for example in dollars per ton needed) that is sufficient to implement an actual project to produce the emission reductions, based on data about actual project costs. As with concurrent offsite mitigation projects, the emission reductions here are not traded as an independent commodity, however a default rate is established. Under a mitigation fund, then, the person needing mitigation is considered to have provided it (that is, given “credit” for the reductions) at the point of paying into the mitigation fund. The obligation to ensure the emission reductions occur is transferred to the fund operator.

Emissions Trading: Emissions trading is a transaction that occurs between entities that make emission reductions which they don't need, and entities that desire emissions reductions but, for whatever reason, do not choose to make them. The emissions (or, more accurately, "credits" for the emission reductions) are treated as a commodity with independent value. The transaction occurs in some form of market, much as transactions occur between the grower of produce and the consumer in a local farmers market. The transaction, or trade, happens when a consumer believes that the product is worth the price being asked for it.



The obligation to ensure the emission reductions occur generally rests with the person selling the credits, and (to the extent an independent review has occurred) with whomever grants certification to the reduction project.

As explained above, a cap-and-trade program is a type of GHG trading market, but there are other types of emissions trading markets. An open GHG credit-based trading market does not have a cap, and participation is on a voluntary basis. In a credit-based market, credits are awarded for emission reductions, and may be purchased and sold as a commodity on an exchange. The credits are sometimes referred to as offsets, and they are generally tracked as tons, or metric tons, of pollutant reduced; in the case of GHGs, this is typically in the form of CO_2e. The important distinction between an open market and a cap-and-trade system is that the creation, buying, and selling of offsets is not restricted in an open market.

The following key terms and concepts are discussed to help the interested reader understand how credits are used in a trading market, It is not necessary to understand trading markets in order to use the quantification methods in this report, and the reader may proceed directly to Chapter 3.

<u>Regulators and Exchanges</u>: Some emissions trading markets are run by the government, while others are operated by independent, non-governmental entities. In government-run markets, such as the Regional Clean Air Incentives Market (RECLAIM) developed and administered by the South Coast Air Quality Management District, and U.S. EPA's Acid Rain program, a government agency establishes and implements the trading market. These markets are typically regulatory in nature, rather than voluntary, although some voluntary participation may be allowed. The Regional Greenhouse Gas Initiative (RGGI) implemented by ten Northeast and Mid-Atlantic states, and the

European Union Emission Trading Scheme (EU ETS) are other examples of regulatory markets.

Independent exchanges, such as the California Climate Action Registry (CCAR) and the Climate Registry (TCR), were established as independent, non-governmental operations. They offer a forum for entities to have emission reductions certified for credit, and for those credits to be bought and sold. These bodies develop their own structure and rules for participation. The nature of those rules determines the quality of the credits available on the exchange. Participation in the exchange is voluntary.

Standards for Credits: In order to be acceptable for credit under the AB 32 program, GHG emission reductions must be real, permanent, quantifiable, verifiable, enforceable, and additional. Historically, the federal Clean Air Act (CAA, or Act) has required emission reduction credits to be: real, permanent, quantifiable, enforceable, and surplus[7]. In this context, surplus means the reductions are not required by any law, regulation, permit condition, or other enforceable mechanism under the Act. California continued this concept in AB 32, requiring that any regulation adopted pursuant to AB 32 ensure that GHG reductions are “real, permanent, quantifiable, verifiable, and enforceable.”[8]

The term “additional” comes from the Clean Development Mechanism in the Kyoto Protocol; it is essentially the same as “surplus” except that it is not restricted to any particular statute, and means that you cannot receive credit for any reductions that you were otherwise obligated to make. AB 32 requires its implementing regulations that include market-based compliance mechanisms to ensure that reductions are “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that might otherwise occur.”[9]

Protocols: Transactions to purchase emission reductions depend on the confidence the purchaser has in the value of reductions being purchased. Price is part of the concept of value that we can easily understand. The other, less tangible part of the concept of value is the quality of the emission reductions themselves. This is harder to understand because, unlike the produce at the farmer’s market, we can’t examine the product to determine its value. Not only are emission reductions invisible, they actually *didn’t happen*. So to have confidence in their value, we need a reliable and accurate picture of what *would have happened*, as well as what *actually happened*.

Protocols are the formalized procedures for accounting for credits that ensure the credits are an accurate and reliable representation of emission reductions that actually occurred. Some protocols focus only on quantification of the reductions, while others also address documentation and verification. They can be developed and adopted by regulatory bodies, by the operators of exchanges, or by subject area experts. Some markets will require participants to use a specific protocol or set of protocols. Others

[7] 40 CFR Sections 51.493 and 51.852
[8] California HS&C: Section 35862(d)(1)
[9] Ibid, Section 35862(d)(2)

will allow participants to propose a protocol for developing and quantifying reductions. Failure to follow required protocols may prevent the project from receiving credit.

Holding and Using Credits: When credits are awarded for emission reduction projects, the owner of the credits is generally given a certificate of value. In this case, "value" means the corresponding emission reductions, not the price, which is determined by the market. The credits are registered with a bank where they are kept until the owner of the credits uses or sells them.

Credit Banks: Emission credit banks are similar to savings banks where money is deposited. The bank tracks credits, credit value, credit price, and transactions. It compiles data and issues reports. Banks are subject to accounting standards and requirements for transparency. It is important to note that not all credits can be banked. Credits or allowances that have a finite life do not retain their value beyond their life term.

Credit Life: Credits may have a specified life (for example, one year), or they may be permanent. The life of the credit may be dictated either by the nature of the reductions that generated it, or by the program in which it is being used. As discussed above, in California, AB 32 requires reductions for regulatory compliance to be permanent. In other markets, such as Kyoto's Clean Development Mechanism, there are both long term and short term credits.

Discounting Credit Value: Some regulatory structures require that credits be discounted, that is, the emission reduction value of the credit (not the price) is reduced to account for certain factors, or to enhance the liquidity of the market. In some cases, a portion of the credit value is surrendered or retired in the interest of environmental policy goals.

Offset Ratios: Offset ratios are a way to ensure an adequate margin of safety when credits are provided to offset impacts. A program may require that the amount of credits provided is greater than the anticipated emissions increases. If the program requires 10% extra credits, then the offset ratio is said to be "1.1 to 1."

The above discussion of emission reduction credits and trading is provided for information only, and should not be construed as endorsement of, or recommendation for, the use of credits or trading for the purposes of meeting GHG reduction obligations. CAPCOA does not make policy recommendations regarding credits or trading in this Report. Decisions about whether to allow the use of credits rests solely with the agency with jurisdiction over a project or program.

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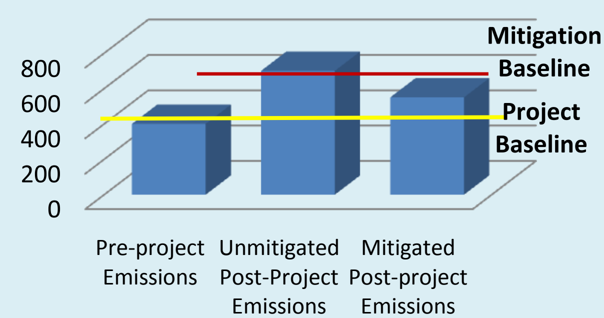
This chapter provides an overview of some key concepts that arise in considering quantification of GHG emission reduction projects. This discussion is provided so the reader understands the context in which these terms are used throughout this document. Here again, this discussion is not intended to endorse any policy position, nor does it provide any recommendations on thresholds of significance for GHG emissions. Policy decisions are left to individual agencies and their governing boards.

Baseline

An emissions baseline is the foundation of any estimate of the impacts of a project or of a mitigation measure. In its simplest form, it reflects the current level of emissions if those emissions do not vary. Usually, however, emissions do vary, typically because the activities or operations that cause the emissions change. Traffic patterns change with the time of day, ski areas are busiest in the winter, air conditioners run more in the summer, people drive less when fuel prices rise, and production of goods changes with the economy. To set a baseline, it is important to understand what factors affect the activity or operation in a way that will alter its emissions; then, the most appropriate scenario is selected and the emissions are adjusted to account for that scenario. Figure 3-1: Baseline illustrates the concept of baselines in project analysis.

Figure 3-1: Baseline



Regulatory programs that require calculation of emissions baselines generally specify the basis for the calculation. For example, a baseline scenario could be a three year average of actual emissions, or the worst case, or, as in CEQA, the program may call for an analysis to identify a representative set of conditions based on historical data.

In its proposed draft regulation for cap-and-trade, ARB defines baseline to mean "the scenario that reflects a conservative estimate of the business-as-usual performance or activities for the relevant type of activity or practice such that the baseline provides an adequate margin of safety to reasonably calculate the amount of GHG reductions in reference to such baseline."[1]

For this Quantification Report, CAPCOA selected a baseline period to correspond to the average GHG emissions from 2002 to 2004, inclusive. This is the emissions baseline period used by ARB in its Scoping Plan[2]. The baseline conditions used to quantify the

[1] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(2), Dec., 2009; page 5.
[2] ARB: "Climate Change Scoping Plan: a framework for change," Dec., 2008; page 11.

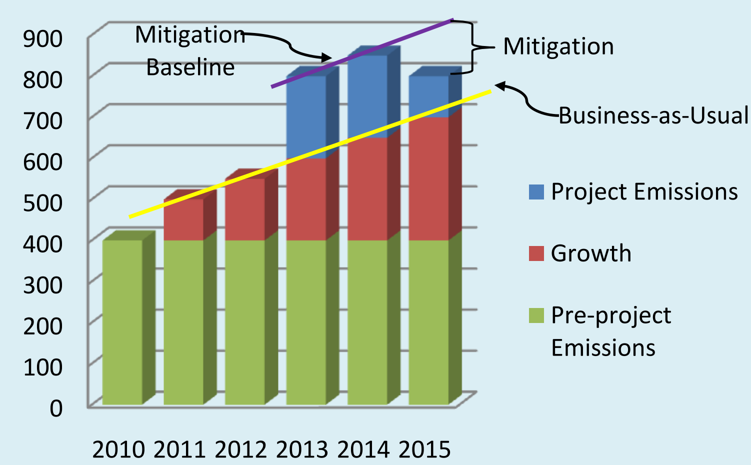
effectiveness of mitigation measures for this Quantification Report reflect the conditions that formed the basis for ARB's 2007 inventory of economic activity and GHG emissions. Those conditions and the associated quantification methods are explained in Appendix B to this Report. A copy of ARB's Scoping Plan may be downloaded at: *http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm*.

There may be circumstances in which a different set of baseline conditions is more appropriate. If a user wishes to adjust the baseline, CAPCOA recommends using the methods provided in the measure Fact Sheet, and in Appendix B, but substituting data inputs that better reflect the baseline conditions for the project under consideration. This ensures consistent methods are used so the comparison of baseline to project is an "apples-to-apples" comparison. So, for example, a user outside of California would substitute an emission factor for electricity generation that better represents the generation mix that is provided in the user's region. This alternative factor would be used in the baseline methods where electricity generation is part of the calculation, and would also be used in the quantification of emissions associated with the project.

It may also be appropriate to adjust the baseline conditions on a temporal basis if needed to account for changes over time. The ARB revises its emissions inventory information on a periodic basis. The most current inventory information was published in May of 2010, and covers the time period from 2000 to 2008. The information is available by category, with trends analysis, and with full documentation of data sources and methods. The updated emissions inventory information is available at: *http://www.arb.ca.gov/cc/inventory/data/data.htm*.

Business-as-Usual Scenario

Figure 3-2: Business-as-Usual



Not all baseline conditions occur in the present. In some cases, the baseline is a forecast of the conditions that are expected to exist at some time in the future, in the absence of interventions to change those future conditions. The forecasted baseline conditions are referred to as "business-as-usual" and are intended to reflect normal operation. For example, a town might currently have 20,000 residents, and be on a course to to add another 5,000 residents in low-density, planned development at the perimeter of its existing footprint over the next 10 years. The town could add an urban growth boundary that would change that anticipated development. In order to quantify the effect of adding the urban growth boundary, the business-as-usual growth scenario must first be calculated; that will form the baseline to compare to the growth scenario with the adopted boundary. Figure 3-2 illustrates the application of the "business-as-usual" concept to a project.

ARB defines business-as-usual to mean, "the normal course of business or activities for an entity or a project before the imposition of greenhouse gas emission reduction requirements or incentives."[3]

Mitigation Types

There are four general ways to create emission reductions for mitigation projects: (1) the operation or activity can be avoided so that emissions are not created in the first place; (2) the operation or activity can be changed so that it creates fewer emissions; (3) emission control technology can be added to the activity or operation that prevents the release of emissions that are created; and (4) emissions that have been released can be sequestered in the environment. Each of these is discussed below.

Avoided Emissions: When someone chooses to walk to the grocery store in lieu of driving, or turn off the lights, energy isn't needed to power the car or lights, and the emissions associated with that energy don't occur. In the case of walking instead of driving, the avoided emissions include the CO_2 and other pollutants that would have come from the tailpipe of the car. These are "direct" emissions that are being avoided, and they can be readily quantified to show the benefit associated with walking. When electricity isn't needed, it isn't generated; the avoided emissions are the CO_2 and other pollutants that are not emitted by the power plant. Because the emissions are not directly emitted where the light is being used, this type of emissions are referred to as "indirect" emissions; even though they are indirect, they can still be quantified to show the benefit of turning off the lights. There can be other benefits associated with avoided emissions as well. When you consider the walking scenario in a lifecycle sense, the avoided emissions can also include the energy that would have been used to extract, refine, transport, and dispense the fuel. The same is true when you use a reusable cloth bag instead of a disposable plastic bag to carry your purchases; energy is needed to extract and refine the petroleum that goes into the bag, to make and transport the bag, and then to dispose of the bag after it is used. These kinds of avoided emissions are much more difficult to fully quantify, however, and will not be included in the quantification approaches in this document. Even if we aren't quantifying the benefits, however, it is important to understand that avoided emissions can have positive effects both upstream and downstream, creating a ripple effect of further avoided emissions.

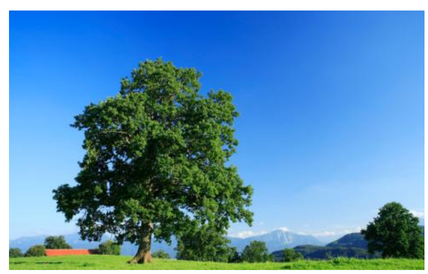
[3] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(18), Dec., 2009; page 7.

Fewer Created Emissions: If the activity or operation can't be avoided, sometimes it can be accomplished in a way that creates fewer emissions. This is usually associated with increased efficiency. So, for example, if walking to the store isn't an option, someone could choose to drive there in a more efficient vehicle, like a gas-electric hybrid powered car. The engine in the hybrid is able to drive more miles with less fuel consumed. Less fuel consumed equates to fewer emissions at the tailpipe. In the lighting example, using a more efficient light bulb is one way to reduce the indirect emissions, but a more efficient power plant would also do this.

Controlled Emissions: Once emissions are created, they are either released to the environment, or they are controlled with technology that captures and stores or destroys them. In the car example, the addition of a catalytic converter allows the tailpipe emissions to be collected after they are created, and destroyed before they are released. Note that the efficiency of the engine (discussed above), and the control of emissions after they leave it, are two distinct ways to reduce emissions. There are also emissions control technologies for power plants.

Sequestration of Emissions: Carbon emissions are "sequestered" by embedding the carbon in structure that will hold the emissions and keep them out of the atmosphere. Sequestration happens through biological, chemical, or physical processes.

Biological Sequestration: Trees and other vegetation biologically absorb carbon from the atmosphere and incorporate it into their biomass; the carbon becomes the solid form of the growing tree or plant. Many sequestration projects involve the planting of trees or vegetation to improve the uptake of carbon from the atmosphere. Enhanced farming practices may also achieve some sequestration through the use of CO_2 absorbing cover crops, improved grazing practices, and restoration of depleted land. Increased peat production in peat bogs is also method to biologically sequester carbon.



Chemical Sequestration: Oceans absorb CO_2, and it causes the oceans to become more acidic (which is detrimental to coral reefs and other sea life). Other chemical processes include reacting CO_2 through a process called mineral carbonation to form stable carbonate minerals that are normally found in the earth's crust.

Physical Sequestration: CO_2 can also be physically contained in a way that prevents its release to the atmosphere. This can involve injecting it deep into the ground, for example into depleted oil and gas reservoirs. It can also be injected into oil wells to push up the oil. Another approach is to embed it in cement through a newly developed process that causes cement to absorb CO_2 from the atmosphere while it is curing.

Measure or Project Scope

Just as good quantification requires careful and transparent consideration of the baseline or business-as-usual scenario, it also requires a complete and detailed characterization of the measure or project being undertaken. This is important because considerations of what is included in, and what is excluded from, the analysis can have a significant impact on results of the quantification.

Determining the appropriate scope for the analysis of a project or measure is not always as simple as it might appear. Take for example the installation of solar panels in a remote desert region that receives a lot of sun. The panels generate electricity without releasing GHG emissions, which offset more traditional generation of electricity that does emit GHGs. But the desert region may be prone to dust or sand storms, which would quickly obscure the glass panels and decrease their effectiveness. This decrease could be minimized if the panels were cleaned regularly. But the cleaning will require vehicles to come to the site, which takes energy and releases GHGs, and the cleaning activity itself may do so as well. If the site is truly remote, the emissions from those vehicle trips could be large. But what if there is another installation nearby: can the trip-related emissions be considered only in addition to those for the other site? Do you have to know if the cleaning for both sites can be accomplished in one trip? And what about the energy and materials needed to make the solar panels?

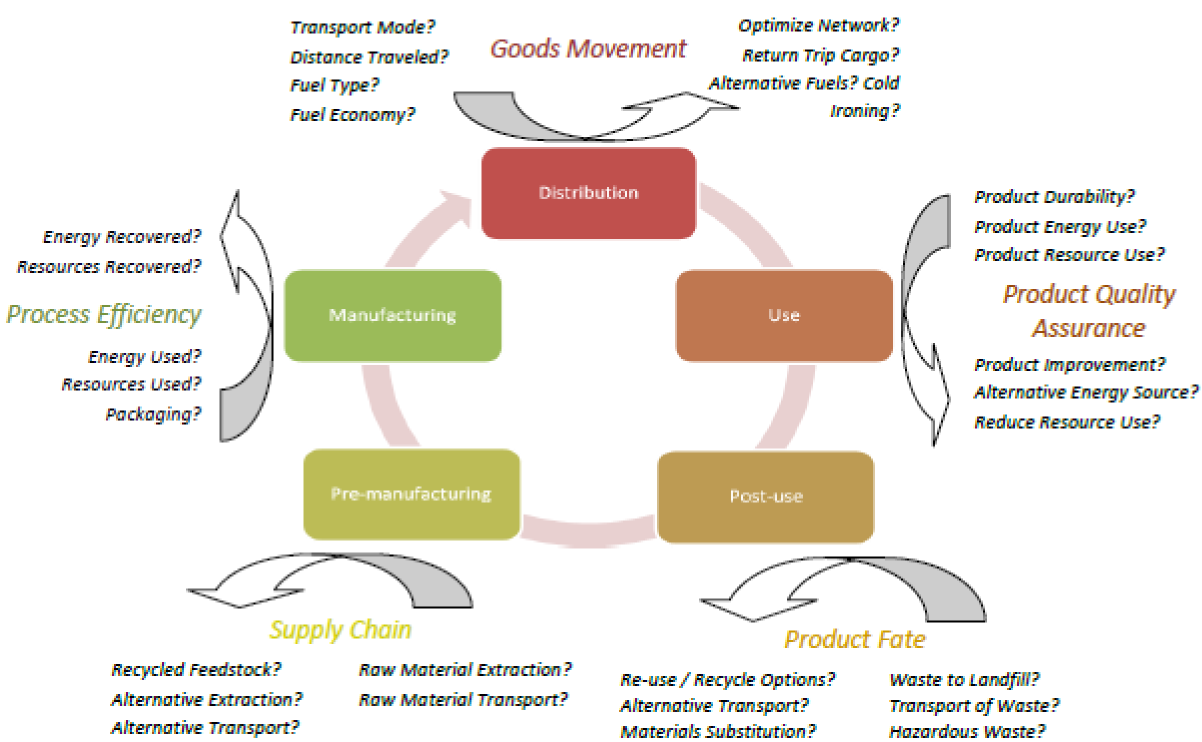
The methods in this Report generally include those reductions over which a project proponent can exercise direct control, as well as indirect emissions associated with electrical generation and the use of natural gas. CAPCOA does not include analysis of full lifecycle emissions in this Report, because of the complexity of the analysis involved and the lack of general standards for incorporating such considerations.

Lifecycle Analysis

Energy and materials are involved in the creation, processing, transport, and disposal of all of the products we use, from the tomatoes on our salads, to the computers we work with, the vehicles we drive (even if they are zero-emission vehicles), and the roadways we travel over. A lifecycle analysis attempts to identify and quantify the GHG emissions associated the energy and materials used at all stages of the product’s life, from the gathering of raw materials, through the growing or fabrication, distribution, use, and the ultimate disposal at the end of the product’s useful life.

This is a difficult and complicated undertaking; it is challenging to identify all of the inputs that are both necessary and meaningful for this sort of analysis. Even if the inputs can be identified, good data are not readily available to quantify emissions in most cases. Further, there is not yet agreement on methodological approaches to lifecycle analysis for most sectors (Figure 3-3: Lifecycle Analysis shows a basic schematic of some of these considerations.). For these reasons, as stated under the discussion of scope, above, CAPCOA does not include lifecycle analysis in this Report.

Figure 3-3: Lifecycle Analysis



Unfortunately, there are important mitigation projects or measures that cannot be quantified without a lifecycle analysis, and some of them are measures that are highly desirable or commonly encouraged. One example is the recycling and reuse of construction materials; it is intuitively obvious that recycling and reuse avoids both the embedded energy costs in the new material, as well as the energy and emissions associated with disposal. Another example is the push for reusable cloth grocery bags instead of disposable plastic ones, or reusable water bottles filled with tap water instead of disposable bottled water. For some of these measures, it is possible to do a limited lifecycle analysis, if the project scope is well defined and if the data are available. The Report provides a discussion of how to pursue an analysis in such cases, but otherwise identifies these kinds of measures as Best Management Practices.

It is important to note that Appendix F to the CEQA Guidelines Amendments approved in December of 2009 specifically state that a lead agency is not required to perform a project-level energy life-cycle analysis[4]. Because direct GHG emissions from electrical generation, and GHG emissions from electricity associated with water use (as well as other direct emissions associated with water treatment) are well defined and can be

[4] California Natural Resources Agency: Adopted Text of the CEQA Guidelines Amendments (Adopted December 30, 2009, Effective March 18, 2010), Appendix F.

accurately quantified, they are not considered to "lifecycle emissions" for the purposes of this Report, and they are included in these quantification methods.

Accuracy and Reliability

In an effort to standardize the creation of GHG inventories, and improve the quality of the information, the IPCC defines "good practice" for GHG emissions quantifications as those that "contain neither over- nor under-estimates so far as can be judged, and in which uncertainties are reduced as far as practicable."[5]

Part of the challenge in developing methods that meet this standard of good practice is assuring the accuracy of the methods. CAPCOA uses accuracy to mean the closeness of the agreement between the result of a measurement or calculation, and the true value, or a generally accepted reference value. When a method is accurate, it will, for a particular case, produce a quantification of emissions that is as close to the actual emissions as can practicably be done with information that is reasonably available.

To meet the good practice standard, the quantification methods must also be reliable, which is different from being accurate. A reliable method will yield accurate results across a range of different cases, not only in one particular case.

To some extent, the accuracy of the quantification is sacrificed to achieve reliability. This is because a method that can be applied across a range of scenarios must be generalized to some extent. So, for example, the transportation analyses do not, for the most part, differentiate between peak and off-peak vehicle trips, even though off-peak trips will have a lower emission impact because of the effects of congestion on travel time and engine performance. In order to fully address all of the factors that impact the emissions associated with vehicle trips in a specific project, a far more detailed and costly analysis would be needed, and it would not be readily applied to other situations. The methods contained in this Report have been developed to provide the best balance between accuracy and reliability, bearing in mind that ease of use is also important.

In order to ensure both the accuracy and the reliability of the quantification methods in this Report, each method is accompanied by a discussion of the assumptions and limitations of the method. Where either the assumptions are not met, or the limitations are exceeded, the method will not be accurate, and the error can be very large. Further, if the conditions of the project differ from the assumptions and limitations of the method, the quantification may no longer be applicable. It is possible to look at the underlying assumptions and calculation and make adjustments to the method so that it better reflects the conditions of a specific project. Doing this may preserve the accuracy to some extent, but the user is responsible for determining how best to accomplish this, and the reviewing agency will decide whether the results are still acceptable.

[5] IPCC 2006, "2006 IPCC Guidelines for National Greenhouse Gas Inventories," Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds).Published: IGES, Japan. Page 1.6.

Additionality

In order for a project or measure that reduces emissions to count as mitigation of impacts, the reductions have to be "additional." Greenhouse gas emission reductions that are otherwise required by law or regulation would appropriately be considered part of the existing baseline. Thus, any resulting emission reduction cannot be construed as appropriate (or additional) for purposes of mitigation under CEQA. For example, in the draft regulation for cap-and-trade, ARB specifies that in order to be eligible for offset credit, "emission reductions must be in addition to any greenhouse gas reduction, avoidance or sequestration otherwise required by law or regulation, or any greenhouse gas reduction, avoidance or sequestration that would otherwise occur."[6] What this means in practice is that if there is a rule that requires, for example, increased energy efficiency in a new building, the project proponent cannot count that increased efficiency as a mitigation or credit unless the project goes beyond what the rule requires; and in that case, only the efficiency that is in excess of what is required can be counted. It also means that if there is a rule that requires a boiler to be replaced with one that releases fewer smog-forming pollutants, and the new boiler is more efficient and also releases less CO_2, the reduced CO_2 can't be counted as mitigation or credit, because the reductions were going to happen anyway. But if the boiler were replaced with a solar-powered water heater, the difference in emissions between a typical new boiler and the solar water heater could be counted.

From a practical standpoint, any reductions that are *not* additional have to be either included in the baseline or subtracted from the project, whichever is more appropriate. In preparing this Report, CAPCOA made determinations about requirements to include in or exclude from the baseline. A more complete discussion of those determinations is included in Appendix B.

Verification

Verification is the process by which we demonstrate that the emission reductions we have quantified for a project actually occurred. While not important for purely voluntary projects, verification in some form is a necessary step in most other circumstances. Verification is an important component in establishing the value of reductions that are made. It allows others to have confidence in the quality of the reductions. If the reductions are being made to satisfy an obligation to mitigate impacts, the agency with jurisdiction should be consulted to determine what standard of verification is needed. In some cases, independent, third-party verification is required. Not all regulatory programs specify third-party verification, however. For example, the U.S. EPA's Mandatory Reporting Rule relies instead on routine compliance verification through a permit system.

[6] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(4), Dec., 2009; page 6.

This chapter of the Report provides an explanation of how the quantification methods were developed, and the limitations of the sources used. There is also an overview of the presentation of the quantification methods in the Report. Finally this section discusses the limitations of the methods themselves, and how these limitations should be considered when applying the methods to actual mitigation projects.

General Emission Quantification Approach

The emission quantification methods in this Report are designed to provide GHG estimates using readily available, user-specified information for a source or activity. In general, GHG emissions associated with a given source or activity are estimated using data for a physical quantity or metric, on the underlying assumption that CO_2 emissions are directly proportional to that metric. For example, emissions related to vehicles are estimated using vehicle trips and mileage data. For sources of indirect emissions such as buildings, swimming pools, municipal lighting and water distribution, the metric is energy use as electricity or natural gas[1]. When site-specific energy use data are not available, energy use can be estimated using a physical metric such as the volume of water supplied, the size of building, and the number of lamps.

For each source metric there are emission factors that quantify the amount of emissions released as a result of the source or activity. These emission factors have been developed by various governmental agencies, public utilities and other entities though data analysis and numerical models. The factors are based on certain assumptions that define the typical or "baseline" emissions scenario. For example, emission factors for vehicles assume a particular type of fuel and driving speed, and emission factors for electricity use assume a certain mix of electricity generating methods. .

Individual GHGs are converted to carbon dioxide equivalent units by multiplying values by their global warming potential (GWP). The GWP values used in this report are based on the IPCC Second Assessment Report (SAR, 1996), even though more recent (and slightly different) GWP values were developed in the IPCC's Third Assessment Report (TAR, 2001) and Fourth Assessment Report (FAR, 2007). The values in the SAR were used in this Report because they are still used by international convention.

The general equation for emissions quantification is shown below for each GHG:

$$\text{GHG Emissions} = [\text{source metric}] \times [\text{emission factor}] \times [\text{GWP}]$$

Then, all GHGs are summed from an individual source.

$$\text{GHG Emissions}_{total} = \sum_{n=1}^{i} [\text{GHG Emissions}]_n$$

[1] Note that emissions from natural gas use are not always indirect in nature. For more discussion of direct and indirect emissions and types of mitigation, please see Chapter 3.

Where "source metric" and "emission factor" are defined as follows:

Source Metric: The "source metric" is the unit of measure of the source of the emissions. For example, for transportation sources, the metric is vehicle miles traveled; for building energy use, it is "energy intensity", that is, the energy demand per square foot of building space. Mitigation measures that involve source reduction are measures that reduce the source metric. This can include for example, reducing the miles traveled by a vehicle because the reduction in miles traveled will reduce the emissions generated from vehicle travel. Similarly, a reduction in dwelling unit electricity use by installing energy efficient appliances and lighting will reduce the emissions associated with total electricity assigned to dwelling units.

Emissions associated with source reduction measures are generally avoided emissions. As discussed in Chapter 3, there are often additional benefits to these kinds of reductions. Source reduction promotes efficient use and management of resources and utilities, in addition to avoiding emissions. Thus, source reduction can also result in a decreased need for downstream emissions control. From a quantification standpoint, for this type of measure, it is the "source metric" in the basic emissions equation (above) that changes.

Emission Factor: The "emission factor" is the rate at which emissions are generated per unit of source metric (see above). Reductions in the emission factor happen when fewer emissions are generated per unit of source metric, for example, a decrease in the amount emissions that are released per kilowatt hour, per gallon of water, etc. Such a decrease may apply if a carbon-neutral electricity source (e.g. from photovoltaics) is used in place of grid electricity, which has higher associated emissions; or if electricity is used instead of combustion fuel, such as with electric cars. Reductions can also occur if a fuel with lower GHG emissions is used in the place of one with higher GHG emissions. From a quantification standpoint, for this type of measure, it is the "emission factor" in the equation that changes.

For both kinds of measures, mitigated emissions are calculated using the same general equation, but the emissions will change based on whether the values change for the source metric or the emission factor. Several mitigation measures may apply to the same source, changing both the source metric and the emission factor, and the estimation of the overall impact of simultaneous measures must be carefully evaluated. In some cases the reductions are additive, but in others they must be evaluated sequentially. Other sets of mitigation measures may require additional analysis to avoid double-counting. Furthermore, not all types of mitigation measures will be feasible in all situations. Chapter 6 provides a detailed discussion of considerations in quantifying the combination of mitigation measures, as well as a set of rules to guard against over-estimation of reductions.

Quantification of Baseline Emissions

In order to ensure that similar assumptions and methodologies are being used to quantify both the baseline and project emissions, a consistent set of methodologies for determining the GHG emission baseline emissions was defined. This was the first step in establishing quantitative methods for assessing GHG mitigation reductions. The results of this effort are contained in Appendix B and should be utilized or considered when establishing baseline emission levels. This same set of methodologies was used to develop the quantification methods for each mitigation measure.

Quantification of Emission Reductions for Mitigation Measures

There is a wide array of mitigation measures that could reduce direct or indirect GHG emissions for a project; however, not all of them can be readily quantified with the information and tools currently available. Other measures may be individually quantifiable, but the quantification cannot be reliably extrapolated to other similar projects. The goal in developing this Quantification Report was to provide accurate and reliable methods that can be easily applied across a range of projects and settings. This section explains how the list of measures included in this guidance was developed, and how the measures are presented.

Screening of Mitigation Measures: An initial list of candidate measures was developed with about 75 types of greenhouse gas mitigation measures related to site design, land use, building components, parking measures, energy, solid waste management, etc. These were identified because they were commonly seen in land use permit applications or were measures that air districts have been frequently asked for guidance on. A literature review was done to identify potential additional measures.

Measures from this compiled list were screened based on the following criteria:

- Relevance to project-level CEQA analysis;
- Availability of empirical evidence or reliable research to credibly establish baselines and level of effectiveness; and
- Non-negligible level of effectiveness determined by credible research.

Measures or grouped measures that did not meet all three of these criteria were evaluated for the possibility of grouping measures with synergistic effects or describing as a Best Management Practice (BMP). Where measures were determined to be BMPs, the Report describes the relevant literature and, where applicable, provides methods that could be used if substantial evidence is available to support the reduction effectiveness. In addition some measures had substantial evidence of reductions when implemented at a general Plan (GP) level rather than a project level. These measures were retained as applicable for General Plans, only. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by weighting the overall effect by the number of projects to which the General Plan reduction would apply.

Information Sources and Their Limitations: The quantified effect that different mitigation measures have on source quantities or emission intensities must be based on substantial evidence and should be enforceable (to ensure that the commitments are adhered to) and verifiable (to confirm that the mitigation measures were implemented).

Examples of credible sources for supporting evidence include government agency-sponsored studies, peer-reviewed scientific literature, case studies, government-approved modeling software and widely adopted protocols. In order for the supporting evidence or data for a given mitigation measure to be deemed applicable, it must be based on similar or scalable assumptions and conditions in terms of period of study, physical scale, site-specific parameters, operating conditions, technology, population type, etc.

There are uncertainties associated with any type of estimation method. Some of these methods attempt to predict future behavior with respect to water and energy use using historical data and trends, which may not accurately reflect changes in behavior due to increasing awareness of resource conservation. Despite these uncertainties, the methods presented in Chapter 7 provide the best available estimations of GHG emissions and are therefore suitable for the project-level inventories.

Enforceable Reductions: As discussed in Chapter 2, emission reductions (whether as mitigation under CEQA, for regulatory purposes, or for trading) have to be enforceable. For that reason, in this Report the quantity of reductions or applicability of mitigation measures is limited to elements which the project proponent can control. Additional reductions in GHG emissions may be feasible in the broader sense and may occur; however, because the project proponent does not have control over these elements, those other reductions are not considered in the quantification methods here.

For instance, in the context of a building project, source reductions that rely on individual occupant behavior are generally not enforceable by the builder. A residential dwelling, when occupied, will contain a variety of electrical appliances. An individual occupant may decide to purchase energy efficient appliances and would therefore reduce energy use. This reduction in energy use is not enforceable, however, because the project proponent can’t dictate individual occupants’ purchases; these types of reductions are not counted in the methods in this Report. There may be some instances, however, where the project proponent is the occupant and would have the ability to enforce behavior. In these instances additional emission reductions not quantified in this document may be feasible and enforceable.

Some reductions in emissions are not enforceable when voluntary, but become enforceable when implemented as part of a regulatory scheme. Once regulations that result in emissions reductions are enacted, the project should be reviewed to determine how the requirements affect the baseline, and the reductions that can be quantified for mitigation credit.

When the emission reductions from a project are not enforceable, and therefore not quantified under these protocols, they may still have value for mitigation purposes and a qualitative analysis should be considered. Decisions about whether such reductions will be considered, and what sort of qualitative analysis is appropriate, are the responsibility of the agency reviewing the project.

Creation of Mitigation Measure Fact Sheets: Once the list of mitigation measures was determined, detailed Fact Sheets were developed for each mitigation measure. Each fact sheet presents a summary of the measure's applicability; the required calculation inputs from the actual project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The fact sheets begin with a measure description. This description includes two critical components: (1) specific language regarding the measure implementation (which should be consistent with the implementation method for the actual project), and (2) a discussion of key support strategies that are assumed to also be in place for the reported range of effectiveness. Chapter 6 provides a discussion of the Fact Sheets and a brief description of their intended use. The Fact Sheets themselves are included in Chapter 7.

Quantification Methods

In this Report, emissions reductions are presented in terms of percentage reductions. For mitigation measures where the source metric is reduced, reductions were generally assessed based on a ratio comparison of a common "denominator" source metric for each source category in order to assist in the quantification of strategy impacts:

- Building Energy Use will utilize natural gas and electricity use.
- Water will utilize outdoor and indoor water use.
- Solid waste will utilize waste disposed.
- Mobile sources will utilize changes in vehicle miles travelled (VMT).

For mitigation measures involving emission factor reductions, a ratio comparing the mitigated and baseline emissions factor is utilized to quantify the emission reductions.

Because a ratio comparison is utilized, in most cases the reductions quantified for GHGs will also be the same reduction assessed for criteria pollutants and toxic air contaminants provided the reduction in emission factors also occurs for the other types of pollutants. This is not always the case and in some cases a reduction for one pollutant may result in an increase for another pollutant.

There is one exception to the quantitative approach described above, for off-road and on-road vehicles that affects the quantification of the emissions of ROGs. The underlying data and methods available to quantify these emissions were limited to running emissions (that is, emissions from the tailpipe while the engine is running). There are also evaporative emissions, however, which occur when pollutants evaporate from the fuel in the fuel tank and escape to the atmosphere. The evaporative emissions of most pollutants are very small when compared to the running emissions, but evaporative emissions of ROGs are not small compared to the running emissions. Because the underlying data and methods available did not address evaporative emissions, they are not part of the emission factor ratio and must be accounted for separately. Accordingly, an estimate of the ratio of running to evaporative emissions for ROGs was determined and used to adjust the reductions for ROGs from vehicles.

Limitations to Quantification of Emission Reductions for Mitigation Measures

In order to properly apply the quantification methods in this Report, it is important to understand the limitations of the methods. The following discusses the limitations of the underlying data and methods used to develop the quantification in this Report. A discussion of the limits on applying the methods in the Report is contained in Chapter 6. Further, the Fact Sheet for each individual measure identifies specific limitations and considerations that affect the application of that particular measure.

Prediction of Future Behavior: In order to assess the emissions associated with a project that does not yet exist, it is necessary to make assumptions regarding anticipated amounts of energy use, VMT, water use, etc, that will characterize the project once it occurs. These values may be based on estimates of source metrics from surveys of current values for those metrics, or from recent historical values. When such data are used, they are typically assumed to remain constant when applied to the project unless a there is a specific action (such as the application of a mitigation measure) that would alter the value(s). Although this is a commonly accepted practice, in reality, current behavior is not likely to remain constant over time in the way it is assumed. For instance, the occupant of a building determines the set point of thermostats, the duration of showers, and the usage of air conditioning, among other things. The project proponent will have little, if any, influence over these choices made by the future occupants.

Understanding the limits of these predictions, they are still the best basis for estimating future behavior. For this Report, quantification was based on current median behavior attributes. The limitations of the predictions can be minimized, however. Information about what influences behavior in specific circumstances is often available. Where data are available to show the relationship between external factors and the source metrics used to quantify a particular measure (such as fuel prices and VMT, for example), and more specific information is available about those external factors to predict future trends, that information could be used to further refine the quantification presented here. Again, the quality of the data used will substantially affect the accuracy and reliability of the results. It is also important to be aware of, and to minimize if possible, the error that can result from combining data from different sources (see below).

Combination of Data Sources: The quantification of some of the measures in this Report required the use of multiple sources of data. Any time data are derived from different sources there may be slight discrepancies the underlying in methodologies and data set characteristics; when the information between two data sets is combined, the discrepancies may affect the ultimate quantification of emissions, either over- or underestimating them. For example, some energy efficient appliances were not directly called out in the study of primary energy use based on end use. To obtain information on specific end uses, a secondary source was consulted that quantified energy use by end uses, and the values from this study were used to provide the detail where the end use data were lacking in the first study. It is not possible to determine the precise magnitude of the error that combining these two data sets induced in the final quantification, however every effort was made to minimize potential errors through thorough review of available data and exclusion of incompatible data sets.

There may be data sets available when considering a specific project that address the particulars of the project but are not generally applicable. Such case-specific data could be substituted for the more general data used to develop the quantifications in this Report. If such a substitution is considered, it is important to understand that it can result in an error in the quantification of the mitigation measure reductions because the methods used to derive the case-specific data may contain different assumptions that are not considered in, or are not consistent with the mitigation measure as characterized in the Fact Sheet. Anyone proposing the use of alternative underlying data for source metrics or emission factors must have a good understanding of the assumptions used in estimating the metrics/factors used in the baseline methodology and measure quantification for this Report. The discussion of sources and methods in the measure Fact Sheets as well as the baseline methodology in Appendix B should provide sufficient information to make this assessment.

Understanding these caveats, use of source-specific data is generally an improvement over that of generalized data, and where good quality source-specific data are available, they should be used. CAPCOA will not be able to review case-specific changes to the methods in this Report; however, the local air district may be able to provide assistance or recommendations. The decision to allow alterations to methods, including substitution of underlying data sets, rests with the agency reviewing the project.

Projects That Involve More Than One Mitigation Measure: Each mitigation measure was quantified using a specific set of underlying data and assumptions, and will provide the most accurate and reliable results when the project precisely matches the description of the measure, with all of its assumptions and limitations. In reality, projects may differ from the described measures, or may involve the application of more than one measure. In order to ensure that the resulting quantification is appropriate and accurate, specific procedures are provided in Chapter 6 for combining mitigation measures.

Lack of Detailed Information: The quantification methods provided in this report have been developed to allow them to be applied to a range of project conditions and still yield accurate and reliable results. In order to do this, the methods require data inputs that reflect the specific conditions of the project. Because the project has not yet been completed, however, certain information about the project will not be known and must be either estimated or assumed based on standard procedures. For example, at the time of the CEQA process a project proponent might know the number of residential dwelling units that will be in the project, but not know the actual square footage individual units will have. Similarly, while the project proponent may know a general type of non-residential land uses planned, these are often generalized categories such as retail and do not reflect the true diversity and range of source category parameters that would occur between the specific types of retail that the project eventually has. Nor can a project proponent predict specific appliances that will be in buildings or frequency of use. Further, most projects rely on generalized trip rate and trip lengths information that are not specific to the project; these estimates may over or underestimate the actual trip rates and trip lengths generated by the project. In each of these cases, estimates of future conditions are made based on accepted procedures and available data. This Report does not provide, or in any way alter, guidance on the level of detail required for the review or approval of any project. For the purposes of CEQA documents, the current CEQA guidelines address the information that is needed.[2]

The lack of precise and accurate data inputs limits the quality of the quantified project baseline and mitigated emissions, however. This limitation can be minimized to the extent the project proponent is able to provide better predictive data, or establish incentives, agreements, covenants, deeds, or other means of defining and restricting future uses to allow more precise estimates of the emissions associated with them. Some of these means of refining the data may also be creditable as mitigation of the project. The approval of any such enhancements of the data, or credit as mitigation, is at the discretion of the agency reviewing the project.

Use of Case Studies: One method of enhancing the data available for a project is the use of case studies. Case studies generally have detailed information regarding a particular effect. However, there are limitations of using this information to quantify emissions in other situations since adequate controls may not have been studied to separate out combined effects. There may be features or characteristics in the case-study that do not translate to the project and therefore may over or underestimate the GHG emission reductions. For the most part, case studies were not used as the primary source in the development of the quantification methods in this report. Where case studies were used to enhance underlying data, the studies were carefully reviewed to ensure that appropriate controls were used and the data meet the quality requirements of this Report.

[2] See: California Natural Resources Agency: 2007 CEQA Guidelines – Title 14 California Code of Regulations, Sections 15125, 15126.2, 15144, and 15146.

Extent Reductions Are Demonstrated in Practice: Some of the GHG mitigation measures in this Report are open-ended with regards to the amount of reductions that are theoretically possible. There are, however, practical limitations to the amount of reductions that can actually be achieved. These limitations can include the cost to implement the measure, physical constraints (e.g., roof space for photovoltaic panels), mainstream availability of technology, regulatory constraints, and other practical considerations. In applying the quantification methods for these types of measures, it is important to evaluate the reasonableness and practicability of the assumptions regarding these parameters.

Over time, some of these limitations may change. Implementation costs decrease as advanced technology is reaches mass production scale, for example, technological innovation can address physical constraints, and regulations change. The determination of feasibility for project assumptions should therefore be reconsidered for future applications based on the best available information at the time.

Biogenic CO_2 Emissions: This document did not address biogenic CO_2 emissions. Biogenic CO_2 emissions result from materials that are derived from living cells, as opposed to CO_2 emissions derived from fossil fuels, limestone, and other materials that have been transformed by geological processes. Biogenic CO_2 contains carbon that is present in organic materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and waste from food, animals, and vegetation (such as yard or forest waste). Biogenic CO_2 emissions are excluded from these GHG emissions quantification methods because they are the result of materials in the biological/physical carbon cycle, rather than the geological carbon cycle.

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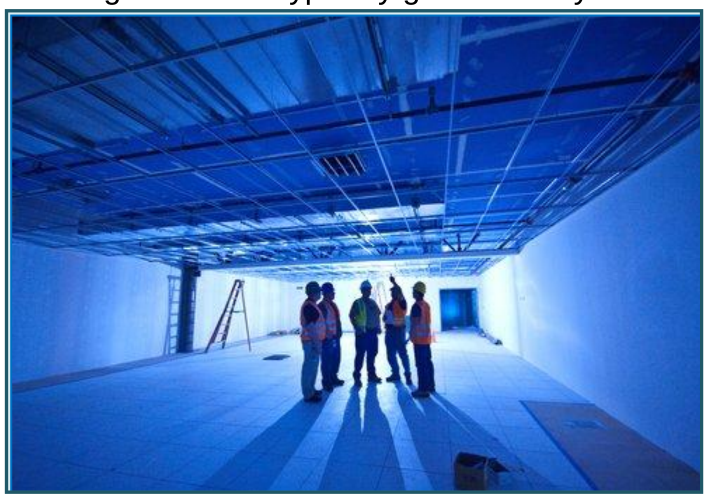
Introduction

The mitigation measures quantified for this Report fall into general categories within which the quantification methods follow a common approach. The following sections summarize the select categories and subcategories of measures and discuss the quantification methods used for each one. In general, emission reductions are quantified (1) as a percentage of the baseline emissions; or (2) by calculating mitigated emissions and determining the change in emissions relative to the baseline case. More detailed explanation of the parameters and equations used to calculate the emission reductions for each individual measure are provided in the Fact Sheets in Chapter 7.

Building Energy Use

The emissions associated with building energy use come from power generation that provides the energy used to operate the building. Power is typically generated by a remote, central electricity generating plant, or onsite generation by fuel combustion. These emissions can be reduced by lowering the amount of electricity and natural gas required for building operations. This can be achieved by designing a more energy-efficient building structure and/or installing energy-efficient appliances. Replacing high-emitting energy generation with clean energy will also reduce emissions, and that type of mitigation is discussed in "On-site Energy Generation" below.


NREL.gov

As discussed in Chapter 3, this Report does not include a lifecycle analysis for GHG emissions. However, if a project proposes mitigation in the form of improved building energy use, a limited analysis of indirect emissions will be needed to quantify the associated reductions in GHG emissions. Emissions associated with energy use to light and heat buildings are, as stated previously, well-defined and not considered to be "lifecycle emissions" for the purposes of this Report. The quantification methods in this Report that deal with building energy use provide a specific method for conducting that analysis.

Emission reductions in this category are quantified as percentage reductions in specific baseline energy end uses, such as Title 24-regulated energy or household appliance energy use. The baseline values are determined using California-specific energy end use databases such as California Commercial End-Use Survey (CEUS) and Residential Appliance Saturation Study (RASS). The percentage reduction in Title-24 regulated energy is a project-specific input, whereas the percentage reductions in energy use for energy-efficient models of various household appliances can be obtained from literature sources (for example, through the Energy Star program).

Outdoor Water Use

Energy use associated with pumping, treating and conveying water generates indirect GHG emissions. The amount of energy required depends on both the volume of water and energy intensity associated with the water source. For example, it generally takes less energy to pump and convey water from a local source than to transport water across long distances. As a result, the GHG emission factor associated with locally-sourced water will also be lower. Indirect GHG emissions associated with water use can be decreased by reducing the water demand and/or by using a less energy-intensive water source. As discussed in Chapter 3, these emissions are well-defined and are not considered to be “lifecycle emissions” for the purposes of this report.

Outdoor water use at mixed-use developments is associated with irrigation for landscaping. The volume of water required for landscaping will depend on the areal extent of landscaping; the specific watering needs for the type of vegetation; and the water efficiency of the irrigation system. A reduction in outdoor water demand can be achieved by designing water-efficient landscapes that include plants with relatively low watering needs; minimizing areas of water-intensive turf; and installing smart irrigation systems to avoid excessive water use. Emission reductions associated with water-efficient design are quantified as the difference between mitigated and baseline values, which in turn are estimated using established models from government agencies or scientific literature. Emission reductions associated with smart irrigation systems and turf minimization are quantified as percentage reductions from the baseline. The implementation of gray water systems, where allowed, and the use of recycled water can also reduce emissions; however, it is important to consider the energy used to operate the gray water or water recycling system. These percentages are either taken from literature or estimated using site-specific data. The quantification methods in this Report include estimates of electricity use for recycled water systems, but not for gray water systems, because those emissions are generally more site specific.

As described previously, the energy use intensity for water supply will depend on the water source and its associated treatment and conveyance requirements. The typical or baseline scenario water source for Southern California is the State Water Project; however, other less-energy intensive supplies such as locally-treated recycled wastewater may instead be used to satisfy some of the project’s non-potable water demand. Energy intensity values for different water sources can be obtained from California Energy Commission reports on water-related energy use, and are provided in Appendix E (Table E-2). Emissions associated with water use are estimated by multiplying the volume of water by the energy intensity value for the water source. The associated emission reduction is quantified by calculating emissions associated with water supplied by the lower impact water source (which can include the gray water or recycled water systems mentioned above), and subtracting it from the emissions associated with the same volume of water using the typical or baseline scenario water source.

Indoor Water Use

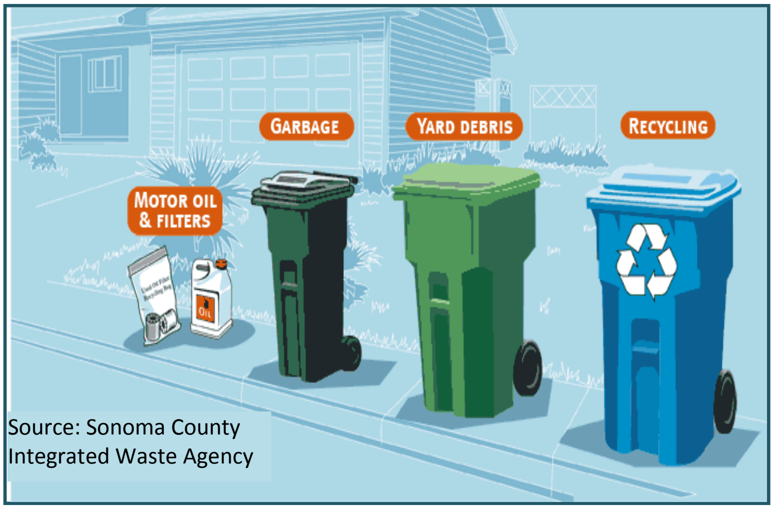
Similar to outdoor water use, indirect GHG emissions from indoor water use can be reduced by decreasing water demand or using a less energy-intensive water source. A project can reduce its indoor water demand relative to the baseline scenario by installing low-flow and high-efficiency water fixtures and appliances such as toilets, showerheads, faucets, clothes washers, and dishwashers.

Emission reductions associated with reduced water demand will be directly proportional to the decrease in demand. The total percentage reduction can be estimated by summing the reductions associated with each type of water-saving feature, which can be obtained from such sources as the California Green Building Standards Code or Energy Star standards. This total percentage would then be multiplied by the project's baseline demand, which should be available from the project's water assessment report. If the water assessment also has an estimate of mitigated water demand, which incorporates the reductions associated with water-saving features, then the reduction can be directly calculated as the difference between baseline and mitigated values.

Emission reductions associated with lower-impact water sources can be quantified as described above for outdoor water use.

Municipal Solid Waste

Solid waste generated at a site can directly produce GHG emissions via decomposition or incineration; it also generates vehicle-based emissions from trucks required to transport waste from its source to the waste handling facility. A reduction in the mass of municipal solid waste sent to landfills would lower emissions associated with its transport and treatment. This can be achieved by reducing the rate at which waste is generated, or by diverting material away from the landfill via on-site composting, reuse, or recycling operations (although direct and transport-related emissions associated with the alternate fates must be accounted for too).



Source: Sonoma County Integrated Waste Agency

Most methods to quantify municipal solid waste involve life-cycle assessments. The fact sheets describe the inventory emissions and the available tools that should be used if the Local Agency or project Applicant would like to quantify the benefits of a solid waste measure with respect to a reduction in life-cycle emissions.

Public Area and Traffic Signal Lighting

Energy use for lighting generates indirect GHG emissions. The amount of energy required for lighting depends in part on the number and energy needs of the lamps. Indirect emissions from lighting energy use can be reduced by installing energy-efficient lamps that maintain the same efficacy beyond what is required to meet any government standards. The replacement of existing, incandescent traffic signal lamps with light-emitting diode (LED) versions will reduce traffic light energy use relative to the baseline. New public lighting fixtures outfitted with energy-efficiency lamps will also use less electricity than the existing baseline energy use. However, because regulations require all new traffic lights to be LED-based, the methods in this Report do not quantify a reduction associated with LED traffic lights for new traffic intersections. Emissions reductions for lighting-based mitigation measures are quantified as percentages of the baseline emissions. The percentage reductions for energy-efficiency lighting are based on a survey of literature data.

Vegetation (including Trees)

As discussed in Chapter 3, vegetation incorporates carbon into its structure during its growth phase, and thereby can remove a finite amount of carbon from the atmosphere. The sequestration capacity of on-site vegetation is determined by the area available for vegetation, and the types of vegetation installed. A project can increase the area available for vegetation by converting previously developed land into vegetated open space. Conversions from one type of vegetated land to another may increase or decrease carbon sequestration, depending on the relative sequestration capacities of the land types. A third way to increase sequestration is by planting new trees on either developed or undeveloped land.

The increase in carbon sequestration capacity is determined by calculating the total sequestration capacity of converted land, new vegetated land and trees; and then subtracting the combined capacity of vegetated land or trees that are removed. Carbon sequestration capacities for different land types (e.g. cropland, forest land) and for different tree species classes are available from IPCC guidelines, and summarized in Table E-2, in Appendix E.

Construction Equipment

Construction equipment typically uses diesel fuel and releases emissions based on the amount of fuel combusted and emission factor of the equipment. Emissions can be reduced by using equipment that emits fewer pollutants for the same amount of work.

This is typically equipment powered through grid electricity or hybrid technology. The exclusive use of grid electricity eliminates the diesel emissions at the site but would increase indirect electricity emissions. However, grid-based emissions are typically small compared to the emissions from the diesel-fueled equipment (depending on the source of grid power). Hybrid-powered equipment would decrease but not completely eliminate fuel use. The electricity for hybrid equipment is self-generated unless the equipment has plug-in capability, so it would not increase grid-based electrical generation and the associated emissions there.

The emissions reductions in this category are determined by finding the difference between the estimated mitigation emissions and the baseline emissions for construction equipment. Emissions for the mitigated scenario may consist of direct emissions from combustion fuel use, and/or indirect emissions from grid electricity. These would be calculated using resources described previously, such as the OFFROAD database and literature-based methodologies and values.

Transportation

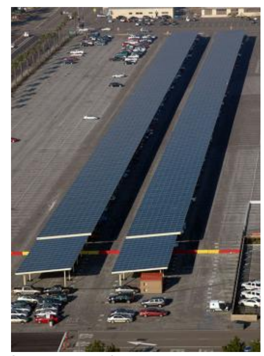
Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet that travels the roads, or by reducing the vehicle miles traveled by the fleet. The majority of the measures quantified for this report focus on the reduction of VMT. This can be accomplished by optimizing the location and types of land uses in the project and its immediate vicinity, and by site enhancements to roads, and to bike and pedestrian networks to encourage the use of alternative modes of transportation. Mode shifts are also encouraged by implementing parking policies, transit system improvements, and trip reduction coordination or incentive programs.

The emission reductions in this category are determined by evaluating the elasticity of a measure relative to the amount of vehicle miles traveled that may be reduced as a result of the mitigation measure.

A few transportation measures in this Report are aimed at improving the emissions profile of the vehicle fleet. These measures promote alternative fuel, hybrid or electrical vehicles. The emission reductions in these measures are based on the improved emission factors and on changes to the assumed vehicle fleet mix.

On-Site Energy Generation

Different modes of energy generation have different GHG emission intensities. Fossil fuel-based generation emits GHG gases from combustion of the fuel, with the amount of emissions depending on the quantity and type of fuel used. Renewable energy generation, on the other hand, typically has significantly fewer emissions, and some types do not have any associated GHG emissions, such as photovoltaic systems and solar hot water heaters (excluding lifecycle emissions, as previously described in Chapter 3).


Solar Array at Coronado Naval Base

The emission reductions associated with using renewable non-emitting energy generated on-site are quantified as the emissions avoided because an equivalent amount of grid energy is not used. To calculate this, the energy generated by the on-site system(s) must be quantified, and then multiplied by the utility-specific emission factor for the type of energy (e.g. electricity, natural gas) being replaced. Energy generated on site is usually used for building operations; hence, it is generally considered a mitigation measure for building energy use.

Miscellaneous

The following miscellaneous mitigation measures are also discussed:

Loading Docks: A project applicant may elect to limit idling of engines beyond what is required by regulation at loading docks, or provide electrified loading docks. Electrified loading docks reduce the need for diesel auxiliary engines to run in order to keep refrigerated transportation units temperature controlled. The emission reduction is a comparison of the GHG emissions associated with the electricity compared to the diesel fuel combustion.

Off-site Mitigation: At the discretion of the reviewing agency, emission reductions may be created with offsite mitigation projects, as described in Chapter 2. If an off-site mitigation project is approved, the amount of emission reductions generated depends on the type of project implemented.

The numerical emission reductions would be quantified using the methods described for the different project categories above, with baseline values derived for the off-site location (instead of the project's baseline scenario). Once the numerical reductions have been estimated, they can be compared to the project's baseline emissions in order to determine the relative percentage reductions. Certain types of off-site projects may result in one-time emissions and others may result in a continuing stream of emissions reductions.

Carbon Sequestration: Emission reductions may be generated by implementing a carbon sequestration project. Carbon sequestration may be biological, chemical, or physical in nature, as described in Chapter 3. This Report does not address chemical or physical sequestration projects.

For biological sequestration, emission reductions are calculated as for vegetation projects (see above). The amount of the sequestration equals the amount of carbon removed by the vegetation.

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This chapter of the Report explains how the quantification of individual strategies is presented in Fact Sheets, how those fact sheets are designed and organized, and how to use them. This chapter also explains how and why mitigation measures have been grouped, and provides detailed discussion of how to apply the quantification methods when more than one strategy is being applied to the same project. A summary of the range of effectiveness for different measures is also provided for general information purposes, in table form, however it is very important that those generalized ranges NOT be used in place of the more specific quantification methods for the measure as detailed in the measure Fact Sheet. Finally, at the end of the Chapter there are step-by-step instructions on using the Fact Sheets, including an example.

Mitigation Strategies and Fact Sheets:

Accurate and reliable quantification depends on properly identifying the important variables that affect the emissions from an activity or source, and from changes to that activity or source. In order to provide a clear summary of those variables and usable instructions on how to find and apply the data needed, we have designed a Fact Sheet format to present each strategy or measure.

Types of Mitigation Strategies: There are three different types of mitigation strategies described in Chapter 7: Quantified measures, Best Management Practices, and General Plan strategies.

<u>Quantified Measures</u>: Quantified measures are fully quantified, project-level mitigation strategies. They are presented in categories where the nature of the underlying emissions sources are the same; the categories are discussed under “Organization of Fact Sheets” below. In addition, the measures may either stand alone, or be considered in connection with one or more other measures (that is, “grouped”). Groups of measures are always within a category; more detailed explanation is provided in “Grouping of Strategies” below. The majority of the strategies in this Report are fully Quantified Measures, and a strategy may be assumed to be of this type unless the Fact Sheet notes otherwise.

<u>Best Management Practices</u>: Several strategies are denoted as Best Management Practice (BMP). These measures are of two types. The first type of BMPs are quantifiable and describe methods that can be used to quantify the GHG mitigation reductions provided the project Applicant can provide substantial evidence supporting the values needed to quantify the reduction. These are listed as BMPs since there is not adequate literature at this time to generalize the mitigation measure reductions. However, the project Applicant may be able to provide the site specific information necessary to quantify a reduction. The second type of BMPs do not have methods for quantifying GHG mitigation reductions. These measures have preliminary evidence suggesting they will reduce GHG emissions if implemented, however, at this time adequate literature and methodologies are not available to quantify these reductions or

they involve life-cycle GHG emission benefits. The measures are encouraged to be implemented nonetheless. Local Agencies may decide to provide incentives to encourage implementation of these measures.

General Plan Strategies: The measures listed under the General Plan category are measures that will have the most benefit when implemented at a General Plan level, but are not quantifiable or applicable at the project specific level. While on a project basis some of these measures may not be quantifiable, at the General Plan level they may be quantified under the assumption that this will be implemented on a widespread basis. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by weighting the overall effect by the number of projects the General Plan reduction would apply to.

Introduction to the Fact Sheets: This Report presents the quantification of each mitigation measure in a Fact Sheet format. Each Fact Sheet includes: a detailed summary of each measure's applicability; the calculation inputs for the specific project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The Fact Sheets are found in Chapter 7.

Layout of the Fact Sheets: Each Fact Sheet describes one mitigation measure. The mitigation measure has a unique number and is provided at the bottom of each page in that measure's Fact Sheet. This will assist the end user in determining where a mitigation measure fact sheet begins and ends while still preserving consecutive page numbers in the overall Report.

At the top of each Fact Sheet, the name of the measure category appears on the left, and the subcategory on the right. Cross-references to prior CAPCOA documents appear at the top left, below the category name. Specifically, measures labeled CEQA #: are from the *CAPCOA 2008 CEQA & Climate Change*[1] and measures labeled MP#: are from the *CAPCOA 2009 Model Policies for Greenhouse Gases in General Plans*[2]. This cross-referencing is also included in the list of measures at the beginning of Chapter 7, and is intended to allow the user to move easily between the documents. The measure number is at the bottom of the page, on the right-hand side.

The fact sheets begin with a measure description. This description includes two critical components:

(1) Specific language regarding the measure implementation – which should be consistent with the implementation method suggested by the project Applicant; and

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[1] Available online at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf
[2] Available online at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-ModelPolicies-6-12-09-915am.pdf

(2) A discussion of key support strategies that are required for the reported range of effectiveness.

Appendices with additional calculations and assumptions for some of the fact sheets are provided at the end of this document. Default assumptions should be carefully reviewed for project applicability. Appendix B details the methodologies that should be used to calculate baseline GHG emissions for a project.

Organization of the Fact Sheets – Categories and Subcategories: The Fact Sheets are organized by general emission category types as follows:

- Energy
- Transportation
- Water
- Landscape Equipment
- Solid Waste
- Vegetation
- Construction
- Miscellaneous Categories
- General Plans

Several of these main categories are split into subcategories, for ease of understanding how to properly address the effects of combining the measures. Strategies are organized into categories and subcategories where they affect similar types of emissions sources. As an example, the category of "Energy" includes measures that reduce emissions associated with energy generation and use. Within that category, there are subcategories of measures that address "Building Energy Use," "Alternative Energy," and "Lighting," each with one or more measures in it. The measures in the subcategory are closely related to each other.

Categories and subcategories for the measures are illustrated in Charts 6-1 and 6-2, below. Chart 6-1 shows all of the measure categories EXCEPT the Transportation category, including their subcategories; note that not all categories have subcategories. Measures in the Transportation category are shown in Chart 6-2. There are a number of subcategories associated with the Transportation category. As shown in Chart 6-2, the primary measures in each subcategory are indicated in bold type, and the measures shown in normal type are either support measures, or they are explicitly "grouped" measures.

It is important to note that subcategories are NOT the same as "grouped" measures / strategies. The grouping of strategies connotes a specific relationship, and is explained in the next section, below.

Chart 6-1: Non-Transportation Strategies Organization

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Energy

BE – Building Energy
- **Exceed Title 24**
- **Install Energy Efficient Appliances**
- Install Programmable Thermostats Reduction: Grouped
- Obtain 3rd Party Commissioning Reduction: Grouped

AE – Alternative Energy
- **Onsite Renewable Energy**
- **Utilize Combined Heat & Power**
- **Establish Methane Recovery**

LE – Lighting
- **Install High Efficacy Lighting**
- **Limit Outdoor Lighting**
- Replace Traffic Lights with LED Reduction: Additional

Water

Adopt a Water Conservation Strategy

OR

WSW – Water Supply
- **Use Reclaimed Water**
- **Use Graywater**
- **Use Locally Sourced Water**

WUW – Water Use
- **Install Low-Flow Fixtures**
- **Design Water-Efficient Landscapes**
- **Use Water-Efficient Irrigation**
- **Reduce Turf**
- Plant Native or Drought-Resistant Vegetation

Area Landscaping

A – Landscaping Equipment
- **Prohibit gas Powered Landscape Equipment**
- Implement Lawnmower Exchange Program Reduction: Grouped
- Electric Yard Equipment Compatibility Reduction Grouped

Solid Waste

SW – Solid Waste
- Institute or Extend Recycling & Composting Services
- Recycle Demolished Construction Material

Vegetation

V – Vegetation
- **Plant Urban Trees**
- **New Vegetated Open Space**

Construction

C – Construction
- **Use Alternative Fuels for Construction Equipment**
- **Use Electric or Hybrid Construction Equipment**
- Limit Construction Equipment Idling
- Institute a Heavy-Duty Off-Road Vehicle Plan
- Implement a Construction Vehicle Inventory Tracking System

Miscellaneous

Misc – Miscellaneous
- **Establish Carbon Sequestration**
- **Establish Off-site Mitigation**
- **Implement an Innovative Strategy**
- Use Local and Sustainable Building Materials
- Require BMP in Agriculture and Animal Operations
- Require Environmentally Responsible Purchasing

General Plans

GP – General Plans
- Fund Incentives for Energy Efficiency
- Establish a Local Farmer's Market
- Establish Community Gardens
- Plant Urban Shade Trees
- Implement Strategies to Reduce Urban Heat-Island Effect

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Chart 6-2: Transportation Strategies Organization

Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT): urban = 75%; compact infill = 40%; suburban center or suburban with NEV = 20%; suburban = 15%

Global Cap for Road Pricing needs further study

Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT): urban = 70%; compact infill = 35%; suburban center or suburban with NEV = 15%; suburban = 10%

Commute Trip Reduction: Max Reduction = 15% overall; work VMT = 25%; school VMT = 65%;

Road Pricing Management: Max Reduction = 25% (all VMT)

Land Use / Location	Neighborhood / Site Enhancement	Parking Policy / Pricing	Transit System Improvements	Commute Trip Reduction (assumes mixed use)	Road Pricing Management	Vehicles
Max Reduction: urban = 65%; compact infill = 30%; suburban center = 10%; suburban = 5%	Max Reduction: without NEV = 5%; with NEV = 15%	Max Reduction = 20%	Max Reduction = 10%	Max Reduction = 25% (work VMT)	Max Reduction = 25%	
Density (30%)	Pedestrian Network (2%)	Parking Supply Limits (12.5%)	Network Expansion (8.2%)	CTR Program Required = 21% work VMT Voluntary = 6.2% work VMT	Cordon Pricing (22%)	Electrify Loading Docks
Design (21.3%)	Traffic Calming (1%)	Unbundled Parking Costs (13%)	Service Frequency / Speed (2.5%)	Transit Fare Subsidy (20% work VMT)	Traffic Flow Improvements (45% CO2)	Utilize Alternative Fueled Vehicles
Location Efficiency (65%)	NEV Network (14.4) <NEV Parking>	On-Street Market Pricing (5.5%)	Bus Rapid Transit (3.2%)	Employee Parking Cash-out (7.7% work VMT)	Required Contributions by Project	Utilize Electric or Hybrid Vehicles
Diversity (30%)	Car Share Program (0.7%)	Residential Area Parking Permits	Access Improvements	Workplace Parking Pricing (19.7% work VMT)		
Destination Accessibility (20%)	Bicycle Network <Lanes> <Parking> <Land Dedication for Trails>		Station Bike Parking	Alternative Work Schedules & Telecommute (5.5% work VMT)		
Transit Accessibility (25%)	Urban Non-Motorized Zones		Local Shuttles	CTR Marketing (5.5% work VMT)		
BMR Housing (1.2%)			Park & Ride Lots*	Employer-Sponsored Vanpool/Shuttle (13.4% work VMT)		
Orientation Toward Non-Auto Corridor				Ride Share Program (15% work VMT)		
Proximity to Bike Path				Bike Share Program		
				End of Trip Facilities		
				Preferential Parking Permit		
				School Pool (15.8% school VMT)		
				School Bus (6.3% school VMT)		

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Grouping of Strategies

Strategies noted as "grouped" are separately documented in individual Fact Sheets but must be paired with other strategies within the category. When these "grouped" strategies are implemented together, the combination will result in either an enhancement to the primary strategy by improving its effectiveness or a non-negligible reduction in effectiveness that would not occur without the combination.

Rules for Combining Strategies or Measures

Mitigation measures or strategies are frequently implemented together with other measures. Often, combining measures can lead to better emission reductions than implementing a single measure by itself. Unfortunately, the effects of combining the measures are not always as straightforward as they might at first appear. When more and more measures are implemented to mitigate a particular source of emissions, the benefit of each additional measure diminishes. If it didn't, some odd results would occur. For example, if there were a series of measures that each, independently, was predicted to reduce emissions from a source by 10%, and if the effect of each measure was independent of the others, then implementing ten measures would reduce all of the emissions; and what would happen with the eleventh measure? Would the combination reduce 110% of the emissions? No. In fact, each successive measure is slightly less effective than predicted when implemented on its own.

On the other hand, some measures enhance the performance of a primary measure when they are combined. This Report includes a set of rules that govern different ways of combining measures. The rules depend on whether the measures are in the *same* category, or different categories. Remember, the categories include: Energy, Transportation, Water, Landscape Equipment, Solid Waste, Vegetation, Construction, Miscellaneous Categories, and General Plans.

Combinations <u>Between</u> Categories: The following procedures must be followed when combining mitigation measures that fall in separate categories. In order to determine the overall reduction in GHG emissions compared to the baseline emissions, the relative magnitude of emissions between the source categories needs to be considered. To do this, the user should determine the percent contribution made by each individual category to the overall baseline GHG emissions. This percent contribution by a category should be multiplied by the reduction percentages from mitigation measures in that category to determine the scaled GHG emission reductions from the measures in that category. This is done for each category to be combined. The scaled GHG emissions for each category can then be added together to give a total GHG reduction for the combined measures in all of the categories.

For example, consider a project whose total GHG emissions come from the following categories: transportation (50%), building energy use (40%), water (6%), and other (4%). This project implements a transportation mitigation measure that results in a 10% reduction in VMT. The project also implements mitigation measures that result in a 30% reduction in water usage. The overall reduction in GHG emissions is as follows:

Reduction from Transportation: 0.50 x 0.10 = 0.5 or 5%
Reduction from Water: 0.06 x 0.30 = 0.018 or 1.8%

Total Reduction: 5% + 1.8% = 6.8%

This example illustrates the importance of the magnitude of a source category and its influence on the overall GHG emission reductions.

The percent contributions from source categories will vary from project to project. In a commercial-only project it may not be unusual for transportation emissions to represent greater than 75% of all GHG emissions whereas for a residential or mixed use project, transportation emissions would be below 50%.

Combinations <u>Within</u> Categories: The following procedures must be followed when combining mitigation measures that fall within the same category.

<u>Non-Transportation Combinations</u>: When combining non-transportation subcategories, the total amount of reductions for that category should not exceed 100% except for categories that would result in additional excess capacity that can be used by others, but which the project wants to take credit for (subject to approval of the reviewing agency). This may include alternative energy generation systems tied into the grid, vegetation measures, and excess graywater or recycled water generated by the project and used by others. These excess emission reductions may be used to offset other categories of emissions, with approval of the agency reviewing the project. In these cases of excess capacity, the quantified amounts of excess emissions must be carefully verified to ensure that any credit allowed for these additional reductions is truly surplus.

Category Maximum- Each <u>category</u> has a maximum allowable reduction for the combination of measures in that category. It is intended to ensure that emissions are not double counted when measures within the category are combined. Effectiveness levels for multiple strategies within a <u>subcategory</u> (as denoted by a column in the appropriate chart, above) may be multiplied to determine a combined effectiveness level up to a maximum level. This should be done first to mitigation measures that are a source reduction followed by those that are a reduction to emission factors. Since the combination of mitigation measures and independence of mitigation measures are both complicated, this Report recommends that mitigation measure reductions within a category be multiplied unless a project applicant can provide substantial evidence indicating that emission reductions are independent of one another. This will take the following form:

GHG emission reduction for category = 1-[(1-A) x (1-B) x (1-C)]

Where:

A, B and C = Individual mitigation measure reduction percentages for the strategies to be combined in a given category.

Global Maximum- A separate maximum, referred to as a global maximum level, is also provided for a combination across subcategories. Effectiveness levels for multiple strategies across categories may also be multiplied to determine a combined effectiveness level up to global maximum level.

For example, consider a project that is combining 3 mitigation strategies from the water category. This project will install low-flow fixtures (measure WUW-1), use water-efficient irrigation (measure WUW-4, and reduce turf (measure WUW-5). Reductions from these measures will be:

- low-flow fixtures 20% or 0.20 (A)
- water efficient irrigation 10% or 0.10 (B)
- turf reductions 20% or 0.20 (C)

To combine measures within a category, the reductions would be
= 1-[(1-A) x (1-B) x (1-C)]
= 1-[(1-.20) x (1-.10) x (1-.20)]
= 1-[(0.8) x (0.9) x (.8)]
= 1-0.576 = 0.424
= 42.4%

Transportation Combinations: The interactions between the various categories of transportation-related mitigation measures is complex and sometimes counter-intuitive. Combining these measures can have a substantive impact on the quantification of the associated emission reductions. In order to safeguard the accuracy and reliability of the methods, while maintaining their ease of use, the following rules have been developed and should be followed when combining transportation-related mitigation measures. The rules are presented by sub-category, and reference Chart 6-2 Transportation Strategies Organization. The maximum reduction values also reflect the highest reduction levels justified by the literature. The chart indicates maximum reductions for individual mitigation measures just below the measure name.

Cross-Category Maximum- A cross-category maximum is provided for any combination of land use, neighborhood enhancements, parking, and transit strategies (columns A-D in Chart 6-1, with the maximum shown in the top row). The total project VMT reduction across these categories should be capped at these levels based on empirical evidence.[3] Caps are provided for the location/development type of the project. VMT reductions may be multiplied across the four categories up to this maximum. These include:

- Urban: 70% VMT
- Compact Infill: 35%
- Suburban Center (or Suburban with NEV): 15%
- Suburban: 10% (note that projects with this level of reduction must include a diverse land use mix, workforce housing, and project-specific transit; limited empirical evidence is available)

(See blue box, pp. 58-59.)

[3] As reported by Holtzclaw, et al for the State of California.

As used in this Report, location settings are defined as follows:

Urban: A project located within the central city and may be characterized by multi-family housing, located near office and retail. Downtown Oakland and the Nob Hill neighborhood in San Francisco are examples of the typical urban area represented in this category. The urban maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average (assumed analogous to an ITE baseline) for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Central Berkeley	-48%
San Francisco	-49%
Pacific Heights (SF)	-79%
North Beach (SF)	-82%
Mission District (SF)	-75%
Nob Hill (SF)	-63%
Downtown Oakland	-61%

The average reflects a range of 48% less VMT/capita (Central Berkeley) to 82% less VMT/capita (North Beach, San Francisco) compared to the statewide average. The urban locations listed above have the following characteristics:

- Location relative to the regional core: these locations are within the CBD or less than five miles from the CBD (downtown Oakland and downtown San Francisco).
- Ratio or relationship between jobs and housing: jobs-rich (jobs/housing ratio greater than 1.5)
- Density character
  - typical building heights in stories: six stories or (much) higher
  - typical street pattern: grid
  - typical setbacks: minimal
  - parking supply: constrained on and off street
  - parking prices: high to the highest in the region
- Transit availability: high quality rail service and/or comprehensive bus service at 10 minute headways or less in peak hours

Compact infill: A project located on an existing site within the central city or inner-ring suburb with high-frequency transit service. Examples may be community redevelopment areas, reusing abandoned sites, intensification of land use at established transit stations, or converting underutilized or older industrial buildings. Albany and the Fairfax area of Los Angeles are examples of typical compact infill area as used here. The compact infill maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Franklin Park, Hollywood	-22%
Albany	-25%
Fairfax Area, Los Angeles	-29%
Hayward	-42%

The average reflects a range of 22% less VMT/capita (Franklin Park, Hollywood) to 42% less VMT/capita (Hayward) compared to the statewide average. The compact infill locations listed above have the following characteristics:

- Location relative to the regional core: these locations are typically 5 to 15 miles outside a regional CBD
- Ratio or relationship between jobs and housing: balanced (jobs/housing ratio ranging from 0.9 to 1.2)
- Density character
  - typical building heights in stories: two to four stories
  - typical street pattern: grid
  - typical setbacks: 0 to 20 feet
  - parking supply: constrained
  - parking prices: low to moderate
- Transit availability: rail service within two miles, or bus service at 15 minute peak headways or less

As used in this Report, additional location settings are defined as follows:

Suburban Center: A project typically involving a cluster of multi-use development within dispersed, low-density, automobile dependent land use patterns (a suburb). The center may be an historic downtown of a smaller community that has become surrounded by its region's suburban growth pattern in the latter half of the 20th Century. The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb. The suburban center maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Sebastopol	0%
San Rafael (Downtown)	-10%
San Mateo	-17%

The average reflects a range of 0% less VMT/capita (Sebastopol) to 17% less VMT/capita (San Mateo) compared to the statewide average. The suburban center locations listed above have the following characteristics:

- Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- Ratio or relationship between jobs and housing: balanced
- Density character
  - typical building heights in stories: two stories
  - typical street pattern: grid
  - typical setbacks: 0 to 20 feet
  - parking supply: somewhat constrained on street; typically ample off-street
  - parking prices: low (if priced at all)
- Transit availability: bus service at 20-30 minute headways and/or a commuter rail station

While all three locations in this category reflect a suburban "downtown," San Mateo is served by regional rail (Caltrain) and the other locations are served by bus transit only. Sebastopol is located more than 50 miles from downtown San Francisco, the nearest urban center. San Rafael and San Mateo are located 20 miles from downtown San Francisco.

Suburban: A project characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb). Suburbs typically have the following characteristics:

- Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- Ratio or relationship between jobs and housing: jobs poor
- Density character
  - typical building heights in stories: one to two stories
  - typical street pattern: curvilinear (cul-de-sac based)
  - typical setbacks: parking is generally placed between the street and office or retail buildings; large-lot residential is common
  - parking supply: ample, largely surface lot-based
  - parking prices: none
- Transit availability: limited bus service, with peak headways 30 minutes or more

The maximum reduction provided for this category assumes that regardless of the measures implemented, the project's distance from transit, density, design, and lack of mixed use destinations will keep the effect of any strategies to a minimum.

Global Maximum- A global maximum is provided for any combination of land use, neighborhood enhancements, parking, transit, and commute trip reduction strategies (the first five columns in the organization chart). This excludes reductions from road-pricing measurements which are discussed separately below. The total project VMT reduction across these categories, which can be combined through multiplication, should be capped at these levels based on empirical evidence.[4] Maximums are provided for the location/development type of the project. The Global Maximum values can be found in the top row of Chart 6-2.

These include:

- Urban: 75% VMT
- Compact Infill: 40% VMT
- Suburban Center (or Suburban with NEV): 20%
- Suburban: 15% (limited empirical evidence available)

Specific Rules for Subcategories within Transportation- Because of the unique interactions of measures within the Transportation Category, each subcategory has additional rules or criteria for combining measures.

❖ Land Use/Location Strategies – Maximum Reduction Factors: Land use measures apply to a project area with a radius of ½ mile. If the project area under review is greater than this, the study area should be divided into subareas of radii of ½ mile, with subarea boundaries determined by natural “clusters” of integrated land uses within a common walkshed. If the project study area is smaller than ½ mile in radius, other land uses within a ½ mile radius of the key destination point in the study area (i.e. train station or employment center) should be included in design, density, and diversity calculations. Land use measures are capped based on empirical evidence for location setting types as follows:[5]

  - Urban: 65% VMT
  - Compact Infill: 30% VMT
  - Suburban Center: 10% VMT
  - Suburban: 5% VMT

❖ Neighborhood/Site Enhancements Strategies – Maximum Reduction Factors: The neighborhood/site enhancements category is capped at 12.7% VMT reduction (with Neighborhood Electric Vehicles (NEVs)) and 5% without NEVs based on empirical evidence (for NEVs) and the multiplied combination of the non-NEV measures.

❖ Parking Strategies – Maximum Reduction Factors: Parking strategies should be implemented in one of two combinations:

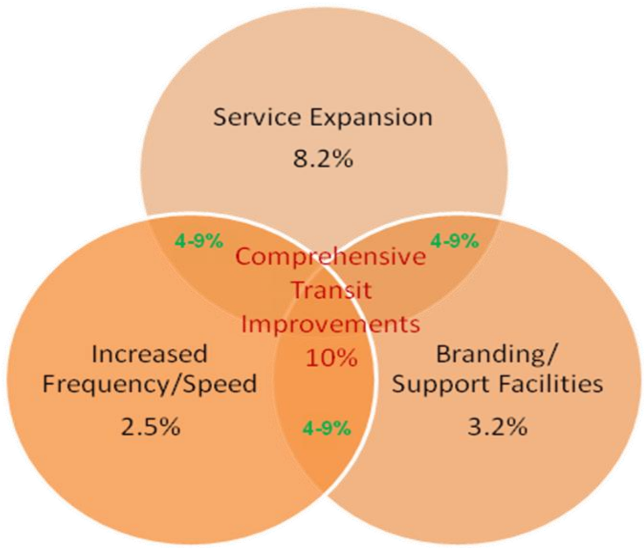
  - Limited (reduced) off-street supply ratios plus residential permit parking and priced on-street parking (to limit spillover), or
  - Unbundled parking plus residential permit parking and priced on-street parking (to limit spillover).

[4] As reported by Holtzclaw, et al for the State of California. Note that CTR strategies must be converted to overall VMT reductions (from work-trip VMT reductions) before being combined with strategies in other categories.

[5] As reported for California locations in Holtzclaw, et al. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and San Francisco.” *Transportation Planning and Technol*ogy, 2002, Vol. 25, pp. 1–27.

Note: The reduction maximum of 20% VMT reflects the combined (multiplied) effect of unbundled parking and priced on-street parking.

- Transit System Strategies – Maximum Reduction Factors: The 10% VMT reduction maximum for transit system improvements reflects the combined (multiplied) effect of network expansion and service frequency/speed enhancements. A comprehensive transit improvement would receive this type of reduction, as shown in the center overlap in the Venn diagram, below.



- Commuter Trip Reductions (CTR) Strategies – Maximum Reduction Factors: The most effective commute trip reduction measures combine incentives, disincentives, and mandatory monitoring, often through a transportation demand management (TDM) ordinance. Incentives encourage a particular action, for example parking cash-out, where the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo. Disincentives establish a penalty for a status quo action. An example is workplace parking pricing, where the employee is now monetarily penalized for driving to work. The 25% maximum for work-related VMT applies to comprehensive CTR programs. TDM strategies that include only incentives, only disincentives, and/or no mandatory monitoring, should have a lower total VMT reduction than those with a comprehensive approach. Support strategies to strengthen CTR programs include guaranteed-ride-home, taxi vouchers, and message boards/marketing materials. A 25% reduction in work-related VMT is assumed equivalent to a 15% reduction in overall project VMT for the purpose of the global maximum; this can be adjusted for project-specific land use mixes.

  Two school-related VMT reduction measures are also provided in this category. The maximum reduction for these measures should be 65% of school-related VMT based on the literature.

- Road Pricing/Management Strategies – Maximum Reduction Factors: Cordon pricing is the only strategy in this category with an expected VMT reduction potential. Other forms of road pricing would be applied at a corridor or region-wide level rather than as mitigation applied to an individual development project. No domestic case studies are available for cordon pricing, but international studies suggest a VMT reduction maximum of 25%. A separate, detailed, and project-specific study should be conducted for any project where road pricing is proposed as a VMT reduction measure.

Additional Rules for Transportation Measures- There are also restrictions on the application of measures in rural applications, and application to baseline, as follows:

- Rural Application: Few empirical studies are available to suggest appropriate VMT reduction caps for strategies implemented in rural areas. Strategies likely to have the largest VMT reduction in rural areas include vanpools, telecommute or alternative work schedules, and master planned communities (with design and land use diversity to encourage intra-community travel). NEV networks may also be appropriate for larger scale developments. Because of the limited empirical data in the rural context, project-specific VMT reduction estimates should be calculated.

- Baseline Application: As discussed in previous sections of this report, VMT reductions should be applied to a baseline VMT expected for the project, based on the Institute of Transportation Engineers' 8th Edition *Trip Generation Manual* and associated typical trip distance for each land use type. Where trip generation rates and project VMT provided by the project Applicant are derived from another source, the VMT reductions must be adjusted to reflect any "discounts" already applied.

Range of Effectiveness of Mitigation Measures

The following charts provide the range of effectiveness for the quantified mitigation measures. Each chart shows one category of measures, with subcategories identified. The charts also show the basis for the quantification, and indicate applicable groupings. IMPORTANT: these ranges are approximate and should NOT be used in lieu of the specific quantification method provided in the fact sheet for each measure. Restrictions on combining measures must be observed.

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Table 6-1: Energy Category

Energy						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Building Energy Use	BE-1	Buildings exceed Title 24 Building Envelope Energy Efficiency Standards by X% (X is equal to the percentage improvement selected for the project			For a 10% improvement over 2008 Title 24: Non-Residential electricity use: 0.2-5.5%; natural gas use: 0.7-10% Residential electricity use: 0.3-2.6%; natural gas use: 7.5-9.1%	
	BE-2	Install Programmable Thermostat Timers	x		BMP	
	BE-3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	x	BE-1	BMP	
	BE-4	Install Energy Efficient Appliances			Residential building: 2-4% Grocery Stores: 17-22%	Appliance Electricity Use
	BE-5	Install Energy Efficient Boilers			1.2-18.4%	Fuel Use
Alternative Energy Generation	AE-1	Establish Onsite Renewable Energy Systems-Generic			0-100%	
	AE-2	Establish Onsite Renewable Energy Systems-Solar Power			0-100%	
	AE-3	Establish Onsite Renewable Energy Systems-Wind Power			0-100%	
	AE-4	Utilize a Combined Heat and Power System			0-46%	
	AE-5	Establish Methane Recovery in Landfills			73-77%	
	AE-6	Establish Methane Recovery in Wastewater Treatment Plants			95-97%	
Lighting	LE-1	Install Higher Efficacy Public Street and Area Lighting			16-40%	Outdoor Lighting Electricity Use
	LE-2	Limit Outdoor Lighting Requirements	x		BMP	
	LE-3	Replace Traffic Lights with LED Traffic Lights			90%	Traffic Light Electricity Use

Table 6-2: Transportation Category

Transportation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Land Use / Location	LUT-1	Increase Density			1.5-30.0%	VMT
	LUT-2	Increase Location Efficiency			10-65%	VMT
	LUT-3	Increase Diversity of Urban and Suburban Developments (Mixed Use)			9-30%	VMT
	LUT-4	Incr. Destination Accessibility			6.7-20%	VMT
	LUT-5	Increase Transit Accessibility			0.5-24.6%	VMT
	LUT-6	Integrate Affordable and Below Market Rate Housing			0.04-1.20%	VMT
	LUT-7	Orient Project Toward Non-Auto Corridor			NA	
	LUT-8	Locate Project near Bike Path/Bike Lane			NA	
	LUT-9	Improve Design of Development			3.0-21.3%	VMT
Neighborhood / Site Design	SDT-1	Provide Pedestrian Network Improvements			0-2%	VMT
	SDT-2	Traffic Calming Measures			0.25-1.00%	VMT
	SDT-3	Implement a Neighborhood Electric Vehicle (NEV) Network			0.5-12.7%	VMT
	SDT-4	Urban Non-Motorized Zones		SDT-1	NA	
	SDT-5	Incorporate Bike Lane Street Design (on-site)		LUT-9	NA	
	SDT-6	Provide Bike Parking in Non-Residential Projects		LUT-9	NA	
	SDT-7	Provide Bike Parking in Multi-Unit Residential Projects		LUT-9	NA	
	SDT-8	Provide EV Parking		SDT-3	NA	
	SDT-9	Dedicate Land for Bike Trails		LUT-9	NA	
Parking Policy / Pricing	PDT-1	Limit Parking Supply			5-12.5%	
	PDT-2	Unbundle Parking Costs from Property Cost			2.6-13%	
	PDT-3	Implement Market Price Public Parking (On-Street)			2.8-5.5%	
	PDT-4	Require Residential Area Parking Permits		PDT-1, 2 & 3	NA	

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Trip Reduction Programs	TRT-1	Implement Voluntary CTR Programs			1.0-6.2%	Commute VMT
	TRT-2	Implement Mandatory CTR Programs – Required Implementation/Monitoring			4.2-21.0%	Commute VMT
	TRT-3	Provide Ride-Sharing Programs			1-15%	Commute VMT
	TRT-4	Implement Subsidized or Discounted Transit Prog.			0.3-20.0%	Commute VMT
	TRT-5	Provide End of Trip Facilities		TRT-1, 2 & 3	NA	
	TRT-6	Telecommuting and Alternative Work Schedules			0.07-5.50%	Commute VMT
	TRT-7	Implement Commute Trip Reduction Marketing			0.8-4.0%	Commute VMT
	TRT-8	Implement Preferential Parking Permit Program		TRT-1, 2 & 3	NA	
	TRT-9	Implement Car-Sharing Program			0.4-0.7%	VMT
	TRT-10	Implement School Pool Program			7.2-15.8%	School VMT
	TRT-11	Provide Employer-Sponsored Vanpool/Shuttle			0.3-13.4%	Commute VMT
	TRT-12	Implement Bike-Sharing Program		SDT-5, LUT-9	NA	
	TRT-13	Implement School Bus Program			38-63%	School VMT
	TRT-14	Price Workplace Parking			0.1-19.7%	Commute VMT
	TRT-15	Implement Employee Parking "Cash-Out"			0.6-7.7%	Commute VMT

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Transit System Improvements	TST-1	Provide a Bus Rapid Transit System			0.02-3.2%	VMT
	TST-2	Implement Transit Access Improvements		TST-3, TST-4	NA	
	TST-3	Expand Transit Network			0.1-8.2%	VMT
	TST-4	Increase Transit Service Frequency/Speed			0.02-2.5%	VMT
	TST-5	Provide Bike Parking Near Transit		TST-3, TST-4	NA	
	TST-6	Provide Local Shuttles		TST-3, TST-4	NA	
Road Pricing / Management	RPT-1	Implement Area or Cordon Pricing			7.9-22.0%	VMT
	RPT-2	Improve Traffic Flow			0-45%	VMT
	RPT-3	Require Project Contributions to Transportation Infrastructure Improvement Projects		RPT-2, TST-1 to 6	NA	
	RPT-4	Install Park-and-Ride Lots		RPT-1, TRT-11, TRT-3, TST-1 to 6	NA	
Vehicles	VT-1	Electrify Loading Docks and/or Require Idling-Reduction Systems			26-71%	Truck Idling Time
	VT-2	Utilize Alternative Fueled Vehicles			Varies	
	VT-3	Utilize Electric or Hybrid Vehicles			0.4-20.3%	Fuel Use

Table 6-3: Water Category

Water						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Water Supply	WSW-1	Use Reclaimed Water			up to 40% for Northern Californiaup to 81% for Southern California	Outdoor Water Use
	WSW-2	Use Gray Water			0-100%	Outdoor Water Use
	WSW-3	Use Locally-Sourced Water Supply			0-60% for Northern and Central California; 11-75% for Southern California	Indoor and Outdoor Water Use
Water Use	WUW-1	Install Low-Flow Water Fixtures.			Residential: 20% Non-Residential: 17-31%	Indoor Water Use
	WUW-2	Adopt a Water Conservation Strategy.			varies	
	WUW-3	Design Water-Efficient Landscapes			0-70%	Outdoor Water Use
	WUW-4	Use Water-Efficient Landscape Irrigation Systems			6.1%	Outdoor Water Use
	WUW-5	Reduce Turf in Landscapes and Lawns			varies	
	WUW-6	Plant Native or Drought-Resistant Trees and Vegetation			BMP	

Table 6-4: Area Landscaping

Area Landscaping						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Area Landscaping	A-1	Prohibit Gas Powered Landscape Equipment.			LADWP: 2.5-46.5% PG&E: 64.1-80.3% SCE: 49.5-72.0% SDGE: 38.5-66.3% SMUD: 56.3-76.0%	Fuel Use
	A-2	Implement Lawnmower Exchange Program			BMP	
	A-3	Electric Yard Equipment Compatibility		A-1 or A-2	BMP	

Table 6-5: Solid Waste Category

Solid Waste						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Solid Waste	SW-1	Institute or Extend Recycling and Composting Services			BMP	
	SW-2	Recycle Demolished Construction Material			BMP	

Table 6-6: Vegetation Category

Vegetation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Vegetation	V-1	Urban Tree Planting		GP-4	varies	
	V-2	Create new vegetated open space.			varies	

Table 6-7: Construction Category

Construction						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Construction	C-1	Use Alternative Fuels for Construction Equipment			0-22%	Fuel Use
	C-2	Use Electric and Hybrid Construction Equipment			2.5-80%	Fuel Use
	C-3	Limit Construction Equipment Idling beyond Regulation Requirements			varies	
	C-4	Institute a Heavy-Duty Off-Road Vehicle Plan		Any C	BMP	
	C-5	Implement a Vehicle Inventory Tracking System		Any C	BMP	

Table 6-8: Miscellaneous Category

Miscellaneous						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Miscellaneous	Misc-1	Establish a Carbon Sequestration Project			varies	
	Misc-2	Establish Off-Site Mitigation			varies	
	Misc-3	Use Local and Sustainable Building Materials	x		BMP	
	Misc-4	Require Best Management Practices in Agriculture and Animal Operations	x		BMP	
	Misc-5	Require Environmentally Responsible Purchasing	x		BMP	
	Misc-6	Implement an Innovative Strategy for GHG Mitigation	x		BMP	

Table 6-9: General Plans

General Plan Strategies						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
General Plans	GP-1	Fund Incentives for Energy Efficiency	x		BMP	
	GP-2	Establish a Local Farmer's Market	x		BMP	
	GP-3	Establish Community Gardens	x		BMP	
	GP-4	Plant Urban Shade Trees	x	V-1	BMP	
	GP-5	Implement Strategies to Reduce Urban Heat-Island Effect	x		BMP	

Applicability of Quantification Fact Sheets Outside of California
In order to apply the quantification methods in this Report to projects located outside of California, the assumptions and methods in the baseline methodology and in the Fact Sheets should be reviewed prior to applying them. First, evaluate the basis for use metrics and emission factors for applicability outside of California. The Report references various sources for use metrics and emission factors; if these are California-specific, the method should be evaluated to determine if these same use metrics and emission factors are applicable to the project area. If they are not applicable, factors appropriate for the project area should be substituted in the baseline and project methods. Key factors to consider are climate zone[6], precipitation, building standards, end-user behavior, and transportation environment (land use and transportation characteristics). Use metrics likely to vary outside of California include:

- Building Energy Use
- Water Use
- Vehicle Trip Lengths and Vehicle Miles Traveled
- Building Standards
- Waste Disposal Rates
- Landscape Equipment Annual Usage

Emission factors relate the use metric to carbon intensity to estimate GHG emissions. Depending on the type of emission factor, these values may or may not change based on location. For instance, the emission factor for combustion of a specific amount of fuel does not typically change; however the engine mix may change by location, and fuel use by those engines may be different. Other emission factors are regionally dependent and alternative sources should be investigated. Emission factors likely to vary outside of California include:

- Electricity associated with water and wastewater supply and treatment
- Carbon intensity of electricity supplied
- Fleet and model year distribution of vehicles which influences emission factors

The user should be able to adjust the methodologies to: (1) calculate the baseline for a given mitigation measure; and then (2) incorporate the appropriate data and assumptions into the calculations for the emission mitigation associated with the measure.

There is at least one mitigation measure that will not be applicable outside of California unless adjustments are made by substituting location-specific factors in the baseline methodology: the improvement beyond Title 24 (BE-1) is not applicable outside of California since buildings outside California would be subject to different building codes. The project Applicant may be able to estimate a baseline energy use for building envelope systems under other building standards and estimate the change in energy use for improvements to building envelope systems using building energy software or literature surveys.

[6] Climate zones are specific geographic areas of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) within California.

How to Use a Fact Sheet to Quantify a Project

This section provides step-by-step instructions and an example regarding how a fact sheet can be used. After choosing the appropriate fact sheet(s), follow these general steps. Steps may need to be adjusted for different types of fact sheets.

Step 1: Does this fact sheet apply?
Carefully read the measure's description and applicability to ensure that you are using the correct fact sheet.

Step 2: Is the measure "grouped"?
Check Tables 6-1 to 6-9 to see if the measure is "grouped" with other measures. If it is, then all measures in the group must be implemented together.

Step 3: Review defaults
Review the default assumptions in the fact sheet.

Step 4: Data inputs
Determine the type of data and data sources necessary. Refer to Appendix B and other suggested documents.

Step 5: Calculate baseline emissions
Calculate baseline emissions using formulas provided in the fact sheet.

Step 6: Percent reductions
If applicable, calculate the percent reduction for the specific action in the measure.

Step 7: Quantify reductions
Quantify emission reductions for a particular mitigation measure using the provided formula.

Step 8: Grouped measures
If you are using a mitigation measure that is grouped with another measure, refer to Tables 6-1 to 6-9 and complete the calculations for all measures that are grouped together for a particular mitigation strategy.

Step 9: Multiple measures
See Chapter 6 for how to combine reductions from multiple measures.

IMPORTANT: Clearly document information such as data sources, data used, and calculations.

Example:

The following is an example calculation for a building project that will use Fact Sheet 2.1.1 - *Exceed Title 24 Building Envelope Energy Efficiency Standards by X%*. In this example, a large office building is being built, and it will be designed to do 10% more than Title 24 standards for both electricity and natural gas.

- **Step 1 – Does this fact sheet apply?**
  The project and fact sheet have been reviewed, and YES, this fact sheet is appropriate to use to estimate reductions from the project.

- **Step 2 - Is the measure "grouped"?**
  NO, this is a measure that does not have to be done with other measures.

- **Step 3 – Review defaults**
  Default assumptions and emission factors have been reviewed and used, as appropriate.

- **Steps 4 – Data inputs**
  The table below shows the data needed for the example, the sample data input, and the source of the sample data. Make sure the data use the units specified in the equation. *

Data for Fact Sheet 2.1.1 Example

Data Needed	Input	Source of Data
Project type	Commercial land use = Large Office	User Input
Size	100,000 sq. ft	User Input
Climate Zone	1	From Figure BE 1.1
Electricity Intensity$_{baseline}$	8.32 kWh/SF/yr	From Fact Sheet 2.1.1
Utility Provider	PG&E	User Input
Emission Factor$_{Electricity}$	2.08E-4 MT CO_2e/kWh	Fact Sheet 2.1.1
Natural Gas Intensity$_{baseline}$	18.16 kBTU/SF/yr	From Fact Sheet 2.1.1
Emission Factor$_{NaturalGas}$	5.32E-5 MT CO_2e/therm	From Fact Sheet 2.1.1
% Reduction Commitment	10% over 2008 Title 24 Standards	User Input

- **Step 5 – Calculate baseline emissions**
  Once all necessary information has been obtained, use the equation provided to determine the baseline emissions. Round results to the nearest MT.

⇨ GHG Emissions Baseline$_{Electicity}$ = Electricity Intensity$_{Baseline}$ x Size x Emission Factor$_{Electricity}$

= 8.32 kWh/SF/yr x 100,000 SF x (2.08E-4 MT CO_2e/kWh)
= **173 MT CO_2e/yr [Baseline GHG Emissions for Electricity]**

⇨ GHG Emissions Baseline$_{Natural\ Gas}$ = Natural Gas Intensity$_{Baseline}$ x Size x Emission Factor$_{NaturalGas}$

= 18.16 kBTU/SF/yr x 100,000 SF x (5.32E-5 MT CO_2e/kBTU)
= **97 MT CO_2e/yr [Baseline GHG Emissions for Natural Gas]**

⇨ GHG Emissions$_{Baseline}$ = GHG Emissions Baseline$_{Electricity}$ + GHG Emissions Baseline$_{Natural\ Gas}$

= 173 MT CO_2e/yr + 97 MT CO_2e/yr
= 270 MT CO_2e/yr

- **Step 6 – Percent reductions**

Now calculate the percent GHG emission reduction based on the stated improvement goal. In this example the goal is a 10% reduction over Title 24 Energy Efficiency Standards. See Table BE-1.1 for data used for this step.

- $\text{Reduction}_{\text{Electricity}}$ from 1% over 2008 Title 24 Standards = 0.20%
  $\text{Reduction}_{\text{NaturalGas}}$ from 1% over 2008 Title 24 Standards = 1.00%

  From Table BE-1.1

- Multiply the Percent Factor from Table BE-1.1 by the Percent Reduction Commitment (10% for this example)

Reduction in GHG emissions from electricity generation:

= 0.20% x 10
= 2%

Reduction Percentage X 10% goal

Reduction in GHG emissions from natural gas combustion:

= 1% x 10
= 10%

Reduction Percentage X 10% goal

- **Step 7 – Quantify reductions**
  Using the percent reductions, the emission reductions can be calculated, as shown below.

- Total Building GHG emissions = GHG Emissions $\text{Baseline}_{\text{Electricity.}}$ x ($\text{Reduction}_{\text{Electricity}}$)
  + GHG Emissions $\text{Baseline}_{\text{NaturalGas}}$x ($\text{Reduction}_{\text{NaturalGas}}$)

= 173 MT CO_2e/yr x $\left(\frac{100\%-2\%}{100}\right)$ + 97 MT CO_2e/yr x $\left(\frac{100\%-10\%}{100}\right)$
= **257 MT CO_2e/yr**

Net reductions are the difference between the baseline emissions and the emissions calculated above for what will occur with this strategy implemented.

- Net reductions = Baseline – Total Building GHG Emissions

= 270 MT CO_2e/yr - 257 MT CO_2e/yr
= **13 MT CO_2e/yr**

This shows that a 10% improvement in energy consumption over 2008 Title 24 Standards from electricity and natural gas will result in a GHG reduction of 13 MT CO_2e/yr.

- **Step 8 – Grouped measures**
  In this example, the measure is not grouped. For grouped measures, refer to Tables 6-1 to 6-9 in Chapter 6 for how to combine reductions.

- **Step 9 – Multiple measures**
  See "Rules for Combining Strategies or Measures" section in Chapter 6 for how to add reductions from multiple measures

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1.0 Introduction

Chapter 7 is made up of a series of Fact Sheets. Each sheet summarizes the quantification methodology for a specific mitigation measure. As described in Chapter 6, the measures are grouped into Categories, and, in some cases, into subcategories. For information about the development of the Fact Sheets, please see Chapter 4. For a discussion of specific quantification issues in select measure categories or subcategories, please refer to Chapter 5. Chapter 6 provides a detailed explanation of the organization and layout of the Fact Sheets, including rules that govern the quantification of measures that have been, or will be, implemented in combination.

In order to facilitate navigation through, and the use of, the Fact Sheets, they have been color coded to reflect the Category the measure is in, and if applicable, the subcategory. The color scheme is shown in Charts 6-1 and 6-2, and also in Table 7-1 (below).

The colored bar at the top of each Fact Sheet corresponds to the Category color as shown in Charts 6-1 and 6-2, and in Table 7-1; the Category name is shown in the colored bar at the left hand margin. The second colored bar, immediately below the first one, shows the name of the subcategory, if any, and corresponds to subcategory color in those charts and tables. The subcategory name appears at the right hand margin.

At the left hand margin, below the Category name, is a cross-reference to the corresponding measure in the previous two CAPCOA reports (*CEQA and GHG*; and *Model Polices for GHG in General Plans*). The term "MP#" refers to a measure in the Model Policies document. The term CEQA# refers to a measure in the CEQA and GHG report.

At the bottom of the page is a colored bar that corresponds to the Category, and, where applicable, there is a colored box at the right hand margin, contiguous with the colored bar. This color of the box corresponds to the subcategory, where applicable. The box contains the measure number.

The layout of information in each Fact Sheet is covered in detail in Chapter 6.

Table 7-1, below, provides an index and cross-reference for the measure Fact Sheets. It is color-coded, as explained above, and may be used as a key to more quickly and easily navigate through the Fact Sheets

Table 7-1: Measure Index & Cross Reference

Section	Category	Page #	Measure #	BMP	MP #	CEQA #
2.0	**Energy**	**85**				
2.1	Building Energy Use	85				
2.1.1	Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%	85	BE-1		EE-2	MM-E6
2.1.2	Install Programmable Thermostat Timers	99	BE-2	x	EE-2	-
2.1.3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	101	BE-3	x	EE-2	-
2.1.4	Install Energy Efficient Appliances	103	BE-4		EE-2.1.6	MM E-19
2.1.5	Install Energy Efficient Boilers	111	BE-5		-	-
2.2	Lighting	115				
2.2.1	Install Higher Efficacy Public Street and Area Lighting	115	LE-1		EE-2.1.5	-
2.2.2	Limit Outdoor Lighting Requirements	119	LE-2	x	EE-2.3	
2.2.3	Replace Traffic Lights with LED Traffic Lights	122	LE-3		EE-2.1.5	-
2.3	Alternative Energy Generation	125				
2.3.1	Establish Onsite Renewable Energy Systems-Generic	125	AE-1		AE-2.1	MM E-5
2.3.2	Establish Onsite Renewable Energy Systems-Solar Power	128	AE-2		AE-2.1	MM E-5
2.3.3	Establish Onsite Renewable Energy Systems-Wind Power	132	AE-3		AE-2.1	MM E-5
2.3.4	Utilize a Combined Heat and Power System	135	AE-4		AE-2	-
2.3.5	Establish Methane Recovery in Landfills	143	AE-5		WRD-1	-
2.3.6	Establish Methane Recovery in Wastewater Treatment Plants	149	AE-6			
3.0	**Transportation**	**155**				
3.1	Land Use/Location	155				
3.1.1	Increase Density	155	LUT-1		LU-1.5 & LU-2.1.8	MM D-1 & D-4
3.1.2	Increase Location Efficiency	159	LUT-2		LU-3.3	-
3.1.3	Increase Diversity of Urban and Suburban Developments (Mixed Use)	162	LUT-3		LU-2	MM D-9 & D-4
3.1.4	Increase Destination Accessibility	167	LUT-4		LU-2.1.4	MM D-3
3.1.5	Increase Transit Accessibility	171	LUT-5		LU-1,LU-4	MM D-2
3.1.6	Integrate Affordable and Below Market Rate Housing	176	LUT-6		LU-2.1.8	MM D-7
3.1.7	Orient Project Toward Non-Auto Corridor	179	LUT-7		LU-4.2	LUT-3
3.1.8	Locate Project near Bike Path/Bike Lane	181	LUT-8		-	LUT-4
3.1.9	Improve Design of Development	182	LUT-9		-	-
3.2	Neighborhood/Site Enhancements	186				
3.2.1	Provide Pedestrian Network Improvements	186	SDT-1		LU-4	MM-T-6
3.2.2	Provide Traffic Calming Measures	190	SDT-2		LU-1.6	MM-T-8
3.2.3	Implement a Neighborhood Electric Vehicle (NEV) Network	194	SDT-3		TR-6	MM-D-6
3.2.4	Create Urban Non-Motorized Zones	198	SDT-4		LU-3.2.1 & 4.1.4	SDT-1
3.2.5	Incorporate Bike Lane Street Design (on-site)	200	SDT-5		TR-4.1	LUT-9
3.2.6	Provide Bike Parking in Non-Residential Projects	202	SDT-6		TR-4.1	MM T-1
3.2.7	Provide Bike Parking with Multi-Unit Residential Projects	204	SDT-7		TR-4.1.2	MM T-3
3.2.8	Provide Electric Vehicle Parking	205	SDT-8		TR-5.4	MM T-17 & E-11
3.2.9	Dedicate Land for Bike Trails	206	SDT-9		TR-4.1	LUT-9
3.3	Parking Policy/Pricing	207				
3.3.1	Limit Parking Supply	207	PDT-1		LU-1.7 & LU-2.1.1.4	-
3.3.2	Unbundle Parking Costs from Property Cost	210	PDT-2		LU-1.7	-
3.3.3	Implement Market Price Public Parking (On-Street)	213	PDT-3		-	-
3.3.4	Require Residential Area Parking Permits	217	PDT-4		-	PDT-1, PDT-2, PDT-3

Section	Category	Page #	Measure #	BMP	MP #	CEQA #
5.0	**Area Landscaping**	**384**				
5.1	Landscaping Equipment	384				
5.1.1	Prohibit Gas Powered Landscape Equipment.	384	A-1		-	-
5.1.2	Implement Lawnmower Exchange Program	389	A-2	x	EE-4.2	MM D-13
5.1.3	Electric Yard Equipment Compatibility	391	A-3	x	MO-2.4	A-1 or A-2; MM D-14
6.0	**Solid Waste**	**392**				
6.1	Solid Waste	392				
6.1.1	Institute or Extend Recycling and Composting Services	401	SW-1	x	WRD-2	MM D-14
6.1.2	Recycle Demolished Construction Material	402	SW-2	x	WRD-2.3	MM C-4
7.0	**Vegetation**	**402**				
7.1	Vegetation	402				
7.1.1	Urban Tree Planting	402	V-1		COS-3.3, COS 3.2	GP-4, MM T-14
7.1.2	Create New Vegetated Open Space	406	V-2		COS-4.1	-
8.0	**Construction**	**410**				
8.1	Construction	410				
8.1.1	Use Alternative Fuels for Construction Equipment	410	C-1		TR-6, EE-1	MM C-2
8.1.2	Use Electric and Hybrid Construction Equipment	420	C-2		TR-6, EE-1	-
8.1.3	Limit Construction Equipment Idling beyond Regulation Requirements	428	C-3		TR-6.2	-
8.1.4	Institute a Heavy-Duty Off-Road Vehicle Plan	431	C-4	x	TR-6.2, EE-1	Any C
8.1.5	Implement a Construction Vehicle Inventory Tracking System	432	C-5	x	-	-
9.0	**Miscellaneous**	**433**				
9.1	Miscellaneous	433				
9.1.1	Establish a Carbon Sequestration Project	433	Misc-1		LU-5	-
9.1.2	Establish Off-Site Mitigation	435	Misc-2		-	-
9.1.3	Use Local and Sustainable Building Materials	437	Misc-3	x	EE-1	MM C-3, E-17
9.1.4	Require Best Management Practices in Agriculture and Animal Operations	439	Misc-4	x	-	-
9.1.5	Require Environmentally Responsible Purchasing	440	Misc-5	x	MO-6.1	-
9.1.6	Implement an Innovative Strategy for GHG Mitigation	442	Misc-6	x	-	-
10.0	**General Plans**	**444**				
10.1	General Plans	444				
10.1.1	Fund Incentives for Energy Efficiency	444	GP-1	x	-	-
10.1.2	Establish a Local Farmer's Market	446	GP-2	x	LU-2.1.4	MM D-18
10.1.3	Establish Community Gardens	448	GP-3	x	LU-2.1.4	MM D-19
10.1.4	Plant Urban Shade Trees	450	GP-4	x	COS-3.2	V-1, MM T-14
10.1.5	Implement Strategies to Reduce Urban Heat-Island Effect	455	GP-5	x	LU-6.1	MM E-8, E-12

2.0 Energy

2.1 Building Energy Use

To determine overall reductions, the ratio of building energy associated GHG emissions to the other project categories needs to be determined. This percent contribution to the total is multiplied by the percentage reduction.

2.1.1 Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%[1]

(X is equal to the percentage improvement selected by Applicant such as 5%, 10%, or 20%)

Range of Effectiveness:

For a 10% improvement beyond Title 24 the range of effectiveness is:

	Electricity	Natural Gas
Non-residential	0.2 – 5.5%	0.7 – 10%
Residential	0.3 – 2.6%	7.5 – 9.1%

This is dependent on building type and climate zones.

Measure Description:

Greenhouse gases (GHGs) are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, and ventilation[2]. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

[1] Compliance with Title 24 is determined from the total daily valuation (TDV) of energy use in the built-environment (on a per square foot per year basis). TDV energy use is a parameter that reflects the burden that a building imposes on an electricity supply system. In general, there is a larger electricity demand and, hence, stress on the supply system during the day (peak times) than at night (off peak). Since a TDV analysis requires significant knowledge about the actual building which is not typically available during the CEQA process, the estimate of the energy and GHG savings from an improvement over Title 24 energy use from a TDV basis is proportional to the actual energy use.

[2] Hardwired lighting is part of Title 24 part 6. However, it is not part of the building envelope energy use and therefore not considered as part of this mitigation measure.

BE-1 Building Energy

The energy use of a building is dependent on the building type, size and climate zone it is located in.

The *California Commercial Energy Use Survey* (CEUS) and *Residential Appliance Saturation Survey* (RASS) datasets can be used for these calculations since the data is scalable size and available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. The California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end user can be used to account for reductions in electricity and natural gas use due to updates to Title 24. Since energy use for each different system type (i.e., heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will also easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Measure Applicability:

- Electricity and natural gas use in residential and commercial buildings subject to California's Title 24 building requirements.
- This measure is part of a grouped measure. To ensure the measure effectiveness, this measure also requires third-party HVAC commissioning and verification of energy savings such as including the results from an alternative compliance model indicating the energy savings.

Inputs:

The following information needs to be provided by the Project Applicant:

- Square footage of non-residential buildings
- Number of dwelling units
- Building/Housing Type
- Climate Zone[3]
- Total electricity demand (KWh) per dwelling unit or per square feet
- % reduction commitment (over 2008 Title 24 standards)

Baseline Method:

The baseline GHG emissions from electricity and natural gas usage (reflecting 2008 Title 24 standards with no energy-efficient appliances) are calculated as follows:

[3] See Figure BE-1.1.

$$\text{GHG Emissions Baseline}_{Electricity} = \text{Electricity Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{Electricity}$$

$$\text{GHG Emissions Baseline}_{NaturalGas} = \text{Natural Gas Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{NaturalGas}$$

Where:

Electricity $\text{Intensity}_{baseline}$ = Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)[4]

Natural Gas $\text{Intensity}_{baseline}$ = Total natural gas demand (kBTU or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)[5]

Emission $\text{Factor}_{Electricity}$ = Carbon intensity of local utility (CO_2e/kWh)[6]

Emission $\text{Factor}_{NaturalGas}$ = Carbon intensity of natural gas use (CO_2e/kBTU or CO_2e/therm)[7]

Size = Number of dwelling units or square footage of commercial land uses

Mitigation Method:

$$\text{GHG reduction \%}_{Mitigated\_Electricity} = \text{Reduction}_{Electricity} \times \text{Reduction Commitment}$$

$$\text{GHG reduction \%}_{Mitigated\_NaturalGas} = \text{Reduction}_{NaturalGas} \times \text{Reduction Commitment}$$

Where:

Reduction = Applicable reduction based on climate zone, building type, and energy type from Tables BE-1.1 and BE-1.2

Reduction Commitment = Project's reduction commitment beyond 2008 Title 24 standards (expressed as a whole number)

This should be done for each individual building type. If the project involves multiple building types or only a percentage of buildings will have reductions the total for all buildings needs to be determined. This percentage should be applied as follows and summed over all buildings types:

[4] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[5] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[6] Ibid.
[7] Ibid.

$$\sum_i (Reduction \times Commitment)\left(\frac{buildingGHG_i}{TotalGHG_i}\right)(\%BuildingType)$$

$buildingGHG_i$	=	GHG emissions for specific building type for either electricity or natural gas
$TotalGHG_i$	=	Total GHG emissions for all buildings for either electricity or natural gas
i	=	electricity or natural gas
%BuildingType	=	portion of building(s) of this type

Tables BE-1.1 and BE-1.2 tabulate the percent reductions from building energy use for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. There is a column for electricity reductions and another for natural gas reductions.

Assumptions:

See Figure BE-1.1 below for a map showing the 16 Climate Zones. Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:

Climate Zone 9 should be used for Climate Zone 11.
Climate Zone 9 should be used for Climate Zone 12.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

For residential building types:

Climate Zone 2 should be used for Climate Zone 6.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

- CEC. 2009. Residential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/residential_manual.html
- CEC. 2009. Nonresidential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/nonresidential_manual.html
- CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

- CEC. 2006. Commercial End-Use Survey. Available online at: http://www.energy.ca.gov/ceus/

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-1.1 and BE-1.2 for climate zone and land use specific percentages]

This information uses 2008 Title 24 information. To adjust to 2005 Title 24, see Table BE-1.3.

Pollutant	Category Emissions Reductions
CO_2e	See Tables BE-1.1 and BE-1.2 for percentage reductions for every 1% improvement over 2008 Title 24.
PM	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
CO	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
SO_2	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
NOx	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.

Discussion:

If the applicant selects to commit beyond requirements for 2008 Title 24 standards, the applicant would reduce the amount of GHG emissions associated with electricity generation and natural gas combustion.

Example:

Commercial land use = Large Office

Square footage = 100,000 sq. ft.

Climate Zone = 1

Utility Provider = PG&E

% Reduction Commitment = 10% over 2008 Title 24 Standards

Electricity $Intensity_{baseline}$ = 8.32 kWh/SF/yr (adjusted to reflect 2008 Title 24 standards)

Emission $Factor_{Electricity}$ = 2.08E-4 MT CO_2e/kWh

Electricity $Emissions_{baseline}$ = 8.32 kWh/SF/yr x 100,000 SF x (2.08E-4 MT CO_2e/kWh)
= 173 MT CO_2e/yr

Natural Gas $Intensity_{baseline}$ = 18.16 kBTU/SF/yr (adjusted to reflect 2008 Title 24 standards)

Emission $Factor_{NaturalGas}$ = 5.32E-5 MT CO_2e/therm

Natural Gas $Emissions_{baseline}$= 18.16 kBTU/SF/yr x 100,000 SF x (5.32E-5 MT CO_2e/kBTU)
= 97 MT CO_2e/yr

GHG $emissions_{baseline}$ = 173 MT CO_2e/yr + 97 MT CO_2e/yr
= 270 MT CO_2e/yr

From Table BE-1.1:

$Reduction_{Electricity}$ from 1% over 2008 Title 24 Standards = 0.20%
$Reduction_{NaturalGas}$ from 1% over 2008 Title 24 Standards = 1.00%

Reduction in GHG emissions from electricity generation: 0.20% x 10 = 2%
Reduction in GHG emissions from natural gas combustion: 1% x 10 = 10%
Mitigated Building GHG emissions = 173 MT CO_2e/yr x (100% - 2%) + 97 MT CO_2e/yr x (100% - 10%) = 257 CO_2e/yr

Preferred Literature:

GHG reductions from a percent improvement over Title 24 can be quantified by calculating baseline energy usage using methodologies based on the California Energy Commission (CEC)'s Residential Appliance Saturation Survey (RASS) and Commercial End-Use Survey (CEUS), or an applicable Alternative Calculation Method (ACM). RASS and CEUS data are based on CEC Forecasting Climate Zones (FCZs); therefore, differences in project energy usage due to different climates are accounted for. The percent improvement is applied to Title 24 built environment energy uses, and overall GHG emissions are calculated using local utility emission factors. This methodology allows the Project Applicant flexibility in choosing which specific measures it will pursue to achieve the percent reductions (for example, installing higher quality building insulation, or installing a more efficient water heating system), while still making the mitigation commitment at the time of California Environmental Quality Act (CEQA) analysis.

Alternative Literature:

Alternatively, a Project Applicant could use the "prescriptive package" approach to demonstrate compliance with Title 24. Using this approach, the Project Applicant would commit to specific design elements above Title 24 prescriptive package requirements at the time of CEQA analysis, such as using solar water heating or improved insulation. Rather than calculating an overall percent reduction in GHG emissions based on an overall baseline value as presented above, the prescriptive approach requires the Project Applicant to break down building energy use by end-use. The Project Applicant would need to provide substantial evidence supporting the GHG reductions attributable to mitigation measures for each end-use. There are several references for quantifying GHG reductions from prescriptive measures. One example of a prescriptive measure is installing tankless or on-demand water heaters. These systems use a gas burner or electric element to heat water as needed and therefore do not use energy to store heated water. According to the U.S. Department of Energy (USDOE), typical tankless water heaters can be 24-34% more energy efficient than conventional storage tank water heaters [1]. Another example of a prescriptive measure is installing geothermal (ground-source or water-source) heat pumps. This measure takes advantage of the fact that the temperature beneath the ground surface is relatively constant. Fluid circulating through underground pipe loops is either heated or cooled and the heat is either upgraded or reduced in the heat pump depending on whether the building requires heating or cooling [2]. United States Environmental Protection Agency (USEPA) reports that ENERGY STAR - qualified geothermal heat pump systems are 30-45% more efficient than conventional heat pumps [3].

Alternative Literature References:

[1] USDOE. Energy Savers: Demand (Tankless or Instantaneous) Water Heaters. Accessed February 2010. Available online at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12820

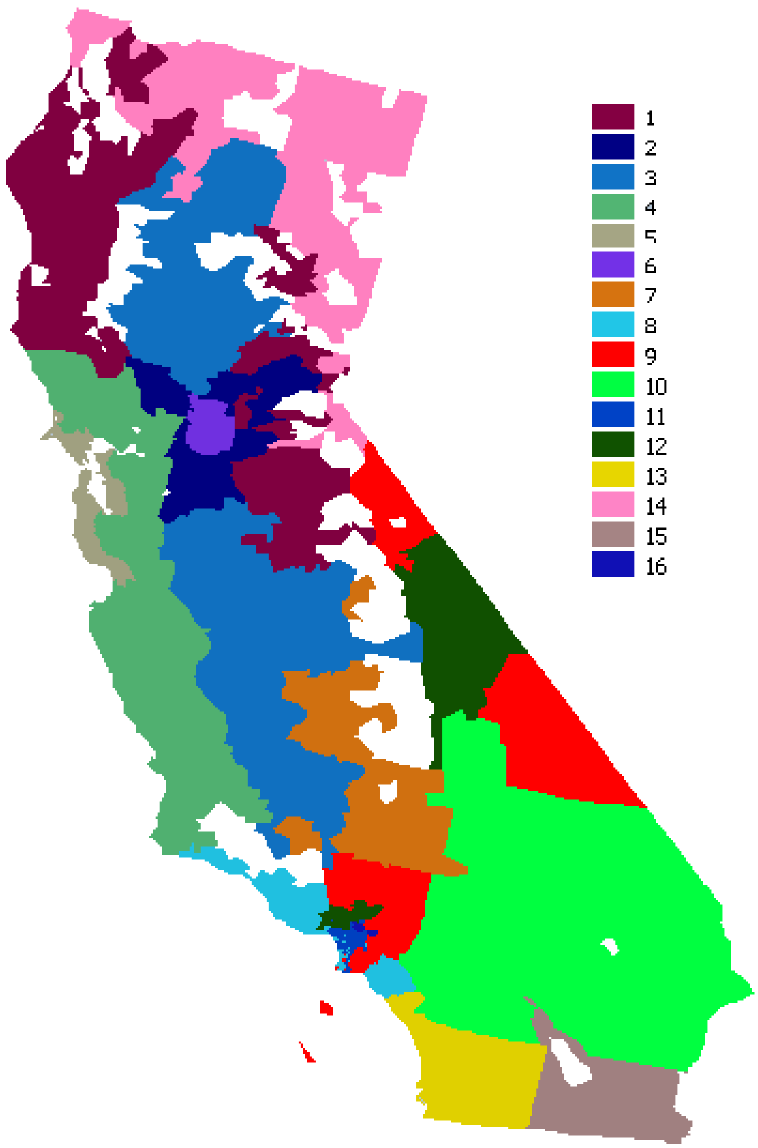
[2] CEC. Consumer Energy Center: Geothermal or Ground Source Heat Pumps. Accessed February 2010. Available online at: http://www.consumerenergycenter.org/home/heating_cooling/geothermal.html

[3] USEPA. ENERGY STAR: Heat Pumps, Geothermal. Accessed February 2010. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=HP

Other Literature Reviewed:

None

Figure BE-1.1
CEC Forecast Climate Zones[8,9]



[8] Adapted from Figure 2 of CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/
[9] White spaces represent national parks and forests.

Table BE-1.1
Non-Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
1	All Commercial	0.22%	0.76%
	All Office	0.36%	1.00%
	All Warehouses	0.02%	0.00%
	College	0.28%	1.00%
	Grocery	0.08%	0.96%
	Health	0.33%	1.00%
	Large Office	0.20%	1.00%
	Lodging	0.30%	1.00%
	Miscellaneous	0.16%	0.91%
	Refrigerated Warehouse	0.02%	0.00%
	Restaurant	0.19%	0.25%
	Retail	0.40%	1.00%
	School	0.26%	0.94%
	Small Office	0.37%	1.00%
	Unrefrigerated Warehouse	0.00%	0.00%
2	All Commercial	0.24%	0.86%
	All Office	0.35%	0.97%
	All Warehouses	0.07%	1.00%
	College	0.45%	1.00%
	Grocery	0.17%	1.00%
	Health	0.35%	0.72%
	Large Office	0.31%	1.00%
	Lodging	0.30%	0.99%
	Miscellaneous	0.22%	1.00%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.22%	0.38%
	Retail	0.36%	0.97%
	School	0.36%	0.96%
	Small Office	0.38%	0.96%
	Unrefrigerated Warehouse	0.12%	1.00%
3	All Commercial	0.26%	0.66%
	All Office	0.32%	0.98%
	All Warehouses	0.03%	0.95%
	College	0.28%	0.94%
	Grocery	0.14%	0.53%
	Health	0.43%	0.82%
	Large Office	0.34%	0.97%
	Lodging	0.55%	0.73%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Miscellaneous	0.25%	0.82%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.26%	0.18%
	Retail	0.29%	0.81%
	School	0.33%	0.93%
	Small Office	0.30%	1.00%
	Unrefrigerated Warehouse	0.13%	0.94%
4	All Commercial	0.27%	0.71%
4	All Office	0.38%	1.00%
4	All Warehouses	0.06%	0.77%
4	College	0.37%	0.87%
4	Grocery	0.12%	0.75%
4	Health	0.45%	0.85%
4	Large Office	0.41%	1.00%
4	Lodging	0.30%	0.90%
4	Miscellaneous	0.20%	0.76%
4	Refrigerated Warehouse	0.02%	0.20%
4	Restaurant	0.18%	0.30%
4	Retail	0.29%	1.00%
4	School	0.32%	0.95%
4	Small Office	0.30%	1.00%
4	Unrefrigerated Warehouse	0.10%	0.98%
5	All Commercial	0.26%	0.72%
5	All Office	0.36%	0.95%
5	All Warehouses	0.06%	0.46%
5	College	0.44%	0.98%
5	Grocery	0.09%	0.67%
5	Health	0.40%	0.84%
5	Large Office	0.37%	0.94%
5	Lodging	0.29%	0.81%
5	Miscellaneous	0.18%	0.73%
5	Refrigerated Warehouse	0.04%	0.29%
5	Restaurant	0.11%	0.25%
5	Retail	0.24%	0.85%
5	School	0.16%	0.91%
5	Small Office	0.29%	1.00%
5	Unrefrigerated Warehouse	0.07%	0.85%
6	All Commercial	0.31%	0.73%
6	All Office	0.38%	0.95%
6	All Warehouses	0.07%	0.86%
6	College	0.43%	0.99%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Grocery	0.16%	0.64%
	Health	0.46%	0.86%
	Large Office	0.39%	0.94%
	Lodging	0.40%	0.86%
	Miscellaneous	0.25%	0.66%
	Refrigerated Warehouse	0.03%	0.58%
	Restaurant	0.24%	0.35%
	Retail	0.31%	0.83%
	School	0.31%	0.96%
	Small Office	0.34%	1.00%
	Unrefrigerated Warehouse	0.09%	1.00%
7	All Commercial	0.25%	0.88%
	All Office	0.32%	0.94%
	All Warehouses	0.02%	0.64%
	College	0.25%	0.99%
	Grocery	0.12%	0.90%
	Health	0.32%	0.93%
	Large Office	0.34%	1.00%
	Lodging	0.41%	0.94%
	Miscellaneous	0.18%	0.99%
	Refrigerated Warehouse	0.02%	0.64%
	Restaurant	0.27%	0.19%
	Retail	0.34%	0.99%
	School	0.29%	0.96%
	Small Office	0.31%	0.91%
	Unrefrigerated Warehouse	0.00%	0.00%
8	All Commercial	0.30%	0.62%
	All Office	0.37%	0.94%
	All Warehouses	0.12%	0.99%
	College	0.43%	0.67%
	Grocery	0.14%	0.50%
	Health	0.45%	0.85%
	Large Office	0.38%	0.94%
	Lodging	0.34%	0.86%
	Miscellaneous	0.22%	0.68%
	Refrigerated Warehouse	0.02%	0.93%
	Restaurant	0.27%	0.31%
	Retail	0.28%	0.49%
	School	0.33%	0.92%
	Small Office	0.33%	0.96%
	Unrefrigerated Warehouse	0.16%	0.99%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
9	All Commercial	0.28%	0.60%
	All Office	0.39%	0.96%
	All Warehouses	0.13%	0.95%
	College	0.33%	0.98%
	Grocery	0.14%	0.46%
	Health	0.44%	0.85%
	Large Office	0.43%	0.98%
	Lodging	0.37%	0.84%
	Miscellaneous	0.23%	0.76%
	Refrigerated Warehouse	0.03%	0.91%
	Restaurant	0.21%	0.19%
	Retail	0.32%	0.71%
	School	0.32%	0.90%
	Small Office	0.31%	0.94%
	Unrefrigerated Warehouse	0.18%	0.96%
10	All Commercial	0.30%	0.61%
	All Office	0.35%	1.00%
	All Warehouses	0.11%	0.58%
	College	0.27%	1.00%
	Grocery	0.19%	0.67%
	Health	0.46%	0.92%
	Large Office	0.34%	1.00%
	Lodging	0.39%	0.92%
	Miscellaneous	0.24%	0.49%
	Refrigerated Warehouse	0.03%	0.07%
	Restaurant	0.29%	0.29%
	Retail	0.36%	0.87%
	School	0.37%	0.80%
	Small Office	0.36%	1.00%
	Unrefrigerated Warehouse	0.15%	0.98%
13	All Commercial	0.29%	0.66%
	All Office	0.38%	0.80%
	All Warehouses	0.19%	0.95%
	College	0.33%	0.86%
	Grocery	0.11%	0.40%
	Health	0.39%	0.88%
	Large Office	0.41%	0.80%
	Lodging	0.40%	0.82%
	Miscellaneous	0.17%	0.39%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Refrigerated Warehouse	0.07%	1.00%
	Restaurant	0.24%	0.21%
	Retail	0.28%	0.53%
	School	0.31%	0.92%
	Small Office	0.32%	0.76%
	Unrefrigerated Warehouse	0.26%	0.93%

Table BE-1.2
Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Housing	Reduction	
		Electricity	Natural Gas
1	Multi	0.24%	0.86%
	Single	0.17%	0.87%
	Townhome	0.22%	0.87%
2	Multi	0.15%	0.89%
	Single	0.14%	0.91%
	Townhome	0.11%	0.89%
3	Multi	0.23%	0.90%
	Single	0.18%	0.91%
	Townhome	0.16%	0.90%
4	Multi	0.12%	0.88%
	Single	0.09%	0.91%
	Townhome	0.09%	0.90%
5	Multi	0.09%	0.88%
	Single	0.04%	0.91%
	Townhome	0.05%	0.90%
7	Multi	0.25%	0.87%
	Single	0.16%	0.88%
	Townhome	0.18%	0.85%
8	Multi	0.09%	0.77%
	Single	0.07%	0.82%
	Townhome	0.07%	0.80%
9	Multi	0.08%	0.77%
	Single	0.11%	0.82%
	Townhome	0.09%	0.80%
10	Multi	0.26%	0.80%
	Single	0.18%	0.83%
	Townhome	0.22%	0.81%

11	Multi	0.05%	0.77%
	Single	0.05%	0.83%
	Townhome	0.03%	0.81%
12	Multi	0.15%	0.75%
	Single	0.15%	0.83%
	Townhome	0.13%	0.80%
13	Multi	0.09%	0.79%
	Single	0.06%	0.83%
	Townhome	0.05%	0.81%

2.1.2 Install Programmable Thermostat Timers

Range of Effectiveness:

Best Management Practice influences building energy use for heating and cooling.

Measure Description:

Programmable thermostat timers allow users to easily control when the HVAC system will heat or cool a certain space, thereby saving energy. Because most commercial buildings already have timed HVAC systems, this mitigation measure focuses on residential programmable thermostats.

The DOE reports [1] that residents can save around 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours[10]. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep. Because of the large variability in individual occupant behavior and because it is unclear whether programmable thermostats systematically reduce energy use, this measure cannot be reasonably quantified. This mitigation measure should be incorporated as a Best Management Practice to allow for educated occupants to have the most efficient means at controlling their heating and cooling energy use. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a reduction in energy use and associated GHG emissions.

Measure Applicability:

- Electricity use in residential dwellings.
- Best Management Practice only.

Assumptions:

Data based upon the following references:

[1] USDOE. Energy Savers: Thermostats and Control Systems. Available online at: http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12720

[10] Such a large drop in thermostat temperatures may not be applicable in parts of California; more applicable may be the raising of the thermostat for airconditioned spaces.

Emission Reduction Ranges and Variables:

This is a best management practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

If substantial evidence was provided, the GHG reductions would equal the percent savings in total electricity or natural gas. The total reduction would be:

GHG reduction = (% thermostat reduce heat/cool energy use) x
(% end use heat/cool of total energy use)

Preferred Literature:

The DOE reports [1] that residents can save approximately 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep.

Alternative Literature:

None

Other Literature Reviewed:

Pacific Northwest National Laboratory. 2007. GridWise Demonstration Project Fast Facts. Available online at: http://gridwise.pnl.gov/docs/pnnl_gridwiseoverview.pdf.

2.1.3 Obtain Third-party HVAC Commissioning and Verification of Energy Savings

Range of Effectiveness:

Not applicable on its own. This measure enhances effectiveness of BE-1.

Measure Description:

Ensuring the proper installation and construction of energy reduction features is essential to achieving high thermal efficiency in a house. In practice, HVAC systems commonly do not operate at the designed efficiency due to errors in installation or adjustments. A Project Applicant can obtain HVAC commissioning and third-party verification of energy savings in thermal efficiency components including HVAC systems, insulation, windows, and water heating.

This measure is required to be grouped with measure "Exceed Title 24 Energy Efficiency Standards by X% (BE-1).

Measure Applicability:

- This measure is part of a grouped measure. This measure also requires third-party HVAC commissioning and verification of energy savings.
- Buildings subject to California's Title 24 building requirements.

Preferred Literature:

While Title 24 requires that a home's ducts be tested for leaks whenever the central air conditioner or furnace is installed or replaced, a third-party verifier such as the California Home Energy Efficiency Rating Service (CHEERS) and ENERGY STAR Home Energy Rating Service (HERS) can ensure that ducts were properly sealed [1-3]. These certified raters can also verify other energy efficiency measures, such as HVAC controls, insulation performance, and the air-tightness of the building envelope. Furthermore, these raters can analyze a home and make climate-specific recommendations for further improving the home's energy efficiency. Since this mitigation measure ensures that the building envelope systems are properly installed and sealed, there is no quantifiable reduction for this measure. It is recommended as a Best Management Practice grouped with the Title 24 improvement mitigation measure.

Alternative Literature:

None

Literature References:

[1] California Home Energy Efficiency Rating Services. What is CHEERS? Available online at: http://www.cheers.org/Home/Overview/tabid/124/Default.aspx. Accessed March 2010.

[2] USEPA. ENERGY STAR: Features of ENERGY STAR Qualified New Homes. Available online at: http://www.energystar.gov/index.cfm?c=new_homes.nh_features. Accessed March 2010.

[3] USEPA. ENERGY STAR: Independent Inspection and Testing. Available online at: http://www.energystar.gov/ia/new_homes/features/HERSrater_062906.pdf. Accessed March 2010.

2.1.4 Install Energy Efficient Appliances

Range of Effectiveness:

Residential 2-4% GHG emissions from electricity use. Grocery Stores: 17-22% of GHG emissions from electricity use.

Measure Description:

Using energy-efficient appliances reduces a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production. To take credit for this mitigation measure, the Project Applicant (or contracted builder) would need to ensure that energy efficient appliances are installed. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, energy-efficient refrigerators have been evaluated for grocery stores. See Mitigation Method section on how project applicant may quantify additional building types and appliances.

The energy use of a building is dependent on the building type, size and climate zone it is located in. The *California Commercial Energy Use Survey* (CEUS) and *Residential Appliance Saturation Survey* (RASS) datasets for this calculation since the data is scalable by size and available for several land use categories in different climate zones in California. Typical reductions for energy-efficient appliances can be found in the *Energy Star and Other Climate Protection Partnerships 2008 Annual Report* or subsequent Annual Reports. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively.

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from the National Renewable Energy Laboratory (NREL) Building American Research Benchmark Definition (BARBD) is used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Measure Applicability:

- Electricity use in residential dwellings and commercial grocery stores.
- This mitigation measure applies only when appliance installation can be specified as part of the Project.

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of dwelling units and/or size of grocery store
- Climate Zone
- Housing Type (if residential)
- Utility provider
- Total natural gas demand (kBTU or therms) per dwelling unit or per square foot
- Types of energy efficient appliances to be installed (refrigerator, dishwasher, or clothes washer for residential land uses and refrigerators for grocery stores)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{Electricity}} + \text{Natural Gas Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{NaturalGas}}$$

Where:

GHG emissions = MT CO_2e (reflecting 2008 Title 24 standards with no energy-efficient appliances)

Electricity Intensity$_{\text{baseline}}$ = Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards[11]

Natural Gas Intensity$_{\text{baseline}}$ = Total natural gas demand (kBTU or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards[12]

Emission Factor$_{\text{Electricity}}$ = Carbon intensity of local utility (CO2e/kWh)[13]

Emission Factor$_{\text{NaturalGas}}$ = Carbon intensity of natural gas use (CO_2e/kBTU or CO_2e/therm)[14]

Size = Number of dwelling units or square footage of commercial land uses

Mitigation Method:

$$\text{GHG emissions}_{\text{mitigated}} = \text{Electricity Emissions}_{\text{baseline}} \times (1-(\text{Sum of Reductions})) +$$

[11] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[12] Ibid
[13] Ibid.
[14] Ibid.

Natural Gas $\text{Emissions}_{\text{baseline}}$

Where:

Electricity $\text{Emissions}_{\text{baseline}}$	=	Emissions due to electricity generation, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Sum of Reductions	=	Applicable reduction based on energy efficient appliances installed (expressed as a decimal)
Natural Gas $\text{Emissions}_{\text{baseline}}$	=	Emissions due to natural gas combustion, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Building GHG reduction Percentage	=	[GHG emissions mitigated/GHG emissions baseline]

Tables BE-4.1 and BE-4.2 tabulate the percent reductions from installing specific ENERGY STAR appliances for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. This will only result in reductions associated with electricity use and does not apply to natural gas since there are no major Energy Star appliances that use natural gas. The energy efficient heating, cooling, and water heating systems that may use natural gas are included in improvements over Title 24 (see measure BE-1).

For other building types and energy efficient appliances, the reductions similar to those in the tables can be quantified as follows:

$$\text{Reduction} = (\text{Appliance End Use \%}) \times (1 - \text{efficiency})$$

Where:

Appliance End Use %	=	portion of energy for this appliance compared to total electricity use
Efficiency	=	percent reduction in energy use for efficient appliance compared to standard.

Assumptions:

Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:
Climate Zone 9 should be used for Climate Zone 11.
Climate Zone 9 should be used for Climate Zone 12.

Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.
For residential building types:
Climate Zone 2 should be used for Climate Zone 6.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

[1] USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at: http://www.epa.gov/cpd/annualreports/annualreports.htm

[2] CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

[3] CEC. 2006. Commercial End-Use Survey. Available online at: http://www.energy.ca.gov/ceus/

[4] NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-4.1 and BE-4.2 for climate zone and land use specific percentages]

If more than one type of appliance is considered the percentage for each appliance should be added together.

Pollutant	Category Emissions Reductions
CO_2e	See Tables BE-4.1 and BE-4.2 for percentage reductions.
PM	Not Quantified[15]
CO	Not Quantified
SO_2	Not Quantified
NOx	Not Quantified

Discussion:

If the applicant commits to installing energy efficient appliances, the applicant would reduce the amount of GHG emissions associated with electricity generation because

[15] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

more energy efficient appliances will require less electricity to run. This reduces GHG emissions from power plants.

Example:

Housing Type = Single Family Home

Number of Dwelling Units = 100

Climate Zone = 1

Utility Provider = PG&E

Energy efficient appliances to be installed = refrigerator and dishwasher

Electricity Intensity$_{baseline}$	=	7,196 kWh/DU/yr (adjusted to reflect 2008 Title 24 standards)
Emission Factor$_{Electricity}$	=	2.08E-4 MT /kWh
Electricity Emissions$_{baseline}$	=	7,196 kWh/DU/yr x 100 DU x (2.08E-4 MT CO_2e/kWh)
	=	150 MT CO_2e/yr
Natural Gas Intensity$_{baseline}$	=	365 therms/DU/yr (adjusted to reflect 2008 Title 24 standards)
Emission Factor$_{NaturalGas}$	=	5.32E-3 MT CO_2e/kBTU
Natural Gas Emissions$_{baseline}$	=	365 therm/DU/yr x 100 DU x (5.32E-3 MT CO_2e/therm)
	=	194 MT CO_2e/yr
GHG emissions$_{baseline}$	=	150 MT CO_2e/yr + 194 MT CO_2e/yr
	=	344 MT CO_2e/yr

Sum of Reductions associated with electricity generation from Table BE-4.2 = 2.05%
Reductions associated with natural gas combustion = 0%

GHG emissions$_{mitigated}$ = 150*(1-.0205) + 194

= 341

Building GHG reduction = 1 - 341 / 344 = 0.9%

Preferred Literature:

The USEPA ENERGY STAR Program has identified energy efficient residential and consumer appliances including air conditioners, refrigerators, freezers, clothes washers, dishwashers, fryers, steamers, and vending machines. The ENERGY STAR Annual Report presents the average percent energy savings from using an ENERGY STAR-qualified appliance instead of a standard appliance. GHG emissions reductions are calculated based on local utility emission factors and the baseline appliance energy use derived from the CEC RASS and CEUS methodologies. RASS and CEUS data are climate-specific; therefore, differences in project energy usage due to different climates are accounted for.

Alternative Literature:

None

Other Literature Reviewed:

None

Table BE-4.1
Non-Residential
Reduction for ENERGY STAR Refrigerators in Grocery Stores

Climate Zone	Electricity Reduction
1	20%
2	17%
3	18%
4	21%
5	22%
6	19%
7	18%
8	19%
9	20%
10	18%
13	21%

Table BE-4.2
Residential
Reduction for ENERGY STAR Appliances

Climate Zone	Housing	Refrigerator[1,3]	Clothes Washer[1,3]	Dishwasher[1,3]	Ceiling Fan[2,3]
		Total Electricity Reduction			
1	Multi	2.59%	0.03%	0.10%	1.01%
	Single	1.72%	0.50%	0.12%	0.58%
	Townhome	2.28%	0.28%	0.11%	0.83%
2	Multi	2.86%	0.03%	0.11%	1.12%
	Single	1.79%	0.53%	0.13%	0.61%
	Townhome	2.61%	0.32%	0.13%	0.96%
3	Multi	2.62%	0.03%	0.10%	1.02%
	Single	1.69%	0.50%	0.12%	0.58%
	Townhome	2.44%	0.30%	0.12%	0.89%
4	Multi	2.97%	0.03%	0.12%	1.16%
	Single	1.90%	0.56%	0.14%	0.65%
	Townhome	2.64%	0.33%	0.13%	0.97%
5	Multi	3.07%	0.03%	0.12%	1.20%
	Single	1.99%	0.58%	0.14%	0.68%
	Townhome	2.78%	0.35%	0.14%	1.02%
7	Multi	2.54%	0.03%	0.10%	0.99%
	Single	1.74%	0.51%	0.12%	0.59%
	Townhome	2.39%	0.30%	0.12%	0.88%
8	Multi	3.08%	0.03%	0.12%	1.20%
	Single	1.94%	0.57%	0.14%	0.66%
	Townhome	2.71%	0.34%	0.14%	0.99%
9	Multi	3.13%	0.03%	0.12%	1.22%
	Single	1.85%	0.54%	0.13%	0.63%
	Townhome	2.65%	0.33%	0.13%	0.97%
10	Multi	2.52%	0.03%	0.10%	0.98%
	Single	1.71%	0.50%	0.12%	0.58%
	Townhome	2.27%	0.28%	0.11%	0.83%
11	Multi	3.21%	0.03%	0.13%	1.25%
	Single	1.97%	0.58%	0.14%	0.67%
	Townhome	2.83%	0.35%	0.14%	1.04%
12	Multi	2.89%	0.03%	0.11%	1.13%
	Single	1.76%	0.51%	0.13%	0.60%
	Townhome	2.53%	0.32%	0.13%	0.93%
13	Multi	3.09%	0.03%	0.12%	1.21%
	Single	1.95%	0.57%	0.14%	0.66%
	Townhome	2.76%	0.34%	0.14%	1.01%

Notes:

1. Percent reductions are based on the saturation values presented in RASS. The Project Applicant may use project-specific saturation values (i.e. if 100% of homes have clothes washers, then saturation = 1).

Notes:

2. CEC's RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category, which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from NREL's BARBD was used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this table, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners.

3. Total electricity reduction is based on installing ENERGY STAR appliances instead of standard appliances. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Abbreviations:

BARBD - Building America Research Benchmark Definition
CEC - California Energy Commission
NREL - National Renewable Energy Laboratory
RASS - Residential Appliance Saturation Survey
USEPA - United States Environmental Protection Agency

Sources:

CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at: http://www.epa.gov/cpd/annualreports/annualreports.htm

2.1.5 Install Energy Efficient Boilers

Range of Effectiveness: 1.2-18.4% of boiler GHG emissions

Measure Description:

Boilers are used in many non-residential and multi-family housing buildings to provide space heating or steam or facility operations. Boilers combust natural gas to produce steam which can be used directly or as a method to heat a building space. Boilers represent 12% of installed building heating equipment for commercial and other buildings. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. Improving boiler efficiency decreases natural gas consumption for the same amount of energy output, thus reducing GHG emissions.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers (≥ 85%) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Measure Applicability:

- Natural Gas Boilers

Inputs:

The following information needs to be provided by the Project Applicant:

- Natural gas consumption of boiler
- Original or baseline efficiency of boiler
- Improved efficiency of boiler

Baseline Method:

$$\text{Emission} = \text{Consumption} \times HC \times EF \times C$$

Where:

Emission = MT CO_2e

Consumption = Natural gas consumption (ft^3)

HC = Natural gas heat content = 1,029 BTU/ft^3 (CCAR 2009)

EF = Natural gas carbon intensity factor = 0.1173 lbs CO_2e/kBTU (CCAR 2009)

C = Unit conversion factor

In this case, C = 4.54×10^{-7} kBTU x MT/BTU/lbs

Mitigation Method:

The GHG emission from a boiler with improved efficiency is:

$$\text{Mitigated GHG Emission} = \text{Consumption} \times \frac{E_O}{E_I} \times HC \times EF \times C$$

Where:

Emission = MT CO_2e

Consumption = Natural gas consumption (ft^3)

E_O = Original efficiency of boiler

E_I = Improved efficiency of boiler

HC = Natural gas heat content = 1,029 BTU/ft^3 (CCAR 2009)

EF = Natural gas carbon intensity factor = 0.1173 lbs CO_2e/kBTU (CCAR 2009)

C = Unit conversion factor

Emission Reduction Ranges and Variables:

Percentage of emissions reduction using a boiler with improved efficiency for all pollutants are the same and is calculated as follows:

$$\text{Reduction} = 1 - \frac{E_O}{E_I}$$

Where:

E_O = Original efficiency of boiler

E_I = Improved efficiency of boiler

Technology	Range of Efficiencies	Range of Emission Reduction
Atmospheric	80 – 84%	-
Fan assisted, non-condensing	85 – 88%	1.2% – 9.1%
Fan assisted, condensing	88 – 98%	4.5% – 18.4%

Discussion:

Boiler efficiency is included in product specification from manufacturer. ENERGY STAR boilers require minimum efficiency of 85%. The Consortium for Energy Efficiency (CEE) reports natural efficiency breakpoints of 85-88% for fan assisted, non-condensing commercial boilers, and 88-98% for fan assisted, condensing boilers.

Assumptions:

Data based upon the following references:

- California Climate Action Registry 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf
- Energy Star. Boilers key Product Criteria. Available at: http://www.energystar.gov/index.cfm?c=boilers.pr_crit_boilers
- Science Applications International Corporation 2009. Prepared for California Climate Action Registry. Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf

Preferred Literature:

Boilers represent 12% of installed building heating equipment. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. The Climate Action Registry (CAR) Boiler Efficiency Projects estimated potential annual CO_2e emission reductions of 22,673,929 and 6,584,231 MT for commercial and residential boilers, respectively, from boiler efficiency improvement from 77% to 83% [1]. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers (≥ 85%) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Alternative Literature:

None

Notes:

[1] Science Applications International Corporation 2009. Prepared for Climate Action Registry (CAR). Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf

[2] Consortium of Energy Efficiency (CEE) Winter Program Meeting 2008. Market Characterization of Commercial Gas Boilers.

[3] CCAR 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

Other Literature Reviewed:

None

2.2 Lighting

2.2.1 Install Higher Efficacy Public Street and Area Lighting

Range of Effectiveness:

16-40% of outdoor lighting

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Public street and area lighting includes streetlights, pedestrian pathway lights, area lighting for parks and parking lots, and outdoor lighting around public buildings. Lighting design should consider the amount of light required for the area intended to be lit. Lumens are the measure of the amount of light perceived by the human eye. Different light fixtures have different efficacies or the amount of lumens produced per watt of power supplied. This is different than efficiency, and it is important that lighting improvements are based on maintaining the appropriate lumens per area when applying this measure. Installing more efficacious lamps will use less electricity while producing the same amount of light, and therefore reduces the associated indirect GHG emissions.

Measure Applicability:

- Public street and area lighting

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of lighting heads (for baseline only)
- Power rating of public street and area lights
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Days} \times \text{Power}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions	=	MT CO_2e/yr
Heads	=	Number of public street and area lighting heads. Provided by Applicant.
Hours	=	Hours of operation per day (12).
Days	=	Days of operation per year (365).
$\text{Power}_{\text{baseline}}$	=	Power rating of public street and area lights (kW).
Utility	=	Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The minimum reduction in annual energy cost associated with higher efficacy street lighting systems is 16%. Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights. For lights operating with a single local utility district, the 16% energy cost reduction is equivalent to a 16% reduction in power rating because the energy cost comparison assumes an equal number of lighting heads and equal operation times. As all other variables remain equal between the baseline and mitigated scenarios, the reduction in GHG emissions is in turn 16%. Therefore, the reduction in GHG emissions associated with installing higher efficacy public street and area lighting is:

$$\text{GHG emission reduction} = \frac{Power_{baseline} - Power_{mitigated}}{Power_{baseline}} = 16\%$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for public street and area lighting.
$Power_{baseline}$	=	Power rating of public street and area lights (kW).
$Power_{mitigated}$	=	Power rating of public street and area lights (kW).

If different types of lampheads result in less heads needing to be installed, the reduction will be as follows:

$$\frac{Head_{baseline} \times Power_{baseline} - Head_{mitigated} \times Power_{mitigated}}{Head_{baseline} \times Power_{baseline}}$$

Where:

$Head_{baseline}$	=	the number of heads in the baseline scenario
$Power_{baseline}$	=	the number of heads in the mitigated scenario

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	16% for installing metal halide post top lights; 35% for installing metal halide cobrahead or cutoff lights; 40% for installing high pressure sodium cutoff lights
All other pollutants	Not Quantified[16]

Discussion:

If the applicant uses public street and area lighting, they would calculate baseline emissions as described in the baseline methodologies section. If the applicant then selects to mitigate public street and area lighting by committing to higher efficacy options, the applicant would reduce the amount of GHG emissions associated with public street and area lighting by 16%.

GHG Emissions Reduced = 16%

Assumptions:

Data based upon the following reference:

[1] New York State Energy Research and Development Authority (NYSERDA). 2002. NYSERDA How-to Guide to Effective Energy-Efficient Street Lighting for Municipal Elected/Appointed Officials.

Preferred Literature:

The New York State Energy Research and Development Authority (NYSERDA)'s 2002 How-to Guide to Effective Energy-Efficient Street Lighting reports a minimum reduction in electricity demand of 16% due to the installation of energy-efficient street lights such as metal halide and high-pressure sodium models (see page 4).

Alternative Literature:

None

Other Literature Reviewed:

[16] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

[2] The University of Rochester. Light-Emitting Diode (LED), Organic Light-Emitting Diode (OLED), and laser research for lighting applications. Homepage available online at: http://www.rochester.edu/research/sciences.html. Accessed February 2010.

[3] Chittenden County Regional Planning Commission. 1996. Outdoor Lighting Manual for Vermont Municipalities.

2.2.2 Limit Outdoor Lighting Requirements

Range of Effectiveness:

Best Management Practice, but may be quantified.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. When the operational hours of a light are reduced, GHG emissions are reduced. Strategies for reducing the operational hours of lights include programming lights in public facilities (parks, swimming pools, or recreational centers) to turn off after-hours, or installing motion sensors on pedestrian pathways. Since literature guidance for quantifying these reductions does not exist, this mitigation measure would be employed as a Best Management Practice. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation of the reduction in operational hours of lights.

Measure Applicability:

- Outdoor lighting
- Best Management Practice unless Project Applicant supplies substantial evidence.

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of outdoor lights
- Power rating of outdoor lights
- Carbon intensity of local utility (for baseline only)
- Limited hours of operation of outdoor lights

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Power}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e/yr

Heads = Number of outdoor lighting heads. Provided by Applicant.

Hours = Annual hours of operation (4,280)[17].

$\text{Power}_{baseline}$ = Power rating of outdoor lights (kW).

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

[17] Estimated based on the annual number of dark hours (hours between sunset and sunrise) for Los Angeles, California.

Mitigation Method:

Limiting the hours of operation of outdoor lights in turn limits the indirect GHG emissions associated with their electricity usage. Therefore, the reduction in GHG emissions associated with limiting outdoor lighting is:

$$\text{GHG emission reduction} = \frac{\text{Hours}_{\text{baseline}} - \text{Hours}_{\text{limited}}}{\text{Hours}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for outdoor lighting.
$\text{Hours}_{\text{baseline}}$	=	Annual hours of operation (4,280).
$\text{Hours}_{\text{limited}}$	=	Limited hours of operation per day. Provided by Applicant.

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

This is a best management practice measure unless the Project Applicant supplies substantial evidence justifying a reduction in hours of operation. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Pollutant	Category Emissions Reductions
CO_2e	0 to 100%
All other pollutants	Not Quantified[18]

Discussion:

If the applicant uses outdoor lighting, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate outdoor lighting by limiting operation to 10 hours per day, the applicant would reduce the amount of GHG emissions associated with outdoor lighting by 20%.

$$\text{GHG Emissions Reduced} = \frac{12 - 10}{10} = 0.20 \text{ or } 20\%$$

Assumptions:

[18] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

None

Preferred Literature:

None

Other Literature Reviewed:

None

2.2.3 Replace Traffic Lights with LED Traffic Lights

Range of Effectiveness:

90% of emissions associated with existing traffic lights.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Installing higher efficiency traffic lights reduces energy demand and associated GHG emissions. As high efficiency light-emitting diodes (LEDs), which consume about 90% less energy than traditional incandescent traffic lights while still providing adequate light or lumens when viewed, are currently required to meet minimum federal efficiency standards for new traffic lights. Project Applicants may take credit only if they are retrofitting existing incandescent traffic lights.

Measure Applicability:

- Traffic lighting – retrofitting incandescent traffic lights

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of incandescent traffic lights being retrofitted
- Power rating of incandescent traffic lights being retrofitted
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Lights} \times \text{Hours} \times \text{Days} \times \text{Power}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e/yr

Lights = Number of incandescent traffic lights being retrofitted. Provided by Applicant.

Hours = Hours of operation per day (24).

Days = Days of operation per year (365).

$\text{Power}_{baseline}$ = Power rating of incandescent traffic lights being retrofitted (kW).

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Traffic lights using LEDs consume about 90% less power than traditional incandescent traffic lights. Therefore, the reduction in GHG emissions associated with replacing incandescent traffic lights with LED-based traffic lights is:

$$\text{GHG emission reduction} = \frac{Power_{baseline} - Power_{mitigated}}{Power_{baseline}} = 90\%$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for traffic lighting.
$Power_{baseline}$ = Power rating of incandescent traffic lights (kW).
$Power_{mitigated}$ = Power rating of LED traffic lights (kW).

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	90%
All other pollutants	Not Quantified[19]

Discussion:

If the applicant uses traffic lights, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate traffic lights by committing to replacing all existing incandescent traffic lights with LED traffic lights, the applicant would reduce the amount of GHG emissions associated with traffic lights in an existing area by 90%.

GHG Emissions Reduced = 90%

Assumptions:

Data based upon the following references:

[1] USDOE. 2004. NREL. State Energy Program Case Studies: California Says "Go" to Energy-Saving Traffic Lights. Available online at: http://www.nrel.gov/docs/fy04osti/35551.pdf

[2] USEPA. ENERGY STAR: Traffic Signals. Available online at: http://www.energystar.gov/index.cfm?c=traffic.pr_traffic_signals. Accessed February 2010.

[19] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Preferred Literature:

NREL reports that traffic lights based on light-emitting diodes (LEDs) consume about 90% less power than traditional incandescent traffic lights. All traffic lights manufactured on or after January 1, 2006 must meet minimum federal efficiency standards, which are consistent with ENERGY STAR specifications for LED traffic lights.

Alternative Literature:

None

Other Literature Reviewed:

[3] The University of Rochester. LED, OLED, and laser research for lighting applications. Homepage available online at: http://www.rochester.edu/research/sciences.html. Accessed February 2010.

2.3 Alternative Energy Generation

2.3.1 Establish Onsite Renewable or Carbon-Neutral Energy Systems-Generic

Range of Effectiveness:

0-100% of emissions associated with electricity use. Note some systems could increase energy use.

Measure Description:

Using electricity generated from renewable or carbon-neutral power systems displaces electricity demand which would ordinarily be supplied by the local utility. Different sources of electricity generation that local utilities use have varying carbon intensities. Renewable energy systems such as fuel cells may have GHG emissions associated with them. Carbon-neutral power systems, such as photovoltaic panels, do not emit GHGs and will be less carbon intense than the local utility. This mitigation measure describes a method to calculate GHG emission reductions from displacing utility electricity with electricity generated from an on-site power system, which may incorporate technology which has not yet been established at the time this document was written.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total annual electricity demand (kWh)
- Annual amount of electricity to be provided by the on-site power system (kWh) or percent of total electricity demand to be provided by the on-site power system (%)
- Carbon intensity of local utility and on-site power system if not carbon neutral

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{\text{baseline}}$ = Total electricity demand (kWh)
Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

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Mitigation Method:

If the total amount of electricity to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the carbon-neutral power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{carbon-neutral}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for electricity use
$\text{Electricity}_{\text{carbon-neutral}}$	=	Electricity to be provided by the carbon-neutral power system (kWh)
$\text{Electricity}_{\text{baseline}}$	=	Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions for carbon neutral systems.

If the total amount of electricity to be provided by a renewable energy system that is not carbon neutral, then the GHG emission reduction is equivalent to the following equation:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{renewable}}}{\text{Electricity}_{\text{baseline}}} \times \frac{(\text{Utility} - \text{Renewable})}{\text{Utility}}$$

Where

$\text{Electricity}_{\text{renewable}}$ = Electricity provided by renewable power system (kWh)

Renewable = Carbon intensity of renewable system (CO_2e/kWh)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a carbon-neutral power system
All other pollutants	Not Quantified[20], [21]

Discussion:

[20] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.
[21] Assumes that the onsite carbon-neutral system displaces electricity use only.

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by the carbon-neutral system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} = 0.10 \text{ or } 10\%$$

If a project instead uses a renewable system with carbon intensity of 500 CO_2e/kWh and the local utility is 100 CO_2e/kWh, then the GHG emission reduction is 5%.

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} \times \frac{(1{,}000 - 500)}{1{,}000} = 0.05 \text{ or } 5\%$$

2.3.2 Establish Onsite Renewable Energy Systems-Solar Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from photovoltaic (PV) systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from PV systems[22], the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the PV system (kWh) or percent of total electricity demand to be provided by the PV system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{\text{baseline}}$ = Total electricity demand (kWh) Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

If the total amount of electricity to be provided by the PV system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the PV system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{PV}}}{\text{Electricity}_{\text{baseline}}}$$

[22] This mitigation measure does not account for GHG emissions associated with the embodied energy of PV systems.

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for electricity use
$Electricity_{PV}$	=	Electricity to be provided by PV system (kWh)
$Electricity_{baseline}$	=	Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the PV system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

The amount of electricity generated by a PV system depends on the size and type of the PV system and the location of the project. The Project Applicant can use a publically-available solar calculator, such as California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator[23], to estimate the size of the PV system needed to generate the desired amount of electricity. The only input required for this calculator is the location (zip code). Estimates of the amount of electricity that can be generated from 1.5, 3, 5, and 10 kW PV systems in cities around California are shown in Table AE-2.1 below.

Since there is a range of PV system efficiencies, the local agency may consider checking the type of PV efficiency assumed to ensure the system that is installed meets this capacity.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a PV system. Percent reduction would scale down linearly as the percent of electricity provided by a PV system decreases.
All other pollutants	Not Quantified[24]

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a PV system, then the GHG emission reduction is 10%

[23] Available online at http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm.
[24] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} = 0.10 \text{ or } 10\%$$

Assumptions:

The data in Table AE-2.1 was generated from California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator, a publically-available solar calculator which the Project Applicant can use to estimate the PV system size needed to generate the desired amount of electricity. It is available online at: http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm.

Other publically-available solar calculators include:

- USDOE. NREL: PVWatts Calculator. Available online at: http://www.nrel.gov/rredc/pvwatts/.
- SolarEstimate.Org. Solar & Wind Estimator. Available online at: http://www.solar-estimate.org/index.php?page=solar-calculator.
- SharpUSA. Solar Calculator. Available online at: http://sharpusa.cleanpowerestimator.com/sharpusa.htm.

Preferred Literature:

None

Other Literature Reviewed:

None

Table AE-2.1
Estimated Electricity Generation from Typical PV Systems

Location			Annual kWh Generated		
Air District	**Major City**	**Zip Code**	**3 kW PV System**	**5 kW PV System**	**10 kW PV System**
Amador County	Ione	95640	4,857	8,094	16,189
Antelope Valley	Lancaster	93534	5,034	8,390	16,781
Bay Area	San Francisco	94101	4,926	8,218	16,436
Butte County	Chico	95926	4,857	8,094	16,189
Calaveras County	Rancho Calaveras	95252	4,857	8,094	16,189
Colusa County	Colusa	95932	4,857	8,094	16,189
El Dorado County	South Lake Tahoe	96150	5,275	8,792	17,584
Feather River	Yuba City	95991	4,857	8,094	16,189
Glenn County	Orland	95963	4,857	8,094	16,189
Great Basin Unified	Bishop	93514	5,507	9,179	18,358
Imperial County	El Centro	92243	5,117	8,528	17,056
Kern County	Bakersfield	93301	5,082	8,470	16,939
Lake County	Lakeport	95453	4,857	8,094	16,189
Lassen County	Susanville	96130	5,275	8,792	17,584
Mariposa County	Mariposa	95338	5,065	8,441	16,882
Mendocino County	Ukiah	95482	4,926	8,218	16,436
Modoc County	Alturas	96101	5,275	8,792	17,584
Mojave Desert	Victorville	92392	5,885	9,808	19,617
Monterey Bay Unified	Monterey	93940	4,926	8,218	16,436
North Coast Unified	Eureka	95501	4,081	6,801	13,602
Northern Sierra	Grass Valley	95949	4,857	8,094	16,189
Northern Sonoma County	Healdsburg	95448	4,931	8,218	16,436
Placer County	Roseville	95678	4,857	8,094	16,189
Sacramento Metro	Sacramento	95864	4,857	8,094	16,189
San Diego County	San Diego	92182	5,102	8,528	17,056
San Joaquin Valley Unified	Fresno	93650	5,065	8,441	16,882
San Luis Obispo County	San Luis Obispo	93405	5,320	8,932	17,865
Santa Barbara County	Santa Barbara	93101	5,320	8,932	17,865
Shasta County	Redding	96001	4,081	6,801	13,602
Siskiyou County	Yreka	96097	4,363	7,271	14,543
South Coast	Los Angeles	90071	5,034	8,390	16,781
Tehama County	Red Bluff	96080	4,857	8,094	16,189
Tuolumne County	Sonora	95370	4,857	8,094	16,189
Ventura County	Oxnard	93030	5,034	8,390	16,781
Yolo-Solano	Davis	95616	4,857	8,094	16,189

2.3.3 Establish Onsite Renewable Energy Systems-Wind Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from wind power systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from wind turbines[25], the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the wind power system (kWh) or percent of total electricity demand to be provided by the wind power system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{\text{baseline}}$ = Total electricity demand (kWh) Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The GHG emission reduction is equivalent to the ratio of electricity from the wind power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{wind}}}{\text{Electricity}_{\text{baseline}}}$$

[25] This mitigation measure does not account for GHG emissions associated with the embodied energy of wind turbines.

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for electricity use
$Electricity_{wind}$	=	Electricity to be provided by wind power system (kWh)
$Electricity_{baseline}$	=	Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the wind power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a wind power system. Percent reduction would scale down linearly as the percent of electricity provided by a wind power system decreases.
All other pollutants	None[26]

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a wind system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} = 0.10 \text{ or } 10\%$$

Assumptions:

None

Preferred Literature:

None

[26] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Other Literature Reviewed:

None

2.3.4 Utilize a Combined Heat and Power System

Range of Effectiveness: 0-46% of GHG emissions associated with electricity use.

Measure Description:

For the same level of power output, combined heat and power (CHP) systems utilize less input energy than traditional separate heat and power (SHP) generation, resulting in fewer CO_2 emissions. In traditional SHP systems, heat created as a by-product is wasted by being released into the environment. In contrast, CHP systems harvest the thermal energy and use it to heat onsite or nearby processes, thus reducing the amount of natural gas or other fuel that would otherwise need to be combusted to heat those processes. In addition CHP systems lower the demand for grid electricity, thereby displacing the CO_2 emissions associated with the production of grid electricity.

This mitigation measure describes how to estimate CO_2 emissions savings (in MT per year) from utilizing a CHP system to supply energy demands which would otherwise be provided by separate heat and power systems (e.g. grid electricity for electricity demand and boilers for thermal demand). CO_2 emissions savings are quantified using the USEPA CHP Emission Calculator which allows users to estimate the CO_2 emissions savings associated with displaced electricity and thermal production from five CHP technologies: microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine. The first three technologies have electricity generation capacities on a scale appropriate for residential neighborhoods, planned communities, and mixed-use and commercial developments. Combustion turbines and backpressure steam turbines are more appropriate for industrial processes or very large commercial developments. The user has the option to input project-specific data such as specific fuels, duct burner operation, cooling demand, and boiler efficiencies.

Table AE-4.1 provides examples of expected CO_2 savings for microturbines, fuel cells, and reciprocating engines of a range of electricity generating capacities for the five major California utilities (Southern California Edison (SCE), Los Angeles Department of Water and Power (LADWP), San Diego Gas and Electric (SDGE), Pacific Gas and Electric (PGE), and the Sacramento Municipal Utility District (SMUD). Default values provided by the USEPA CHP Calculator were used wherever possible (see the Assumptions section below). The magnitude of CO_2 reductions depends on the baseline power sources. For thermal demand, the baseline is assumed to be a new boiler with 80% efficiency. For electricity demand, the baseline is the carbon intensity of the local utility, which varies by utility. For reference, Table AE-4.2 provides the 2006 carbon intensity of delivered electricity for the five utilities. As shown in Table AE-4.1, certain CHP systems may not be appropriate for certain locations, especially in Northern California where PGE and SMUD have relatively low carbon intensities.

Measure Applicability:

- Grid electricity use
- Natural gas combustion

Inputs:

The following information needs to be provided by the Project Applicant:

- Expected CHP technology (microturbine, fuel cell, or reciprocating engine)
- Expected electricity demand

Baseline Method:

GHG emissions = CO_2 emissions displaced

Where:

GHG emissions	=	MT CO_2e
CO_2 emissions displaced	=	MT CO_2 from separate heat and power system Provided in Table AE-4.1 or calculated using USEPA CHP Calculator

Here it is assumed that all GHG emissions produced from fuel combustion and electricity generation are CO_2 emissions.

Mitigation Method:

GHG emission reduction = Percent Reduction in CO_2 emissions

Provided in Table A E-4.1 or calculated using USEPA CHP Calculator

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a CHP system. Percent reduction would scale down linearly as the percent of electricity provided by a CHP system decreases.
All other pollutants	0-70%[27] Depends on CHP technology, electricity generating capacity, sulfur content of fuel, and displaced thermal generation technology. Reductions in CO_2 may produce increases in SO_2 and/or NOx, or vice versa.

[27] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Discussion:

Assume a project is located in SCE's service area and has an expected electricity demand of 100 kW. Using Table AE-4:

- A 100 kW microturbine will generate more CO_2 emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW fuel cell will generate about the same CO_2 emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW reciprocating engine will generate 14% less CO_2 emissions as a separate heat and power system of equivalent power capacity.

Therefore, the Project Applicant should choose the reciprocating engine. This system would generate 568 MT CO_2 compared to 657 MT CO_2 from the separate heat and power system.

Assumptions:

Table AE-4.1 was prepared using the 2009 USEPA CHP Calculator, a publically-available tool found online at: http://www.epa.gov/chp/basic/calculator.html. The following defaults and assumptions were made to generate the data in Table AE-4.1:

- The range of electricity generating capacity shown in Table AE-4.1 is based on the normal range for the technology (as per Calculator default)
- Operates 8,760 hours per year
- Provides heat only (no cooling)
- Combusts natural gas fuel (116.7 CO_2/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
- No supplementary duct burner
- Assumes 8% transmission loss for displaced electricity

Table AE-4.2 was prepared using data from the California Climate Action Registry (CCAR) Power/Utility Protocol (PUP) public reports for reporting year 2006. These PUP reports are available online at:
https://www.climateregistry.org/CARROT/public/reports.aspx.

Preferred Literature:

The USEPA CHP Emissions Calculator compares the anticipated emissions from a CHP system to the emissions from SHP systems. The Calculator was developed by the U.S. Department of Energy's Distributed Energy Program, Oak Ridge National Laboratory, and the U.S. Environmental Protection Agency's CHP Partnership. Users can choose from five different CHP technologies (microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine) and compare their performance to a number of different SHP systems (e.g. local electricity utility and existing or new gas boiler, fuel oil boiler, or heat bump). Additionally, users have the option to refine the analysis with project-specific inputs such as the cooling demand and additional duct burning. Details such as the cooling efficiency of the displaced cooling system must be known to perform more detailed analysis. The calculator can be used to estimate expected reductions in CO_2, SO_2, and NOx emissions as well as fuel usage.

Alternative Literature:

The USEPA Combined Heat and Power Partnership Catalog of CHP Technologies presents performance details of six CHP technologies: gas turbine, microturbine, spark and compression ignition reciprocating engines, steam turbine, and fuel cell. Table I of the Introduction presents the equations necessary to calculate the percent fuel savings from using a CHP system instead of traditional separate heat and power generation. Subsequent chapters describe performance details of each of the CHP technologies, including estimated CO_2 emissions. The GHG emissions reductions associated with this mitigation measure are the change in emissions from using a CHP system rather than a SHP system in a building. The USEPA CHP Calculator methodologies are based in part on this Catalog of CHP Technologies document.

Other Literature Reviewed:

None

Table AE-4.1
Estimated CO_2 Emissions Savings from CHP Systems in California[1,2]

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO_2 Emissions from CHP	CO_2 Emissions Displaced	Percent Reduction in CO_2 Emissions[3]
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
SCE	Microturbine	30	24%	0.51	200	200	0%
		50	24%	0.51	334	333	0%
		100	26%	0.7	607	559	-9%
		250	26%	0.92	1517	1229	-23%
	Fuel Cell	5	30%	0.79	26	26	0%
		100	30%	0.79	527	527	0%
		1000	43%	1.95	3679	3783	3%
		2000	46%	1.92	6884	7597	9%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	325	11%
		100	28%	0.52	568	657	14%
		1000	29%	0.64	5514	5859	6%
		1200	28%	0.63	6759	7052	4%
LADWP	Microturbine	30	24%	0.51	200	277	28%
		50	24%	0.51	334	462	28%
		100	26%	0.7	607	817	26%
		250	26%	0.92	1517	1875	19%
	Fuel Cell	5	30%	0.79	26	39	33%
		100	30%	0.79	527	786	33%
		1000	43%	1.95	3679	6366	42%
		2000	46%	1.92	6884	12762	46%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	466	38%
		100	28%	0.52	568	915	38%
		1000	29%	0.64	5514	8441	35%
		1200	28%	0.63	6759	10188	34%
SDGE	Microturbine	30	24%	0.51	200	218	8%
		50	24%	0.51	334	363	8%
		100	26%	0.7	607	620	2%
		250	26%	0.92	1517	1381	-10%
	Fuel Cell	5	30%	0.79	26	30	12%
		100	30%	0.79	527	588	10%
		1000	43%	1.95	3679	4387	16%
		2000	46%	1.92	6884	8806	22%

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO_2 Emissions from CHP	CO_2 Emissions Displaced	Percent Reduction in CO_2 Emissions[3]
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	358	19%
		100	28%	0.52	568	717	21%
		1000	29%	0.64	5514	6463	15%
		1200	28%	0.63	6759	7814	14%
PGE	Microturbine	30	24%	0.51	200	175	-15%
		50	24%	0.51	334	293	-14%
		100	26%	0.7	607	479	-27%
		250	26%	0.92	1517	1030	-47%
	Fuel Cell	5	30%	0.79	26	23	-16%
		100	30%	0.79	527	447	-18%
		1000	43%	1.95	3679	2984	-23%
		2000	46%	1.92	6884	5999	-15%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	280	-4%
		100	28%	0.52	568	577	2%
		1000	29%	0.64	5514	5059	-9%
		1200	28%	0.63	6759	6130	-10%
SMUD	Microturbine	30	24%	0.51	200	188	-7%
		50	24%	0.51	334	314	-6%
		100	26%	0.7	607	522	-16%
		250	26%	0.92	1517	1137	-33%
	Fuel Cell	5	30%	0.79	26	24	-7%
		100	30%	0.79	527	490	-8%
		1000	43%	1.95	3679	3411	-8%
		2000	46%	1.92	6884	6855	0%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	304	4%
		100	28%	0.52	568	620	8%
		1000	29%	0.64	5514	5487	0%
		1200	28%	0.63	6759	6643	-2%

Abbreviations:

CHP - combined heat and power
CO_2 - carbon dioxide
HHV - higher heating value
kW - kilowatt
LADWP - Los Angeles Department of Water and Power

PGE - Pacific Gas and Electric
SCE - Southern California Edison
SDGE - San Diego Gas and Electric
SMUD - Sacramento Municipal Utility District
USEPA - United State Environmental Protection Agency

Notes:
1. All data in this table generated using the USEPA CHP Calculator using utility-specific CO_2 intensity factors (see Table B). The following defaults and assumptions for the CHP system were used:
   - electricity generating capacity based on normal range for the technology (as per Calculator default)
   - operate 8,760 hours per year
   - heating only (no cooling)
   - natural gas fuel (116.7 CO_2/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
   - no duct burner
   - assumed 8% transmission loss for displaced electricity
2. All CHP systems were compared to a baseline separate heat and power system consisting of a "new gas boiler" (assumed 80% efficiency as per Calculator default) and the local utility CO_2 intensity factor as provided in Table B.
3. A negative value indicates that the proposed CHP system is expected to generate more CO_2 emissions than the baseline separate heat and power system.

Source:
USEPA. 2009. CHP Emissions Calculator. Available online at: http://www.epa.gov/chp/basic/calculator.html. Accessed April 2010.

Table AE-4.2
Carbon Intensity of California Utilities

Utility	Total From All Generation Sources[1]		
	Electricity	CO_2 Emissions	CO_2 intensity factor
	(MWh)	(MT)	(lb/MWh)
SCE	82,776,309	24,077,133	641
LADWP	29,029,883	16,308,526	1,239
SDGE	19,108,166	6,767,326	781
PGE	79,211,982	16,377,172	456
SMUD	15,133,569	3,811,571	555
eGRID National Average (default in USEPA CHP Calculator)[2,3]			540
eGRID National Fossil Fuel Average (default in USEPA CHP Calculator)[2,4]			1,076

Abbreviations:
CHP - combined heat and power
CO_2 - carbon dioxide
eGRID - Emissions and Generation Resource Integrated Database
LADWP - Los Angeles Department of Water and Power
lb - pound
MWh - megawatt-hour
PGE - Pacific Gas and Electric
SCE - Southern California Edison
SDGE - San Diego Gas and Electric
SMUD - Sacramento Municipal Utility District
USEPA - United State Environmental Protection Agency

Notes:

1. Total electricity and CO_2 emissions reported by the utility in the California Climate Action Registry Power/Utility Protocol (PUP) Reports for reporting year 2006. PUP Reports available online at: https://www.climateregistry.org/CARROT/public/reports.aspx.
2. eGRID is a comprehensive inventory of environmental attributes of electricity generation (such as the carbon intensity of power generation), compiled from data from three federal agencies: EPA, the Energy Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC). The USEPA CHP Calculator provides default 2005 eGRID carbon intensities for the U.S. and California. For more information, see: http://www.epa.gov/rdee/energy-resources/egrid/index.html.
3. eGRID National Average represents the national average carbon intensity for electricity generation from all power sources (hydropower, nuclear, renewables, and fossil fuels including oil, natural gas, and coal).
4. eGRID National Fossil Fuel Average represents the national average carbon intensity for electricity generation from fossil fuel sources only (oil, natural gas, and coal).

2.3.5 Establish Methane Recovery in Landfills

Range of Effectiveness: 73-77% reduction in GHG emissions from landfills without methane recovery

Measure Description:

One of the U.S.'s largest sources of methane emissions is from the decomposition of waste in landfills. Methane (CH_4) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO_2. Capturing methane in landfills and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility
- Note: this mitigation measure does not include energy generation from burning municipal solid waste.

Inputs:

The following information needs to be provided by the Project Applicant:

- Amount of mixed solid waste (short tons)

Baseline Method:

In landfills without landfill gas recovery systems, greenhouse gases are emitted directly to the atmosphere.

$$CO_2e_{baseline} = MSW \times LFM \times (44/12)$$

Where

$CO_2e_{baseline}$	=	Amount of CO_2e generated from landfilling mixed solid waste (MT)
MSW	=	Amount of mixed solid waste (short tons) Provided by Applicant
LFM	=	Landfill methane generated from mixed solid waste 0.580 MTCE / short ton MSW
(44/12)	=	Conversion from MTCE to MT CO_2e

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

USEPA assumes that 10% of the landfill CH4 generated is either converted by bacteria or chemically oxidized to CO_2. The remaining 90% remains as CH4 and is either captured and flared[28] or released directly to the atmosphere as fugitive CH_4 emissions. Assume a 99% combustion conversion efficiency.

$$CO_2e_{Mit1} = MSW \times LFM \times 1/(12/44 \times 21) \times [(CO_{2oxidation} + CO_{2flare}) \times 1 + (CH_{4fugitive} + CH_{4unflare}) \times 21]$$

Where

CO_2e_{Mit1}	=	Amount of CO_2e from flaring landfill methane (MT)
MSW	=	Amount of mixed solid waste (short tons) Provided by Applicant
LFM	=	MTCE[29] methane generated per short ton MSW 0.580 MTCE / short ton MSW
1/(12/44 x 21)	=	Conversion from MTCE to MT CH_4
$CO_{2oxidation}$	=	Contribution from CO_2 generated from chemical or biological oxidation. 0.10
CO_{2flare}	=	Contribution from CO_2 generated from the flaring of methane. (1-0.10) x 0.75 x 0.99 = 0.66825
1	=	Global warming potential of CO_2, used to convert from CO_2 to CO_2e
$CH_{4fugitive}$	=	Contribution from CH_4 which remains unoxidized to CO_2 and is not captured for flaring, and therefore is released directly to the atmosphere. (1-0.10) x (1-0.75) = 0.225

[28] Seek local agency guidance on whether to include CO_{2flare} emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.
[29] MTCE = metric MTMTMTMT carbon equivalent. The MTCE equivalent of 1 MT of a greenhouse gas is (12/44) multiplied by the greenhouse gas global warming potential.

$CH_{4unflare}$ = Contribution from CH_4 which remains unoxidized and is captured for flaring, but remains unconverted due to incomplete combustion.
(1-0.10) x 0.75 x (1-0.99) = 0.00675

21 = Global warming potential of CH_4, used to convert from CH_4 to CO_2e

Therefore:

CO_2e_{Mit1} = MSW x 0.580 x 1/(12/44 x 21) x [(0.76825 x 1) + (0.23175 x 21)]

CO_2eMit1 = MSW x 0.571

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$\text{GHG reduction}_{Mit1} = \frac{CO_2e_{baseline} - CO_2e_{Mit1}}{CO_2e_{baseline}}$$

GHG reduction$_{Mit1}$ = 73%

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of mixed solid waste in the landfill.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted methane, the following equation is used to calculate the amount of electricity generated:

Electricity = MSW x LFM x 1/(12/44 x 21) x Combust x Density x 10^6 x HHV x ECF x EFF x

Where

Electricity = Amount of electricity generated from combustion of methane (kWh)

LFM = MTCE methane generated per short ton MSW
0.580 MTCE / short ton MSW

1/(12/44 x 21) = Conversion from MTCE to MT CH_4

Combust = Fraction of CH_4 captured and combusted for cogeneration

(1-0.10) x 0.75 = 0.675; assumes 10% of methane is oxidized prior to capture and 75% capture efficiency

Density = Density of CH_4
0.05 ft^3 CH_4 / gram CH_4

10^6 = Conversion from grams to MT

HHV = Heating value of CH4
1,012 BTU / ft^3 CH_4

ECF = Energy conversion factor
0.00009 kWh/BTU

EFF = Efficiency Factor
0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

Electricity = MSW x 265

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO_2e emissions associated with that utility electricity generation are also avoided:

$$CO_2e_{displaced} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO_2e/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\mathbf{CO_2e_{Mit2} = CO_2e_{Mit1} - CO_2e_{displaced}}$$

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{Mit2} = \frac{CO_2e_{baseline} - (CO_2e_{Mit1} - CO_2e_{displaced})}{CO_2e_{baseline}}$$

$$\textbf{GHG reductionMit2} = \frac{1.556 + (265 \times \text{Utility})}{2.127}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of mixed solid waste in the landfill.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	73-77%
All other pollutants	Not Quantified[30]

Discussion:

In Southern California Edison’s service area, a landfill which captures and flares methane achieves a 73% reduction in GHG emissions compared to a landfill without a methane recovery system. A landfill which captures and combusts methane for cogeneration achieves a 77% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.556 + (265 \times 2.909 \times 10^{-4})}{2.127} = 77\%$$

Assumptions:

[30] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Data based upon the following reference:

- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf

Preferred Literature:

Section 6 of USEPA's Solid Waste Management and Greenhouse Gases report presents methodology for calculating greenhouse gas emissions associated with three different landfill management systems: landfills which do not capture landfill gas, landfills which recover methane and flare it, and landfills which recover methane and combust it for cogeneration. Column (b) of Exhibit 6-6 shows methane generation factors for various types of landfill waste in MTCE per short ton of waste. For this analysis, the value for mixed solid waste is used. Section 6.2 provides USEPA defaults for percent of methane chemically or biologically oxidized to CO_2 (10%) and the efficiency of methane capture systems (75%). Exhibit 6-7 provides USEPA defaults used for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

- CAR. 2009. Landfill Project Protocol: Collecting and Destroying Methane from Landfills. Version 3.0. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/landfill/current-landfill-project-protocol/
- CalRecycle (CIWMB). Climate Change and Solid Waste Management: Draft Final Report and Draft GHG Calculator Tool. Available online at: http://www.calrecycle.ca.gov/Climate/Organics/LifeCycle/default.htm. Accessed February 2010.
- CARB. 2008. Local Government Operations Protocol. Version 1.0. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- American Carbon Registry. Standards. Available online at: http://www.americancarbonregistry.org/carbon-accounting/standards/?searchterm=landfill. Accessed February 2010.

2.3.6 Establish Methane Recovery in Wastewater Treatment Plants

Range of Effectiveness: 95-97% reduction in GHG emissions from wastewater treatment plants without recovery.

Measure Description:

Methane (CH_4) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO_2. Capturing methane from wastewater treatment (WWT) plants and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility

Inputs:

The following information needs to be provided by the Project Applicant:

- Liters of wastewater

Baseline Method:

Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. The methane emissions expected from anaerobic or facultative lagoons is calculated using the following equation from the California Air Resources Board (CARB)'s Local Government Reporting Protocol:

$$CO_2e_{baseline} = \text{Wastewater} \times BOD_5 \text{ load} \times 10^{-6} \times Bo \times MCF_{anaerobic} \times 10^{-3} \times 21$$

Where

$CO_2e_{baseline}$	=	Amount of CO_2e generated from wastewater treatment (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
BOD_5 load	=	Concentration of BOD_5 in wastewater 200 mg / liter wastewater
10^{-6}	=	Conversion from mg to kg
Bo	=	Maximum CH_4-producing capacity for domestic wastewater 0.6 kg CH_4 / kg BOD_5 removed
$MCF_{anaerobic}$	=	CH_4 correction factor for anaerobic systems 0.8
10^{-3}	=	Conversion from kg to MT

21	=	Global warming potential of CH_4, used to convert from CH_4 to CO_2e

Therefore:

$$\mathbf{CO_2e_{baseline} = Wastewater \times 2.02 \times 10^{-6}}$$

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

Anaerobic digesters produce methane-rich biogas which can be combusted and converted to CO_2.[31] Inherent inefficiencies in the system results in incomplete combustion of the biogas, which results in remaining methane emissions:

$$CO_2e_{Mit1} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times FCH_4 \times (CH_4\text{unflare} + CO_2\text{flare})$$

Where

CO_2e_{Mit1}	=	Amount of CO_2e generated from flaring methane from wastewater treatment plant (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
0.2642	=	Conversion from liters to gallons
Digester Gas	=	Volume of biogas generated per volume of wastewater treated ft^3 biogas / gallon wastewater 0.01
F_{CH4}	=	Fraction of CH_4 in biogas 0.65
$CH_{4unflare}$	=	Contribution from CH_4 which is captured for flaring, but remains unconverted due to incomplete combustion $CH_{4unflare} = \rho_{CH4} \times (1\text{-DE}) \times 0.0283 \times 10^{-6} \times 21 = 3.93 \times 10^{-6}$
ρ_{CH4}	=	Density of CH4 at standard conditions 662 g/m^3
DE	=	CH_4 destruction efficiency 0.99
0.0283	=	Conversion factor from ft^3 to m^3
10^{-6}	=	Conversion factor from g to MT
21	=	Global warming potential of CH_4, used to convert from CH_4 to CO_2e
CO_2flare	=	Contribution from CO_2 generated from the flaring of methane
CO_2flare	=	EF / 2204.623 x 1= 5.44×10^{-5}
EF	=	Emission factor for methane combustion

[31] Seek local agency guidance on whether to include CO_2 combustion emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.

0.120 lb CO_2/ft^3 CH_4

2204.623 = Conversion factor from lb to MT

1 = Global warming potential of CO_2, used to convert from CO_2 to CO_2e

Therefore:

$$\mathbf{CO_2e_{Mit1} = \text{Wastewater} \times 1.00 \times 10^{-7}}$$

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$\text{GHG reduction}_{Mit1} = \frac{CO_2e_{baseline} - CO_2e_{Mit1}}{CO_2e_{baseline}}$$

$$\mathbf{\text{GHG reduction}_{Mit1} = 95\%}$$

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of wastewater being treated.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted biogas, the following equation is used to calculate the amount of electricity generated:

$$\text{Electricity} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times F_{CH4} \times HHV_{CH4} \times ECF \times EFF$$

Where:

Electricity = Amount of electricity generated from combustion of methane (kWh)

Wastewater = Volume of wastewater (liters)
Provided by Applicant

0.2642 = Conversion from liters to gallons

Digester Gas = Volume of biogas generated per volume of wastewater treated
0.01 ft^3 biogas / gallon wastewater

F_{CH4} = Fraction of CH_4 in biogas
0.65

HHV = Heating value of methane
1,012 BTU / ft^3 CH_4

ECF = Energy conversion factor
0.00009 kWh/BTU

EFF = Efficiency Factor
0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

$$\text{Electricity} = \text{Wastewater} \times 1.33 \times 10^{-4}$$

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO_2e emissions associated with that utility electricity generation are also avoided:

$$CO_2e_{displaced} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO_2e/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\mathbf{CO_2e_{Mit2} = CO_2e_{Mit1} - CO_2e_{displaced}}$$

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{Mit2} = \frac{CO2e_{baseline} - (CO2e_{Mit1} - CO2e_{displaced})}{CO2e_{baseline}}$$

$$\textbf{GHG reductionMit2} = \frac{1.92 \times 10^{-6} + (1.33 \times 10^{-4} \times \text{Utility})}{2.02 \times 10^{-6}}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of wastewater being treated.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	95-97%
All other pollutants	Not Quantified[32]

Discussion:

In Southern California Edison's service area, a WWT plant which captures and flares methane achieves a 95% reduction in GHG emissions compared to a WWT plant without a methane recovery system. A WWT plant which captures and combusts methane for cogeneration achieves a 97% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.92\times10^{-6} + \left(1.33\times10^{-4}\times2.909\times10^{-4}\right)}{2.02\times10^{-6}} = 97\%$$

Assumptions:

Data based upon the following references:

- CARB. 2008. Local Government Operations Protocol. Chapter 10: Wastewater Treatment Facilities. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- USEPA. 2008. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Chapter 8: Waste. Available online at: http://www.epa.gov/climatechange/emissions/downloads/08_CR.pdf
- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf

Preferred Literature: Chapter 10 of CARB's Local Government Operations Protocol (LGOP) provides the methodology for calculating methane emissions from wastewater treatment. Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. Equation 10.3 of the LGOP calculates methane emissions from anaerobic or facultative lagoons. Equation 10.1 of the LGOP calculates the methane emissions remaining due to incomplete combustion of anaerobic digester gas. Default values for the amount of digester gas produced per volume of wastewater and the fraction of methane in digester gas are taken from the 2008 USEPA Inventory of U.S. Greenhouse Gas Emissions and Sinks. Exhibit 6-7 of

[32] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

USEPA's Solid Waste Management and Greenhouse Gases report provides the methodology for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

None

3.0 Transportation

3.1 Land Use/Location

3.1.1 Increase Density

Range of Effectiveness: 0.8 – 30.0% vehicle miles traveled (VMT) reduction and therefore a 0.8 – 30.0% reduction in GHG emissions.

Measure Description:

Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.

The reductions in GHG emissions are quantified based on reductions to VMT. The relationship between density and VMT is described by its elasticity. According to a recent study published by Brownstone, et al. in 2009, the elasticity between density and VMT is 0.12. Default densities are based on the typical suburban densities in North America which reflects the characteristics of the ITE Trip Generation Manual data used in the baseline estimates.

Measure Applicability:

- Urban and suburban context
    - Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of housing units per acre or jobs per job acre

Mitigation Method:

% VMT Reduction = A * B [not to exceed 30%]

Where:

A = Percentage increase in housing units per acre or jobs per job acre[33] = (number of housing units per acre or jobs per job acre – number of housing units per acre or jobs per job acre for typical ITE development) / (number of housing units per acre or jobs per job acre for typical ITE development) For small and medium sites (less than ½ mile in radius) the calculation of housing and jobs per acre should be performed for the development site as a whole, so that the analysis does not erroneously attribute trip reduction benefits to measures that simply shift jobs and housing within the site with no overall increase in site density. For larger sites, the analysis should address the development as several ½-mile-radius sites, so that shifts from one area to another would increase the density of the receiving area but reduce the density of the donating area, resulting in trip generation rate decreases and increases, respectively, which cancel one another.
B = Elasticity of VMT with respect to density (from literature)

Detail:

- A: [not to exceed 500% increase]
    - If housing: (Number of housing units per acre – 7.6) / 7.6
      (See Appendix C for detail)
    - If jobs: (Number of jobs per acre – 20) / 20
      (See Appendix C for detail)
- B: 0.07 (Boarnet and Handy 2010)

Assumptions:

Data based upon the following references:

- Boarnet, Marlon and Handy, Susan. 2010. "DRAFT Policy Brief on the Impacts of Residential Density Based on a Review of the Empirical Literature." http://arb.ca.gov/cc/sb375/policies/policies.htm; Table 1.

[33] This value should be checked first to see if it exceeds 500% in which case A = 500%.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[34]
CO_2e	1.5-30% of running
PM	1.5-30% of running
CO	1.5-30% of running
NOx	1.5-30% of running
SO_2	1.5-30% of running
ROG	0.9-18% of total

Discussion:

The VMT reductions for this strategy are based on changes in density versus the typical suburban residential and employment densities in North America (referred to as "ITE densities"). These densities are used as a baseline to mirror those densities reflected in the ITE Trip Generation Manual, which is the baseline method for determining VMT.

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of housing units or jobs per acre (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing residential density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as density). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for housing:

Low Range % VMT Reduction (8.5 housing units per acre)

$$= (8.5 - 7.6) / 7.6 * 0.07 = 0.8\%$$

High Range % VMT Reduction (60 housing units per acre)

$$= \frac{60 - 7.6}{7.6} = 6.9 \text{ or } 690\% \quad \text{Since greater than 500\%, set to 500\%}$$

$$= 500\% \times 0.07 = 0.35 \text{ or } 35\% \quad \text{Since greater than 30\%, set to 30\%}$$

[34] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Sample calculations are provided below for jobs:

Low Range % VMT Reduction (25 jobs per acre)
= (25 – 20) / 20 *0.12 = 3%
High Range % VMT Reduction (100 jobs per acre)

$$= \frac{100 - 20}{20} = 4 \text{ or } 400\%$$

=400% x 0.12 = 0.48 or 48% Since greater than 30%, set to 30%

Preferred Literature:

- -0.07 = elasticity of VMT with respect to density

Boarnet and Handy's detailed review of existing literature highlighted three individual studies that used the best available methods for analyzing data for individual households. These studies provided the following elasticities: -0.12 - Brownstone (2009), -0.07 – Bento (2005), and -0.08 – Fang (2008). To maintain a conservative estimate of the impacts of this strategy, the lower elasticity of -0.07 is used in the calculations.

Alternative Literature:

- -0.05 to -0.25 = elasticity of VMT with respect to density

The *TRB Special Report 298* literature suggests that doubling neighborhood density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.

Alternative Literature References:

TRB, 2009. *Driving and the Built Environment*, Transportation Research Board Special Report 298. http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf . Accessed March 2010. (p. 4)

Other Literature Reviewed:

None

3.1.2 Increase Location Efficiency

Range of Effectiveness: 10-65% vehicle miles traveled (VMT) reduction and therefore 10-65% reduction in GHG emissions

Measure Description:

This measure is not intended as a separate strategy but rather a documentation of empirical data to justify the "cap" for all land use/location strategies. The location of the Project relative to the type of urban landscape such as being located in an urban area, infill, or suburban center influences the amount of VMT compared to the statewide average. This is referred to as the location of efficiency since there are synergistic benefits to these urban landscapes.

To receive the maximum reduction for this location efficiency, the project will be located in an urban area/ downtown central business district. Projects located on brownfield sites/infill areas receive a lower, but still significant VMT reduction. Finally, projects in suburban centers also receive a reduction for their efficient location. Reductions are based on the typical VMT of a specific geographic area relative to the average VMT statewide.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

- No inputs are needed. VMT reduction ranges are based on the geographic location of the project within the region.

Mitigation Method:

% VMT reduction =

- Urban: 65% (representing VMT reductions for the average urban area in California versus the statewide average VMT)
- Compact Infill: 30% (representing VMT reductions for the average compact infill area in California versus the statewide average VMT)
- Suburban Center: 10% (representing VMT reductions for the average suburban center in California versus the statewide average VMT)

Assumptions:

Data based upon the following references:

- Holtzclaw, et al. 2002. "Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago." *Transportation Planning and Technology*, Vol. 25, pp. 1–27.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[35]
CO_2e	10-65% of running
PM	10-65% of running
CO	10-65% of running
NOx	10-65% of running
SO_2	10-65% of running
ROG	6-39% of total

Discussion:

Example:

N/A – no calculations needed

Alternative Literature:

- 13-72% reduction in VMT for infill projects

Preferred Literature:

Holtzclaw, et al., [1] studied relationships between auto ownership and mileage per car and neighborhood urban design and socio-economic characteristics in the Chicago, Los

[35] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Angeles, and San Francisco metro areas. In all three regions, average annual vehicle miles traveled is a function of density, income, household size, and public transit, as well as pedestrian and bicycle orientation (to a lesser extent). The annual VMT for each neighborhood was reviewed to determine empirical VMT reduction “caps” for this report. These location-based caps represent the average and maximum reductions that would likely be expected in urban, infill, suburban center, and suburban locations.

Growing Cooler looked at 10 studies which have considered the effects of regional location on travel and emissions generated by individual developments. The studies differ in methodology and context but they tend to yield the same conclusion: infill locations generate substantially lower VMT per capita than do greenfield locations, ranging from 13 - 72% lower VMT.

Literature References:

[1] Holtzclaw, et al. 2002. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago.” *Transportation Planning and Technology*, Vol. 25, pp. 1–27.

[2] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute. (p.88, Figure 4-30)

Other Literature Reviewed:

None

3.1.3 Increase Diversity of Urban and Suburban Developments (Mixed Use)

Range of Effectiveness: 9-30% vehicle miles traveled (VMT) reduction and therefore 9-30% reduction in GHG emissions.

Measure Description:

Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. A description of diverse uses for urban and suburban areas is provided below.

Urban:

The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa). The residential units should be within ¼-mile of parks, schools, or other civic uses. The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Suburban:

The suburban project will have at least three of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context (unless the project is a master-planned community)
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of each land use type in the project (to calculate land use index)

Mitigation Method:

% VMT Reduction = Land Use * B [not to exceed 30%]

Where

Land Use = Percentage increase in land use index versus single use development

= (land use index – 0.15)/0.15 (see Appendix C for detail)

Land use index = -a / ln(6) (from [2])

$$a = \sum_{i=1}^{6} a_i \times \ln(a_i)$$

a_i = building floor area of land use i / total square feet of area considered

- a_1 = single family residential
- a_2 = multifamily residential
- a_3 = commercial
- a_4 = industrial
- a_5 = institutional
- a_6 = park

if land use is not present and a_i is equal to 0, set a_i equal to 0.01

B = elasticity of VMT with respect to land use index (0.09 from [1])

not to exceed 500% increase

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

[2] Song, Y., and Knaap, G., “Measuring the effects of mixed land uses on housing values.” *Regional Science and Urban Economics 34 (2004) 663-680.* (p. 669) http://urban.csuohio.edu/~sugie/papers/RSUE/RSUE2005_Measuring%20the%20effects%20of%20mixed%20land%20use.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[36]
CO_2e	9-30% of running
PM	9-30% of running
CO	9-30% of running
NOx	9-30% of running
SO_2	9-30% of running
ROG	5.4-18% of total

Discussion:

In the above calculation, a land use index of 0.15 is used as a baseline representing a development with a single land use (see Appendix C for calculations).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of land use index (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing the land use index by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as diversity). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

[36] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Example:

Sample calculations are provided below:

90% single family homes, 10% commercial
- Land use index = -[0.9*ln(0.9)+ 0.1*ln(0.1)+ 4*0.01*ln(0.01)] / ln(6) = 0.3
- Low Range % VMT Reduction = (0.3 – 0.15)/0.15 *0.09 = 9%

1/6 single family, 1/6 multi-family, 1/6 commercial, 1/6 industrial, 1/6 institutional, 1/6 parks
- Land use index = -[6*0.17*ln(0.17)] / ln(6) = 1
- High Range % VMT Reduction (land use index = 1)
- Land use = (1-0.15)/0.15 = 5.6 or 566%. Since this is greater than 500%, set to 500%.
- % VMT Reduction = (5 x 0.09) = 0.45 or 45%. Since this is greater than 30%, set to 30%.

Preferred Literature:

- -0.09 = elasticity of VMT with respect to land use index

The land use (or entropy) index measurement looks at the mix of land uses of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses. Ewing's [1] synthesis looked at a total of 10 studies, where none controlled for self-selection[37]. The weighted average elasticity of VMT with respect to the land use mix index is -0.09. The methodology for calculating the land use index is described in Song and Knaap [2].

Alternative Literature:

- Vehicle trip reduction = [1 - (ABS(1.5*h-e) / (1.5*h+e)) - 0.25] / 0.25*0.03

Where :
h = study area housing units, and
e = study area employment.

Nelson\Nygaard's report [3] describes a calculation adapted from Criterion and Fehr & Peers [4]. The formula assumes an "ideal" housing balance of 1.5 jobs per household and a baseline diversity of 0.25. The maximum trip reduction with this method is 9%.

[37] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Alternative Literature References:

[3] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.12). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

[4] Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

3.1.4 Increase Destination Accessibility

Range of Effectiveness: 6.7 – 20% vehicle miles traveled (VMT) reduction and therefore 6.7-20% reduction in GHG emissions.

Measure Description:

The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to downtown or major job center

Mitigation Method:

% VMT Reduction = Center Distance * B [not to exceed 30%]

Where

Center Distance = Percentage decrease in distance to downtown or major job center versus typical ITE suburban development = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)

Center Distance = 12 - Distance to downtown/job center for project) / 12
See Appendix C for detail

B = Elasticity of VMT with respect to distance to downtown or major job center (0.20 from [1])

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." Journal of the American Planning Association, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[38]
CO_2e	6.7 – 20% of running
PM	6.7 – 20% of running
CO	6.7 – 20% of running
NOx	6.7 – 20% of running
SO_2	6.7 – 20% of running
ROG	4 – 12% of total

Discussion:

The VMT reductions for this strategy are based on changes in distance to key destinations versus the standard suburban distance in North America. This distance is used as a baseline to mirror the distance to destinations reflected in the land uses for the ITE Trip Generation Manual, which is the baseline method for determining VMT.

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as destination accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density,

[38] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

design, diversity, destination, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (8 miles to downtown/job center) =
  $\frac{12-8}{12} \times 0.20 = 6.7\%$
- High Range % VMT Reduction (0.1 miles to downtown/job center) =
  $\frac{12-0.1}{12} \times 0.20 = 20.0\%$

Preferred Literature:

- -0.20 = elasticity of VMT with respect to job accessibility by auto
- -0.20 = elasticity of VMT with respect to distance to downtown

The Ewing and Cervero report [1] finds that VMT is strongly related to measures of accessibility to destinations. The weighted average elasticity of VMT with respect to job accessibility by auto is -0.20 (looking at five total studies). The weighted average elasticity of VMT with respect to distance to downtown is -0.22 (looking at four total studies, of which one controls for self selection[39]).

Alternative Literature:

- 10-30% reduction in vehicle trips

The VTPI literature [2] suggests a 10-30% reduction in vehicle trips for “smart growth” development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle more.

Alternative Literature References:

[2] Litman, T., 2009. “Win-Win Emission Reduction Strategies.” Victoria Transport Policy Institute (VTPI). Website: http://www.vtpi.org/wwclimate.pdf. Accessed March 2010. (p. 7, Table 3)

[39] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Other Literature Reviewed:

None

3.1.5 Increase Transit Accessibility

Range of Effectiveness: 0.5 – 24.6% VMT reduction and therefore 0.5-24.6% reduction in GHG emissions.[40]

Measure Description:

Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
  - A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

In addition to the features listed above, the following strategies may also be implemented to provide an added benefit beyond what is documented in the literature:

- Mixed use development [LUT-3]
- Traffic calmed streets with good connectivity [SDT-2]
- Parking management strategies such as unbundled parking, maximum parking requirements, market pricing implemented to reduce amount of land dedicated to vehicle parking [see PPT-1 through PPT-7]

Measure Applicability:

- Urban and suburban context
- Appropriate in a rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

[40] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to transit station in project

Mitigation Method:

% VMT = Transit * B [not to exceed 30%]

Where

Transit = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development (1.3% as described in Appendix C)

% transit mode share for project (see Table)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38
0.5 to 3 miles	-4.4*x + 15.2
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010 (see Appendix C for calculation detail)	

B = adjustments from transit ridership increase to VMT (0.67, see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Lund, H. and R. Cervero, and R. Willson (2004). *Travel Characteristics of Transit-Oriented Development in California*. (p. 79, Table 5-25)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[41]
CO_2e	0.5 – 24.6% of running
PM	0.5 – 24.6% of running
CO	0.5 – 24.6% of running
NOx	0.5 – 24.6% of running
SO_2	0.5 – 24.6% of running
ROG	0.3 – 14.8% of total

Discussion:

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as transit accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, transit accessibility, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for a rail station:

- Low Range % VMT Reduction (3 miles from station) = [(-4.4*3+15.2) – 1.3%] * 0.67 = 0.5%
- High Range % VMT Reduction (0 miles from station) = [(-50*0+38) – 1.3%] * 0.67 = 24.6%

Preferred Literature:

- 13 to 38% transit mode share (residents in TODs with ½ mile of rail station)
- 5 to 13% transit mode share (residents in TODs from ½ mile to 3 miles of rail station)

The *Travel Characteristics* report [1] surveyed TODs and surrounding areas in San Diego, Los Angeles, San Jose, Sacramento, and Bay Area regions. Survey sites are all located in non-central business district locations, are within walking distance of a transit station with rail service headways of 15 minutes or less, and were intentionally developed as TODs.

[41] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Alternative Literature:

Alternate:

- -0.05 = elasticity of VMT with respect to distance to nearest transit stop

Ewing and Cervero's meta-analysis [2] provides this weighted average elasticity based on six total studies, of which one controls for self-selection. The report does not provide the range of distances where this elasticity is valid.

Alternate:

- 5.9 – 13.3% reduction in VMT

The Bailey, et al. 2008 report [3] predicted a reduction of household daily VMT of 5.8 miles for a location next to a rail station and 2.6 miles for a location next to a bus station. Using the report's estimate of 43.75 daily average miles driven, the estimated reduction in VMT for rail accessibility is 13.3% (5.8/43.75) and for bus accessibility is 5.9% (2.6/43.75).

Alternate:

- 15% reduction in vehicle trips
- 2 to 5 times higher transit mode share

TCRP Report 128 [4] concludes that transit-oriented developments, compared to typical developments represented by the *ITE Trip Generation Manual*, have 47% lower vehicle trip rates and have 2 to 5 times higher transit mode share. *TCRP Report 128* notes that the *ITE Trip Generation Manual* shows 6.67 daily trips per unit while detailed counts of 17 residential TODs resulted in 3.55 trips per unit (a 47% reduction in vehicle trips). This study looks at mid-rise and high-rise apartments at the residential TOD sites. A more conservative comparison would be to look at the *ITE Trip Generation Manual* rates for high-rise apartments, 4.2 trips per unit. This results in a 15% reduction in vehicle trips.

Alternative Literature References:

[2] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

[3] Bailey, L., Mokhtarian, P.L., & Little, A. (2008). "The Broader Connection between Public Transportation, Energy Conservation and Greenhouse Gas Reduction." ICF International. (Table 4 and 5)

[4] TCRP, 2008. *TCRP Report 128 - Effects of TOD on Housing, Parking, and Travel.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_128.pdf (p. 11, 69).

Other Literature Reviewed:

None

3.1.6 Integrate Affordable and Below Market Rate Housing

Range of Effectiveness: 0.04 – 1.20% vehicle miles traveled (VMT) reduction and therefore 0.04-1.20% reduction in GHG emissions.

Measure Description:

Income has a statistically significant effect on the probability that a commuter will take transit or walk to work [4]. BMR housing provides greater opportunity for lower income families to live closer to jobs centers and achieve jobs/housing match near transit. It also addresses to some degree the risk that new transit oriented development would displace lower income families. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit. Lower income families tend to have lower levels of auto ownership, allowing buildings to be designed with less parking which, in some cases, represents the difference between a project being economically viable or not.

Residential development projects of five or more dwelling units will provide a deed-restricted low-income housing component on-site.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context unless transit availability and proximity to jobs/services are existing characteristics
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of units in project that are deed-restricted BMR housing

Mitigation Method:

% VMT Reduction = 4% * Percentage of units in project that are deed-restricted BMR housing [1]

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.15). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Holtzclaw, John; Clear, Robert; Dittmar, Hank; Goldstein, David; and Haas, Peter (2002), "Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles and San Francisco", *Transportation Planning and Technology*, 25 (1): 1-27.

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (%VT = %VMT)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[42]
CO_2e	0.04 – 1.20% of running
PM	0.04 – 1.20% of running
CO	0.04 – 1.20% of running
NOx	0.04 – 1.20% of running
SO_2	0.04 – 1.20% of running
ROG	0.024 – 0.72% of total

Discussion:

At a low range, 1% BMR housing is assumed. At a medium range, 15% is assumed (based on the requirements of the San Francisco BMR Program[5]). At a high range, the San Francisco program is doubled to reach 30% BMR. Higher percentages of BMR are possible, though not discussed in the literature or calculated.

[42] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = 4% * 1% = 0.04%
- High Range % VMT Reduction = 4% * 30% = 1.20%

Preferred Literature:

Nelson\Nygaard [1] provides a 4% reduction in vehicle trips for each deed-restricted BMR unit. This is calculated from Holtzclaw [3], with the following assumptions: 12,000 average annual VMT per vehicle, $33,000 median per capita income (2002 figures per CA State Department of Finance), and average income in BMR units 25% below median. With a coefficient of -0.0565 (estimate for VMT/vehicle as a function of $/capita) from [3], the VMT reduction is 0.0565*33,000*0.25/12,000 = 4%.

Alternative Literature:

- 50% greater transit school trips than higher income households

Fehr & Peers [6] developed Direct Ridership Models to predict the Bay Area Rapid Transit (BART) ridership activity. One of the objectives of this assessment was to understand the land use and system access factors that influence commute period versus off-peak travel on BART. The analysis focused on the Metropolitan Transportation Commission 2000 Bay Area Travel Survey [7], using the data on household travel behavior to extrapolate relationships between household characteristics and BART mode choice. The study found that regardless of distance from BART, lower income households generate at least 50% higher BART use for school trips than higher income households. More research would be needed to provide more applicable information regarding other types of transit throughout the state.

Other Literature Reviewed:

[4] Bento, Antonio M., Maureen L. Cropper, Ahmed Mushfiq Mobarak, and Katja Vinha. 2005. “The Effects of Urban Spatial Structure on Travel Demand in the United States.” *The Review of Economics and Statistics* 87,3: 466-478. (cited in Measure Description section)

[5] San Francisco BMR Program: http://www.ci.sf.ca.us/site/moh_page.asp?id=48083 (p.1) (cited in Discussion section).

[6] Fehr & Peers. *Access BART*. 2006.

[7] BATS. 2000. 2000 Bay Area Travel Survey.

3.1.7 Orient Project Toward Non-Auto Corridor

Range of Effectiveness: Grouped strategy. [See LUT-3]

Measure Description:

A project that is designed around an existing or planned transit, bicycle, or pedestrian corridor encourages alternative mode use. For this measure, the project is oriented towards a planned or existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.

The benefits of Orientation toward Non-Auto Corridor have not been sufficiently quantified in the existing literature. This measure is most effective when applied in combination of multiple design elements that encourage this use. There is not sufficient evidence that this measure results in non-negligible trip reduction unless combined with measures described elsewhere in this report, including neighborhood design, density and diversity of development, transit accessibility and pedestrian and bicycle network improvements. Therefore, the trip reduction percentages presented below should be used only as reasonableness checks. They may be used to assess whether, when applied to projects oriented toward non-auto corridors, analysis of all of those other development design factors presented in this report produce trip reductions at least as great as the percentages listed below.

Measure Applicability:

- Urban or suburban context; may be applicable in a master-planned rural community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.25 – 0.5% reduction in vehicle miles traveled (VMT)

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions attributes 0.5% reduction for a project oriented towards an *existing* corridor. A 0.25% reduction is attributed for a project oriented towards a *planned* corridor. The planned transit, bicycle, or pedestrian corridor must be in a General Plan, Community Plan, or similar plan.

Alternate:

- 0.5% reduction in VMT per 1% improvement in transit frequency
- 0.5% reduction in VMT per 10% increase in transit ridership

The *Center for Clean Air Policy (CCAP) Guidebook* [2] attributes a 0.5 % reduction per 1% improvement in transit frequency. Based on a case study presented in the CCAP report, a 10% increase in transit ridership would result in a 0.5% reduction. (This information is based on a TIAX review for SMAQMD).

The sources cited above reflect existing guidance rather than empirical studies.

Alternative Literature References:

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD). "Recommended Guidance for Land Use Emission Reductions." http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

[2] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html
TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD

Other Literature Reviewed:

None

3.1.8 Locate Project near Bike Path/Bike Lane

Range of Effectiveness: Grouped strategy. [See LUT-4]

Measure Description:

A Project that is designed around an existing or planned bicycle facility encourages alternative mode use. The project will be located within 1/2 mile of an existing Class I path or Class II bike lane. The project design should include a comparable network that connects the project uses to the existing offsite facilities.

This measure is most effective when applied in combination of multiple design elements that encourage this use. Refer to Increase Destination Accessibility (LUT-4) strategy. The benefits of Proximity to Bike Path/Bike Lane are small as a standalone strategy. The strategy should be grouped with the Increase Destination Accessibility strategy to increase the opportunities for multi-modal travel.

Measure Applicability:

- Urban or suburban context; may be applicable in a rural master planned community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in vehicle miles traveled (VMT)

As a rule of thumb, the *Center for Clean Air Policy (CCAP) Guidebook* [1] attributes a 1% to 5% reduction associated with comprehensive bicycle programs. Based on the CCAP guidebook, the TIAX report allots 2.5% reduction for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

[1] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD.

Other Literature Reviewed:

None

3.1.9 Improve Design of Development

Range of Effectiveness: 3.0 – 21.3% vehicle miles traveled (VMT) reduction and therefore 3.0-21.3% reduction in GHG emissions.

Measure Description:

The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of intersections per square mile

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Intersections} * B$$

Where

Intersections = Percentage increase in intersections versus a typical ITE suburban development

$$= \frac{\text{Intersections per square mile of project} - \text{Intersections per square mile of typical ITE suburban development}}{\text{Intersections per square mile of typical ITE suburban development}}$$

$$= \frac{\text{Intersections per square mile of project} - 36}{36}$$

See Appendix C for detail [not to exceed 500% increase]

B = Elasticity of VMT with respect to percentage of intersections (0.12 from [1])

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[43]
CO_2e	3.0 – 21.3% of running
PM	3.0 – 21.3% of running
CO	3.0 – 21.3% of running
NOx	3.0 – 21.3% of running
SO_2	3.0 – 21.3% of running
ROG	1.8 – 12.8% of total

Discussion:

The VMT reductions for this strategy are based on changes in intersection density versus the standard suburban intersection density in North America. This standard density is used as a baseline to mirror the density reflected in the *ITE Trip Generation Manual*, which is the baseline method for determining VMT.

The calculations in the Example section look at a low and high range of intersection densities. The low range is simply a slightly higher density than the typical ITE

[43] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

development. The high range uses an average intersection density of mixed use/transit-oriented development sites (TOD Site surveys in the Bay Area for *Candlestick-Hunters Point Phase II TIA,* Fehr & Peers, 2009).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of intersections per square mile (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing intersection density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as design). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (45 intersections per square mile) = (45 – 36) / 36 * 0.12 = 3.0%
- High Range % VMT Reduction (100 intersections per square mile) = (100 – 36) / 36 * 0.12 = 21.3%

Preferred Literature:

- -0.12 = elasticity of VMT with respect to design (intersection/street density)
- -0.12 = elasticity of VMT with respect to design (% of 4-way intersections)

Ewing and Cervero's [1] synthesis showed a strong relationship of VMT to design elements, second only to destination accessibility. The weighted average elasticity of VMT to intersection/street density was -0.12 (looking at six studies). The weighted average elasticity of VMT to percentage of 4-way intersections was -0.12 (looking at four studies, of which one controlled for self-selection[44]).

Alternative Literature:

Alternate:

- 2-19% reduction in VMT

[44] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Growing Cooler [2] looked at various reports which studied the effect of site design on VMT, showing a range of 2-19% reduction in VMT. In each case, alternative development plans for the same site were compared to a baseline or trend plan. Results suggest that VMT and CO_2 per capita decline as site density increases as well as the mix of jobs, housing, and retail uses become more balanced. *Growing Cooler* notes that the limited number of studies, differences in assumptions and methodologies, and variability of results make it difficult to generalize.

Alternate:

- 3 – 17% shift in mode share from auto to non-auto

The Marshall and Garrick paper [3] analyzes the differences in mode shares for grid and non-grid (“tree”) neighborhoods. For a city with a tributary tree street network, a neighborhood with a tree network had auto mode share of 92% while a neighborhood with a grid network had auto mode share of 89% (3% difference). For a city with a tributary radial street network, a tree neighborhood had auto mode share of 97% while a grid neighborhood had auto mode share of 84% (13% difference). For a city with a grid network, a tree neighborhood had auto mode share of 95% while a grid neighborhood had auto mode share of 78% (17% difference). The research is based on 24 California cities with populations between 30,000 and 100,000.

Alternative Literature References:

[2] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute.

[3] Marshall and Garrick, 2009. “The Effect of Street Network Design on Walking and Biking.” Submitted to the 89th Annual Meeting of Transportation Research Board, January 2010. (Table 3)

Other Literature Reviewed:

None

3.2 Neighborhood/Site Enhancements

3.2.1 Provide Pedestrian Network Improvements

Range of Effectiveness: 0 - 2% vehicle miles traveled (VMT) reduction and therefore 0 - 2% reduction in GHG emissions.

Measure Description:

Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations.

Mitigation Method:

Estimated VMT Reduction	Extent of Pedestrian Accommodations	Context
2%	Within Project Site and Connecting Off-Site	Urban/Suburban
1%	Within Project Site	Urban/Suburban
< 1%	Within Project Site and Connecting Off-Site	Rural

Assumptions:

Data based upon the following references:

- Center for Clean Air Policy (CCAP) Transportation Emission Guidebook. http://www.ccap.org/safe/guidebook/guide_complete.html (accessed March 2010)
- 1000 Friends of Oregon (1997) "Making the Connections: A Summary of the LUTRAQ Project" (p. 16): http://www.onethousandfriendsoforegon.org/resources/lut_vol7.html

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[45]
CO_2e	0 - 2% of running
PM	0 - 2% of running
CO	0 - 2% of running
NOx	0 - 2% of running
SO_2	0 - 2% of running
ROG	0 – 1.2% of total

Discussion:

As detailed in the preferred literature section below, the lower range of 1 – 2% VMT reduction was pulled from the literature to provide a conservative estimate of reduction potential. The literature does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context.

Example:

N/A – calculations are not needed.

Preferred Literature:

[45] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- 1 - 2% reduction in VMT

The Center for Clean Air Policy (CCAP) attributes a 1% reduction in VMT from pedestrian-oriented design assuming this creates a 5% decrease in automobile mode share (e.g. auto split shifts from 95% to 90%). This mode split is based on the Portland Regional Land Use Transportation and Air Quality (LUTRAQ) project. The LUTRAQ analysis also provides the high end of 10% reduction in VMT. This 10% assumes the following features:

– Compact, mixed-use communities
– Interconnected street network
– Narrower roadways and shorter block lengths
– Sidewalks
– Accessibility to transit and transit shelters
– Traffic calming measures and street trees
– Parks and public spaces

Other strategies (development density, diversity, design, transit accessibility, traffic calming) are intended to account for the effects of many of the measures in the above list. Therefore, the assumed effectiveness of the Pedestrian Network measure should utilize the lower end of the 1 - 10% reduction range. If the pedestrian improvements are being combined with a significant number of the companion strategies, trip reductions for those strategies should be applied as well, based on the values given specifically for those strategies in other sections of this report. Based upon these findings, and drawing upon recommendations presented in the alternate literature below, the recommended VMT reduction attributable to pedestrian network improvements, above and beyond the benefits of other measures in the above bullet list, should be 1% for comprehensive pedestrian accommodations within the development plan or project itself, or 2% for comprehensive internal accommodations and external accommodations connecting to off-site destinations.

Alternative Literature:

Alternate:

- Walking is three times more common with enhanced pedestrian infrastructure
- 58% increase in non-auto mode share for work trips

The Nelson\Nygaard [1] report for the City of Santa Monica Land Use and Circulation Element EIR summarized studies looking at pedestrian environments. These studies have found a direct connection between non-auto forms of travel and a high quality pedestrian environment. Walking is three times more common with communities that have pedestrian friendly streets compared to less pedestrian friendly communities. Non-auto mode share for work trips is 49% in a pedestrian friendly community, compared to 31% in an auto-oriented community. Non-auto mode share for non-work trips is 15%, compared to 4% in an auto-oriented community. However, these effects also depend upon other aspects of the pedestrian friendliness being present, which are accounted for separately in this report through land use strategy mitigation measures such as density and urban design.

Alternate:

- 0.5% - 2.0% reduction in VMT

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions [2] attributes 1% reduction for a project connecting to *existing* external streets and pedestrian facilities. A 0.5% reduction is attributed to connecting to *planned* external streets and pedestrian facilities (which must be included in a pedestrian master plan or equivalent). Minimizing pedestrian barriers attribute an additional 1% reduction in VMT. These recommendations are generally in line with the recommended discounts derived from the preferred literature above.

Preferred and Alternative Literature Notes:

[1] Nelson\Nygaard, 2010. City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis (p.401). http://www.shapethefuture2025.net/

Nelson\Nygaard looked at the following studies: Anne Vernez Moudon, Paul Hess, Mary Catherine Snyder and Kiril Stanilov (2003), Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, http://www.wsdot.wa.gov/research/reports/fullreports/432.1.pdf; Robert Cervero and Carolyn Radisch (1995), Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, http://www.uctc.net/papers/281.pdf;

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 11) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Other Literature Reviewed:

None

3.2.2 Provide Traffic Calming Measures

Range of Effectiveness: 0.25 – 1.00% vehicle miles traveled (VMT) reduction and therefore 0.25 – 1.00% reduction in GHG emissions.

Measure Description:

Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of streets within project with traffic calming improvements
- Percentage of intersections within project with traffic calming improvements

Mitigation Method:

		% of streets with improvements			
		25%	*50%*	*75%*	*100%*
		% VMT Reduction			
% of intersections with improvements	*25%*	**0.25%**	**0.25%**	**0.5%**	**0.5%**
	50%	**0.25%**	**0.5%**	**0.5%**	**0.75%**
	75%	**0.5%**	**0.5%**	**0.75%**	**0.75%**
	100%	**0.5%**	**0.75%**	**0.75%**	**1%**

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.*(p. B-25) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf
[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions.* (p.13) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[46]
CO_2e	0.25 – 1.00% of running
PM	0.25 – 1.00% of running
CO	0.25 – 1.00% of running
NOx	0.25 – 1.00% of running
SO_2	0.25 – 1.00% of running
ROG	0.15 – 0.6% of total

Discussion:

The table above allows the Project Applicant to choose a range of street and intersection improvements to determine an appropriate VMT reduction estimate. The Applicant will look at the rows on the left and choose the percent of intersections within

[46] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

the project which will have traffic calming improvements. Then, the Applicant will look at the columns along the top and choose the percent of streets within the project which will have traffic calming improvements. The intersection cell of the row and column selected in the matrix is the VMT reduction estimate.

Though the literature provides some difference between a suburban and urban context, the difference is small and thus a conservative estimate was used to be applied to all contexts. Rural context is not specifically discussed in the literature but is assumed to have similar impacts.

For a low range, a project is assumed to have 25% of its streets with traffic calming improvements and 25% of its intersections with traffic calming improvements. For a high range, 100% of streets and intersections are assumed to have traffic calming improvements

Example:

N/A - No calculations needed.

Preferred Literature:

- -0.03 = elasticity of VMT with respect to a pedestrian environment factor (PEF)
- 1.5% - 2.0% reduction in suburban VMT
- 0.5% - 0.6% reduction in urban VMT

Moving Cooler [1] looked at Ewing's synthesis elasticity from the Smart Growth INDEX model (-0.03) to estimate VMT reduction for a suburban and urban location. The estimated reduction in VMT came from looking at the difference between the VMT results for Moving Cooler's strategy of pedestrian accessibility only compared to an aggressive strategy of pedestrian accessibility and traffic calming.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions* [2] attributes 0.25 – 1% of VMT reductions to traffic calming measures. The table above illustrates the range of VMT reductions based on the percent of streets and intersections with traffic calming measures implemented. This range of reductions is recommended because it is generally consistent with the effectiveness ranges presented in the other preferred literature for situations in which the effects of traffic calming are distinguished from the other measures often found to co-exist with calming, and because it provides graduated effectiveness estimates depending on the degree to which calming is implemented.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.3 Implement a Neighborhood Electric Vehicle (NEV) Network

Range of Effectiveness: 0.5-12.7% vehicle miles traveled (VMT) reduction since Neighborhood Electric Vehicles (NEVs) would result in a mode shift and therefore reduce the traditional vehicle VMT and GHG emissions[47]. Range depends on the available NEV network and support facilities, NEV ownership levels, and the degree of shift from traditional

Measure Description:

The project will create local "light" vehicle networks, such as NEV networks. NEVs are classified in the California Vehicle Code as a “low speed vehicle”. They are electric powered and must conform to applicable federal automobile safety standards. NEVs offer an alternative to traditional vehicle trips and can legally be used on roadways with speed limits of 35 MPH or less (unless specifically restricted). They are ideal for short trips up to 30 miles in length. To create an NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes will be implemented throughout the project and will double as bicycle routes.

Measure Applicability:

- Urban, suburban, and rural context
- Small citywide or large multi-use developments
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

[47] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Inputs:

The following information needs to be provided by the Project Applicant:

- low vs. high penetration

Mitigation Method:

% VMT reduction = Pop * Number * NEV

Where

Penetration	=	Number of NEVs per household (0.04 to 1.0 from [1])
NEV	=	VMT reduction rate per household (12.7% from [2])

Assumptions:

Data based upon the following reference:

[1] City of Lincoln, MHM Engineers & Surveyors, *Neighborhood Electric Vehicle Transportation Program Final Report*, Issued 04/05/05

[2] City of Lincoln, *A Report to the California Legislature as required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation,* January 1, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[48]
CO_2e	0.5 – 12.7% of running
PM	0.5 – 12.7% of running
CO	0.5 – 12.7%of running
NOx	0.5 – 12.7% of running
SO_2	0.5 – 12.7% of running
ROG	0.3 – 7.6% of total

Discussion:

The estimated number of NEVs per household may vary based on what the project estimates as a penetration rate for implementing an NEV network. Adjust according to project characteristics. The estimated reduction in VMT is for non-NEV miles traveled. The calculations below assume that NEV miles traveled replace regular vehicle travel.

▪ [48] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

This may not be the case and the project should consider applying an appropriate discount rate on what percentage of VMT is actually replaced by NEV travel..

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low penetration) = 0.04 * 12.7% = 0.5%
- High Range % VMT Reduction (high penetration) = 1.0 * 12.7% = 12.7%

Preferred Literature:

- 12.7% reduction in VMT per household
- Penetration rates: 0.04 to 1 NEV / household

The NEV Transportation Program plans to implement the following strategies: charging facilities, striping, signage, parking, education on NEV safety, and NEV/bicycle lines throughout the community. . One estimate of current NEV ownership reported roughly 600 NEVs in the city of Lincoln in 2008[49]. With current estimated households of ~13,500[50], a low estimate of NEV penetration would be 0.04 NEV per household. A high NEV penetration can be estimated at 1 NEV per household. The 2007 survey of NEV users in Lincoln revealed an average use of about 3,500 miles per year [2]. With an estimated annual 27,500 VMT/household[51], this results in a 12.7% reduction in VMT per household.

Alternative Literature:

- 0.5% VMT reduction for neighborhoods with internal NEV connections
- 1% VMT reduction for internal and external connections to surrounding neighborhoods
- 1.5% VMT reduction for internal NEV connections and connections to other existing NEV networks serving all other types of uses.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions notes that current studies show NEVs do not replace gas-fueled vehicles as the primary vehicle. For the purpose

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[49] Lincoln, California: A NEV-Friendly Community, Bennett Engineering, the City of Lincoln, and LincolnNEV, August 28, 2008 - http://electrickmotorsports.com/news.php

[50] SACOG Housing Estimates Statistics (http://www.sacog.org/about/advocacy/pdf/fact-sheets/HousingStats.pdf). Linearly interpolated 2008 household numbers between 2005 and 2035 projections.

[51] SACOG SACSim forecasts for VMT per household at 75.4 daily VMT per household * 365 days = 27521 annual VMT per household

of providing incentives for developers to promote NEV use, a project will receive the above listed VMT reductions for implementation.

Alternative Literature Reference:

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 21) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Other Literature Reviewed:

None

3.2.4 Create Urban Non-Motorized Zones

Range of Effectiveness: Grouped strategy. [See SDT-1]

Measure Description:

The project, if located in a central business district (CBD) or major activity center, will convert a percentage of its roadway miles to transit malls, linear parks, or other non-motorized zones. These features encourage non-motorized travel and thus a reduction in VMT.

This measure is most effective when applied with multiple design elements that encourage this use. Refer to Pedestrian Network Improvements (SDT-1) strategy for ranges of effectiveness in this category. The benefits of Urban Non-Motorized Zones alone have not been shown to be significant.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.01 – 0.2% annual Vehicle Miles Traveled (VMT) reduction

Moving Cooler [1] assumes 2 – 6% of U.S. CBDs/activity centers will convert to non-motorized zones for the purpose of calculating the potential impact. At full implementation, this would result in a range of CBD/activity center annual VMT reduction of 0.07-0.2% and metro VMT reduction of 0.01-0.03%.

Alternate:

Pucher, Dill, and Handy (2010) [2] note several international case studies of urban non-motorized zones. In Bologna, Italy, vehicle traffic declined by 50%, and 8% of those arriving in the CBD came by bicycle after the conversion. In Lubeck, Germany, of those who used to drive, 12% switched to transit, walking, or bicycling with the conversion. In Aachen, Germany, car travel declined from 44% to 36%, but bicycling stayed constant at 3%

Notes:

No literature was identified that quantifies the benefits of this strategy at a smaller scale.

Alternative Literature References:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[2] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review.* February 2010. *Preventive Medicine 50 (2010) S106–S125.* http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf

Other Literature Reviewed:

None

3.2.5 Incorporate Bike Lane Street Design (on-site)

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities.

Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness levels. The benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

Measure Applicability:

- Urban and suburban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile)

Dill and Carr (2003) [1] showed that each additional mile of Type 2 bike lanes per square mile is associated with a 1% increase in the share of workers commuting by bicycle. Note that increasing by 1 mile is significant compared to the current average of 0.34 miles per square mile. Also, an increase in 1% in share of bicycle commuters would double the number of bicycle commuters in many areas with low existing bicycle mode share.

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

Alternate:

- 0.075% increase in bicycle commuting with each mile of bikeway per 100,000 residents

A before-and-after study by Nelson and Allen (1997) [3] of bicycle facility implementation found that each mile of bikeway per 100,000 residents increases bicycle commuting 0.075%, all else being equal.

Alternative Literature References:

[1] Dill, Jennifer and Theresa Carr (2003). “Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Tem, Commuters Will Use Them – Another Look.” *TRB 2003 Annual Meeting CD-ROM*.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[3] Nelson, Arthur and David Allen (1997). “If You Build Them, Commuters Will Use Them; Cross-Sectional Analysis of Commuters and Bicycle Facilities.” *Transportation Research Record 1578.*

Other Literature Reviewed:

None

3.2.6 Provide Bike Parking in Non-Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

A non-residential project will provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness ranges. Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, and rural contexts
- Appropriate for retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in Vehicle Miles Traveled (VMT)

As a rule of thumb, the Center for Clean Air Policy (CCAP) guidebook [1] attributes a 1% to 5% reduction in VMT to the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, the TIAX report allots 2.5% reduction for all bicycle-related measures and a quarter of that for this bicycle parking alone. (This information is based on a TIAX review for Sacramento Metropolitan Air Quality Management District (SMAQMD).)

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, *Moving Cooler* estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, *Moving Cooler* estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

Alternative Literature References:

[1]*Center For Clean Air Policy (CCAP) Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; Based on results of 2005 literature search conducted by TIAX on behalf of SMAQMD.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.2.7 Provide Bike Parking with Multi-Unit Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Long-term bicycle parking will be provided at apartment complexes or condominiums without garages. Refer to Improve Design of Development (LUT-9) strategy for effectiveness ranges in this category. The benefits of Bike Parking with Multi-Unit Residential Projects have no quantified impacts and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for residential projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including bicycle parking at multi-unit residential sites.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.8 Provide Electric Vehicle Parking

Range of Effectiveness: Grouped strategy. [See SDT-3]

Measure Description:

This project will implement accessible electric vehicle parking. The project will provide conductive/inductive electric vehicle charging stations and signage prohibiting parking for non-electric vehicles. Refer to Neighborhood Electric Vehicle Network (SDT-3) strategy for effectiveness ranges in this category. The benefits of Electric Vehicle Parking may be quantified when grouped with the use of electric vehicles and or Neighborhood Electric Vehicle Network.

Measure Applicability:

- Urban or suburban contexts
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing electric vehicle parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.9 Dedicate Land for Bike Trails

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan.

Refer to Improve Design of Development (LUT-9**)** strategy for ranges of effectiveness in this category. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing land dedication for bike trails.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.3 Parking Policy/Pricing

3.3.1 Limit Parking Supply

Range of Effectiveness: 5 – 12.5% vehicle miles travelled (VMT) reduction and therefore 5 – 12.5% reduction in GHG emissions.

Measure Description:

The project will change parking requirements and types of supply within the project site to encourage "smart growth" development and alternative transportation choices by project residents and employees. This will be accomplished in a multi-faceted strategy:

- Elimination (or reduction) of minimum parking requirements[52]
- Creation of maximum parking requirements
- Provision of shared parking

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction can be counted only if spillover parking is controlled (via residential permits and on-street market rate parking) [See PPT-5 and PPT-7]

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- ITE parking generation rate for project site
- Actual parking provision rate for project site

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[52] This may require changes to local ordinances and regulations.

Mitigation Method:

$$\% \text{ VMT Reduction} = \frac{\text{Actual parking provision} - \text{ITE parking generation rate}}{\text{ITE parking generation rate}} \times 0.5$$

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p. 16) http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (% vehicle trips = %VMT).

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[53]
CO_2e	5 – 12.5% of running
PM	5 – 12.5% of running
CO	5 – 12.5% of running
NOx	5 – 12.5% of running
SO_2	5 – 12.5% of running
ROG	3 – 7.5% of total

Discussion:

The literature suggests that a 50% reduction in conventional parking provision rates (per ITE rates) should serve as a typical ceiling for the reduction calculation. The upper range of VMT reduction will vary based on the size of the development (total number of spaces provided). ITE rates are used as baseline conditions to measure the effectiveness of this strategy.

Though not specifically documented in the literature, the degree of effectiveness of this measure will vary based on the level of urbanization of the project and surrounding areas, level of existing transit service, level of existing pedestrian and bicycle networks and other factors which would complement the shift away from single-occupant vehicle travel.

[53] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis.

Example:

If the ITE parking generation rate for the project is 100 spaces, for a low range a 5% reduction in spaces is assumed. For a high range a 25% reduction in spaces is assumed.

- Low range % VMT Reduction = [(100 - 95)/100] * 0.5 = 2.5%
- High range % VMT Reduction = [(100 - 75)/100] * 0.5 = 12.5%

Preferred Literature:

To develop this model, Nelson\Nygaard [1] used the Institute of Transportation Engineers' *Parking Generation* handbook as the baseline figure for parking supply. This is assumed to be unconstrained demand. Trip reduction should only be credited if measures are implemented to control for spillover parking in and around the project, such as residential parking permits, metered parking, or time-limited parking.

Alternative Literature:

- 100% increase in transit ridership
- 100% increase in transit mode share

According to *TCRP Report 95, Chapter 18* [2], the central business district of Portland, Oregon implemented a maximum parking ratio of 1 space per 1,000 square feet of new buildings and implemented surface lot restrictions which limited conditions where buildings could be razed for parking. A "before and after" study was not conducted specifically for the maximum parking requirements and data comes from various surveys and published reports. Based on rough estimates the approximate parking ratio of 3.4 per 1,000 square feet in 1973 (for entire downtown) had been reduce to 1.5 by 1990. Transit mode share increased from 20% to 40%. The increases in transit ridership and mode share are not solely from maximum parking requirements. Other companion strategies, such as market parking pricing and high fuel costs, were in place.

Alternative Literature Sources:

[1] TCRP Report 95, Chapter 18: Parking Management and Supply: Traveler Response to *Transportation System Changes*. (p. 18-6) http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c18.pdf

Other Literature Reviewed:

None

3.3.2 Unbundle Parking Costs from Property Cost

Range of Effectiveness: 2.6 – 13% vehicles miles traveled (VMT) reduction and therefore 2.6 – 13% reduction in GHG emissions.

Measure Description:

This project will unbundle parking costs from property costs. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost. This removes the burden from those who do not wish to utilize a parking space. Parking will be priced separately from home rents/purchase prices or office leases. An assumption is made that the parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Complementary strategy includes Workplace Parking Pricing. Though not required, implementing workplace parking pricing ensures the market signal from unbundling parking is transferred to the employee.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Monthly parking cost for project site

Mitigation Method:

% Reduction in VMT = Change in vehicle cost * elasticity * A

Where:

- -0.4 = elasticity of vehicle ownership with respect to total vehicle costs (lower end per VTPI)
- Change in vehicle cost = monthly parking cost * (12 / $4,000), with $4,000 representing the annual vehicle cost per VTPI [1]
- A: 85% = adjustment from vehicle ownership to VMT (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Victoria Transport Policy Institute, *Parking Requirement Impacts on Housing Affordability;* http://www.vtpi.org/park-hou.pdf; January 2009; accessed March 2010. (Annual/monthly parking fees estimated by VTPI in 2009) (p. 8, Table 3)

- For the elasticity of vehicle ownership, VTPI cites Phil Goodwin, Joyce Dargay and Mark Hanly (2003), *Elasticities Of Road Traffic And Fuel Consumption With Respect To Price And Income: A Review*, ESRC Transport Studies Unit, University College London (www.transport.ucl.ac.uk), commissioned by the UK Department of the Environment, Transport and the Regions (now UK Department for Transport); J.O. Jansson (1989), "Car Demand Modeling and Forecasting," *Journal of Transport Economics and Policy*, May 1989, pp. 125-129; Stephen Glaister and Dan Graham (2000), *The Effect of Fuel Prices on Motorists*, AA Motoring Policy Unit (www.theaa.com) and the UK Petroleum Industry Association (http://195.167.162.28/policyviews/pdf/effect_fuel_prices.pdf); and Thomas F. Golob (1989), "The Casual Influences of Income and Car Ownership on Trip Generation by Mode", *Journal of Transportation Economics and Policy*, May 1989, pp. 141-162

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[54]
CO_2e	2.6 – 13% of running
PM	2.6 – 13% of running
CO	2.6 – 13% of running

[54] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

NOx	2.6 – 13% of running
SO_2	2.6 – 13% of running
ROG	1.6 – 7.8% of total

Discussion:

As discussed in the preferred literature section, monthly parking costs typically range from $25 to $125. The lower end of the elasticity range provided by VTPI is used here to be conservative.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = $25* 12 / $4000 * 0.4 * 85% = 2.6%
- High Range % VMT Reduction = $125* 12 / $4000 * 0.4 * 85%= 12.8%

Preferred Literature:

- -0.4 to -1.0 = elasticity of vehicle ownership with respect to total vehicle costs

The above elasticity comes from a synthesis of literature. As noted in the VTPI report [1], a 10% increase in total vehicle costs (operating costs, maintenance, fuel, parking, etc.) reduces vehicle ownership between 4% and 10%. The report, estimating $4,000 in annual costs per vehicle, calculated vehicle ownership reductions from residential parking pricing.

Vehicle Ownership Reductions from Residential Parking Pricing

Annual (Monthly) Parking Fee	-0.4 Elasticity	-0.7 Elasticity	-1.0 Elasticity
$300 ($25)	4%	6%	8%
$600 ($50)	8%	11%	15%
$900 ($75)	11%	17%	23%
$1,200 ($100)	15%	23%	30%
$1,500 ($125)	19%	28%	38%

Alternative Literature:

None

Alternative Literature Notes:

None

Other Literature Reviewed:

None

3.3.3 Implement Market Price Public Parking (On-Street)

Range of Effectiveness: 2.8 – 5.5% vehicle miles traveled (VMT) reduction and therefore 2.8 – 5.5% reduction in GHG emissions.

Measure Description:

This project and city in which it is located will implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage “park once” behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project-supplied parking to other public parking nearby, which undermine the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, and mixed-use projects
- Applicable in a specific or general plan context only
- Reduction can be counted only if spillover parking is controlled (via residential permits)
- Study conducted in a downtown area, and thus should be applied carefully if project is not in a central business/activity center

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location

- Percent increase in on-street parking prices (minimum 25% needed)

Mitigation Method:

% VMT Reduction = Park$ * B

Where:

Park$ = Percent increase in on-street parking prices (minimum of 25% increase [1])

B = Elasticity of VMT with respect to parking price (0.11, from [2])

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-10)

Moving Cooler's parking pricing analysis cited Victoria Transport Policy Institute, *How Prices and Other Factors Affect Travel Behavior* (http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578). The VTPI paper summarized the elasticities found in the Hensher and King paper. David A. Hensher and Jenny King (2001), "Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District," *Transportation Research A*, Vol. 35, No. 3 (www.elsevier.com/locate/tra), March 2001, pp. 177-196.

[2] J. Peter Clinch and J. Andrew Kelly (2003), *Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity*, Department of Environmental Studies, University College Dublin (www.environmentaleconomics.net). (p. 2) http://www.ucd.ie/gpep/research/workingpapers/2004/04-02.pdf As referenced in VTPI: http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[55]
CO_2e	2.8 – 5.5% of running

[55] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

PM	2.8 – 5.5% of running
CO	2.8 – 5.5% of running
NOx	2.8 – 5.5% of running
SO_2	2.8 – 5.5% of running
ROG	1.7 – 3.3% of total

Discussion:

The range of parking price increases should be a minimum of 25% and a maximum of 50%. The minimum is based on Moving Cooler [1] discussions which state that a less than 25% increase would not be a sufficient amount to reduce VMT. The case study [2] looked at a 50% price increase, and thus no conclusions can be made on the elasticities above a 50% increase. This strategy may certainly be implemented at a higher price increase, but VMT reductions should be capped at results from a 50% increase to be conservative.

Example:

Assuming a baseline on-street parking price of $1, sample calculations are provided below:

- Low Range % VMT Reduction (25% increase) = ($1.25 - $1)/$1 * 0.11 = 2.8%
- High Range % VMT Reduction (50% increase) = ($1.50 - $1)/$1 * 0.11 = 5.5%

Preferred Literature:

- -0.11 parking demand elasticity with respect to parking prices

The Clinch & Kelly study [2] of parking meters looked at the impacts of a 50% price increase in the cost of on-street parking. The case study location was a central on-street parking area with a 3-hour time limit and a mix of business and non-business uses. The study concluded the parking increases resulted in an estimated average price elasticity of demand of -0.11, while factoring in parking duration results in an elasticity of -0.2 (cost increases also affect the amount of time cars are parked). Though this study is international (Dublin, Ireland), it represents a solid study of parking meter price increases and provides a conservative estimate of elasticity compared to the alternate literature.

Alternative Literature:

Alternate:

- -0.19 shopper parking elasticity with respect to parking price
- -0.48 commuter parking elasticity with respect to parking price

The *TCRP 95 Chapter 13* [3] report looked at a case study of the city of San Francisco implementing a parking tax on all public and private off-street parking (in 1970). Based on the number of cars parked, the report estimated parking price elasticities of -0.19 to -0.48, an average over a three year period.

Alternate:

- -0.15 VMT elasticity with respect to parking prices (for low density regions)
- -0.47 VMT elasticity with respect to parking prices (for high density regions)

The Moving Cooler analysis assumes a 25 percent increase in on-street parking fees is a starting point sufficient to reduce VMT. Using the elasticities stated above, Moving Cooler estimates an annual percent VMT reduction from 0.42% - 1.14% for a range of regions from a large low density region to a small high density region. The calculations assume that pricing occurs at the urban central business district/employment cent/retail center, one-fourth of all person trips are commute based trips, and approximately 15% of commute trips are to the CBD or regional activity centers.

Alternative Literature References:

[3] TCRP Report 95. *Chapter 13: Parking Pricing and Fees - Traveler Response to Transportation System Changes.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c13.pdf. (p.13-42)

Other Literature Reviewed:

None

3.3.4 Require Residential Area Parking Permits

Range of Effectiveness: Grouped strategy. (See PPT-1, PPT-2, and PPT-3)

Measure Description:

This project will require the purchase of residential parking permits (RPPs) for long-term use of on-street parking in residential areas. Permits reduce the impact of spillover parking in residential areas adjacent to commercial areas, transit stations, or other locations where parking may be limited and/or priced. Refer to Parking Supply Limitations (PPT-1), Unbundle Parking Costs from Property Cost (PPT-2), or Market Rate Parking Pricing (PPT-3) strategies for the ranges of effectiveness in these categories. The benefits of Residential Area Parking Permits strategy should be combined with any or all of the above mentioned strategies, as providing RPPs are a key complementary strategy to other parking strategies.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

- -0.45 = elasticity of vehicle miles traveled (VMT) with respect to price
- 0.08% greenhouse gas (GHG) reduction
- 0.09-0.36% VMT reduction

Moving Cooler [1] suggested residential parking permits of $100-$200 annually. This mitigation would impact home-based trips, which are reported to represent approximately 60% of all urban trips. The range of VMT reductions can be attributed to the type of urban area. VMT reductions for $100 annual permits are 0.09% for large, high-density; 0.12% for large, low-density; 0.12% for medium, high-density; 0.18% for medium, low-density; 0.18% for small, high-density; and 0.12% for small, low-density. VMT reductions for $200 annual permits are 0.18% for large, high-density; 0.24% for large, low-density; 0.24% for medium, high-density; 0.36% for medium, low-density; 0.36% for small, high-density; and 0.24% for small, low-density.

Alternative Literature References:

[1] Cambridge Systematics. Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions. Technical Appendices. Prepared for the Urban Land Institute.
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

3.4 Commute Trip Reduction Programs

3.4.1 Implement Commute Trip Reduction Program - Voluntary

Commute Trip Reduction Program – Voluntary, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reductions that should be permitted for a combined set of strategies within a voluntary program.

Range of Effectiveness: 1.0 – 6.2% commute vehicle miles traveled (VMT) Reduction and therefore 1.0 – 6.2% reduction in commute trip GHG emissions.

Measure Description:

The project will implement a voluntary Commute Trip Reduction (CTR) program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The main difference between a voluntary and a required program is:

- Monitoring and reporting is not required
- No established performance standards (i.e. no trip reduction requirements)

The CTR program will provide employees with assistance in using alternative modes of travel, and provide both “carrots” and “sticks” to encourage employees. The CTR program should include all of the following to apply the effectiveness reported by the literature:

- Carpooling encouragement
- Ride-matching assistance
- Preferential carpool parking
- Flexible work schedules for carpools
- Half time transportation coordinator
- Vanpool assistance
- Bicycle end-trip facilities (parking, showers and lockers)

Other strategies may also be included as part of a voluntary CTR program, though they are not included in the reductions estimation and thus are not incorporated in the estimated VMT reductions. These include: new employee orientation of trip reduction and alternative mode options, event promotions and publications, flexible work schedule for all employees, transit subsidies, parking cash-out or priced parking, shuttles, emergency ride home, and improved on-site amenities.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Appropriate for retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

% VMT Reduction = A * B

Where

A = % reduction in commute VMT (from [1])

B = % employees eligible

Detail:

- A: 5.2% (low density suburb), 5.4% (suburban center), 6.2% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[56]
CO_2e	1.0 – 6.2% of running
PM	1.0 – 6.2% of running
CO	1.0 – 6.2% of running
NOx	1.0 – 6.2% of running
SO_2	1.0 – 6.2% of running
ROG	0.6 –3.7% of total

Discussion:

This set of strategies typically serves as a complement to the more effective workplace CTR strategies such as pricing and parking cash out.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 5.2% * 0.2 = 1.0%
- High Range % VMT Reduction (urban and 100% eligible) = 6.2% * 1 = 6.2%

Preferred Literature:

- 5.2 - 6.2% commute VMT reduction

Moving Cooler assumes the employer support program will include: carpooling, ride-matching, preferential carpool parking, flexible work schedules for carpools, a half-time transportation coordinator, vanpool assistance, bicycle parking, showers, and locker facilities. The report assigns 5.2% reduction to large metropolitan areas, 5.4% to medium metropolitan areas, and 6.2% to small metropolitan areas.

[56] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Alternative Literature:

Alternate:

- 15-19% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [2] looked at a sample of 82 Transportation Demand Management (TDM) programs. Low support TDM programs had a 15% reduction, medium support programs 15.9%, and high support 19%. Low support programs had little employer effort. These programs may include rideshare matching, distribution of transit flyers, but have little employer involvement. With medium support programs, employers were involved with providing information regarding commute options and programs, a transportation coordinator (even if part-time), and assistance for ridesharing and transit pass purchases. With high support programs, the employer was providing most of the possible strategies. The sample of programs should not be construed as a random sample and probably represent above average results.

Alternate:

- 4.16 – 4.76% reduction in commute VMT

The Herzog study [3] compared a group of employees, who were eligible for comprehensive commuter benefits (with financial incentives, services such as guaranteed ride home and carpool matching, and informational campaigns) and general marketing information, to a reference group of employees not eligible for commuter benefits. The study showed a 4.79% reduction in VMT, assuming 75% of the carpoolers were traveling to the same worksite. There was a 4.16% reduction in VMT, assuming only 50% of carpoolers were traveling to the same worksite.

Alternate:

- 8.5% reduction in vehicle commute trips

Employer survey results [4] showed that employees at the surveyed companies made 8.5% fewer vehicle trips to work than had been found in the baseline surveys conducted by large employers under the area's trip reduction regulation (i.e. comparing voluntary program with a mandatory regulation). This implied that the 8.5% reduction is a conservative estimate as it is compared to another trip reduction strategy, rather than comparing to a baseline with no reduction strategies implemented. Another survey also showed that 68% of commuters drove alone to work when their employer did not encourage trip reduction. It revealed that with employer encouragement, the drive-alone rate fell 5 percentage points to 63%.

This strategy assumes a companion strategy of employer encouragement. The literature did not specify what commute options each employer provided as part of the program. Options provided may have ranged from simply providing public transit information to implementing a full TDM program with parking cash out, flex hours, emergency ride home, etc. This San Francisco Bay Area survey worked to determine the extent and impact of the emissions saved through voluntary trip reduction efforts (www.cleanairpartnership.com). It identified 454 employment sites with voluntary trip reduction programs and conducted a selected random survey of the more than 400,000 employees at those sites. The study concluded that employer encouragement makes a significant difference in employees' commute choices.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

[3] Herzog, Erik, Stacey Bricka, Lucie Audette, and Jeffra Rockwell. 2006. "Do Employee Commuter Benefits Reduce Vehicle Emissions and Fuel Consumption? Results of Fall 2004 Survey of Best Workplaces for Commuters." *Transportation Research Record 1956*, 34-41. (Table 8)

[4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 25-28) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring

Commute Trip Reduction Program – Required, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reduction that should be permitted for a combined set of strategies within a program that is contractually required of the development sponsors and managers and accompanied by a regular performance monitoring and reporting program.

Range of Effectiveness: 4.2 – 21.0% commute vehicle miles traveled (VMT) reduction and therefore 4.2 – 21.0% reduction in commute trip GHG emissions.

Measure Description:

The jurisdiction will implement a Commute Trip Reduction (CTR) ordinance. The intent of the ordinance will be to reduce drive-alone travel mode share and encourage alternative modes of travel. The critical components of this strategy are:

- Established performance standards (e.g. trip reduction requirements)
- Required implementation
- Regular monitoring and reporting

Regular monitoring and reporting will be required to assess the project's status in meeting the ordinance goals. The project should use existing ordinances, such as those in the cities of Tucson, Arizona and South San Francisco, California, as examples of successful CTR ordinance implementations. The City of Tucson requires employers with 100+ employees to participate in the program. An Alternative Mode Usage (AMU) goal and VMT reduction goal is established and each year the goal is increased. Employers persuade employees to commute via an alternative mode of transportation at least one day a week (including carpooling, vanpooling, transit, walking, bicycling, telecommuting, compressed work week, or alternatively fueled vehicle). The Transportation Demand Management (TDM) Ordinance in South San Francisco requires all non-residential developments that produce 100 average daily vehicle trips or more to meet a 35% non-drive-alone peak hour requirement with fees assessed for non-compliance. Employers have established significant CTR programs as a result.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Jurisdiction level only
- Strategies in this case study calculations included:

- ○ Parking cash out
- ○ Employer sponsored shuttles to transit station
- ○ Employer sponsored bus servicing the Bay Area
- ○ Transit subsidies

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\%\ VMT\ Reduction = A * B$$

Where

A = % shift in vehicle mode share of commute trips (from [1])

B = % employees eligible

C = Adjustment from vehicle mode share to commute VMT

Detail:

- A: 21% reduction in vehicle mode share (from [1])
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Nelson/Nygaard (2008). *South San Francisco Mode Share and Parking Report for Genentech, Inc*.(p. 8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[57]
CO_2e	4.2 – 21.0% of running
PM	4.2 – 21.0% of running
CO	4.2 – 21.0% of running
NOx	4.2 – 21.0% of running
SO_2	4.2 – 21.0% of running
ROG	2.5 – 12.6% of total

Discussion:

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligibility) = 21% * 20% = 4.2%
- High Range % VMT Reduction (100% eligibility) = 21% * 100% = 21%

Preferred Literature:

- 21% reduction in vehicle mode share

Genentech, in South San Francisco [1], achieved a 34% non-single-occupancy vehicle (non-SOV) mode share (66% SOV) in 2008. Since 2006 when SOV mode share was 74% (26% non-SOV), there has been a reduction of over 10% in drive alone share. Carpool share was 12% in 2008, compared to 11.57% in 2006. Genentech has a significant TDM program including parking cash out ($4/day), express GenenBus service around the Bay Area, free shuttles to Bay Area Rapid Transit (BART) and Caltrain, and transit subsidies. The Genentech campus surveyed for this study is a large, single-tenant campus. Taking an average transit mode share in a suburban development of 1.3% (NHTS,

[57] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_Stw Travel Survey WkdayRpt.pdf (SCAG, SANDAG, Fresno County)), this is an estimated decrease from 98.7% to 78% vehicle mode share (66% SOV + 12% carpool), a 21% reduction in vehicle mode share.

Alternative Literature:

Alternate:

- 10.7% average annual increase in use of non-SOV commute modes

For the City of Tucson [2], use of alternative commute modes increased 64.3% between 1989 and 1995. Employers integrated several key activities into their TDM plans: disseminating information, developing company policies to support TDM, investing in facility enhancements, conducting promotional campaigns, and offering subsidies or incentives to encourage AMU.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 17-19) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.3 Provide Ride-Sharing Programs

Range of Effectiveness: 1 – 15% commute vehicle miles traveled (VMT) reduction and therefore 1 - 15% reduction in commute trip GHG emissions.

Measure Description:

Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project will include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism. The project will promote ride-sharing programs through a multi-faceted approach such as:

- Designating a certain percentage of parking spaces for ride sharing vehicles
- Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
- Providing a web site or message board for coordinating rides

Measure Applicability:

- Urban and suburban context
- Negligible impact in many rural contexts, but can be effective when a large employer in a rural area draws from a workforce in an urban or suburban area, such as when a major employer moves from an urban location to a rural location.
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

% VMT Reduction = Commute * Employee

Where

Commute = % reduction in commute VMT (from [1])
Employee = % employees eligible

Detail:

- Commute: 5% (low density suburb), 10% (suburban center), 15% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

[1] VTPI. *TDM Encyclopedia*. http://www.vtpi.org/tdm/tdm34.htm; Accessed 3/5/2010.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[58]
CO_2e	1 – 15% of running
PM	1 – 15% of running
CO	1 – 15% of running
NOx	1 – 15% of running
SO_2	1 – 15% of running
ROG	0.6 – 9% of total

Discussion:

This strategy is often part of Commute Trip Reduction (CTR) Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

Example:

Sample calculations are provided below:

[58] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 5% * 20% = 1%
- High Range % VMT Reduction (urban and 100% eligible) = 15% * 1 = 15%

Preferred Literature:

- 5 – 15% reduction of commute VMT

The *Transportation Demand Management (TDM) Encyclopedia* notes that because rideshare passengers tend to have relatively long commutes, mileage reductions can be relatively large with rideshare. If ridesharing reduces 5% of commute trips it may reduce 10% of vehicle miles because the trips that are reduced are twice as long as average. Rideshare programs can reduce up to 8.3% of commute VMT, up to 3.6% of total regional VMT, and up to 1.8% of regional vehicle trips (Apogee, 1994; TDM Resource Center, 1996). Another study notes that ridesharing programs typically attract 5-15% of commute trips if they offer only information and encouragement, and 10-30% if they also offer financial incentives such as parking cash out or vanpool subsidies (York and Fabricatore, 2001).

Alternative Literature:

- Up to 1% reduction in VMT (if combined with two other strategies)

Per the Nelson\Nygaard report [2], ride-sharing would fall under the category of a minor TDM program strategy. The report allows a 1% reduction in VMT for projects with at least three minor strategies.

Alternative Literature References:

[2] Nelson\Nygaard, 2005. *Crediting Low-Traffic Developments* (p.12). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

3.4.4 Implement Subsidized or Discounted Transit Program

Range of Effectiveness: 0.3 – 20.0% commute vehicle miles traveled (VMT) reduction and therefore a 0.3 – 20.0% reduction in commute trip GHG emissions.

Measure Description:

This project will provide subsidized/discounted daily or monthly public transit passes. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible
- Transit subsidy amount
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where

A = % reduction in commute vehicle trips (VT) (from [1])

B = % employees eligible

C = Adjustment from commute VT to commute VMT

Detail:

- A:

	Daily Transit Subsidy			
	$0.75	$1.49	$2.98	$5.96
Worksite Setting	**% Reduction in Commute VT**			
Low density suburb	**1.5%**	**3.3%**	**7.9%**	**20.0%***
Suburban center	**3.4%**	**7.3%**	**16.4%**	**20.0%***
Urban location	**6.2%**	**12.9%**	**20.0%***	**20.0%***
* Discounts greater than 20% will be capped, as they exceed levels recommended by TCRP 95 Draft Chapter 19 and other literature.				

- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2010. *City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis* (p.401).

[2] Nelson\Nygaard used the following literature sources: VTPI, Todd Litman, *Transportation Elasticities, http://www.vtpi.org/elasticities.pdf*. Comsis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[59]
CO_2e	0.3 - 20% of running
PM	0.3 - 20% of running
CO	0.3 - 20% of running
NOx	0.3 - 20% of running
SO_2	0.3 - 20% of running
ROG	0. 18 - 12% of total

[59] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:

This strategy is often part of a Commute Trip Reduction (CTR), another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The literature evaluates this strategy in relation to the employer, but keep in mind that this strategy can also be implemented by a school or the development as a whole.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction ($0.75, low density suburb, 20% eligible) = 1.5% * 20% = 0.3%
- High Range % VMT Reduction ($5.96, urban, 100% eligible) = 20% * 100% = 20%

Preferred Literature:

Commute Vehicle Trip Reduction	**Daily Transit Subsidy**			
Worksite Setting	**$0.75**	**$1.49**	**$2.98**	**$5.96**
Low density suburb, rideshare oriented	0.1%	0.2%	0.6%	1.9%
Low density suburb, mode neutral	1.5%	3.3%	7.9%	21.7%*
Low density suburb, transit oriented	2.0%	4.2%	9.9%	23.2%*
Activity center, rideshare oriented	1.1%	2.4%	5.8%	16.5%
Activity center, mode neutral	3.4%	7.3%	16.4%	38.7%*
Activity center, transit oriented	5.2%	10.9%	23.5%*	49.7%*
Regional CBD/Corridor, rideshare oriented	2.2%	4.7%	10.9%	28.3%*
Regional CBD/Corridor, mode neutral	6.2%	12.9%	26.9%*	54.3%*
Regional CBD/Corridor, transit oriented	9.1%	18.1%	35.5%*	64.0%*

* Discounts greater than 20% will be capped, as they exceed levels recommended by *TCRP 95 Draft Chapter 19* and other literature.

Nelson\Nygaard (2010) updated a commute trip reduction table from VTPI Transportation Elasticities to account for inflation since the data was compiled. Data regarding commute vehicle trip reductions was originally from a study conducted by Comsis Corporation and the Institute of Transportation Engineers (ITE).

Alternative Literature:

Alternate:

- 2.4-30.4% commute vehicle trip reduction (VTR)

TCRP 95 Draft Chapter 19 [2] indicates transit subsidies in areas with good transit and restricted parking have a commute VTR of 30.4%; good transit but free parking, a commute VTR of 7.6%; free parking and limited transit 2.4%. Programs with transit subsidies have an average commute VTR of 20.6% compared with an average commute VTR of 13.1% for sites with non-transit fare subsidies.

Alternate:

- 0.03-0.12% annual greenhouse gas (GHG) reduction

Moving Cooler [3] assumed price elasticities of -0.15, -0.2, and -0.3 for lower fares 25%, 33%, and 50%, respectively. *Moving Cooler* assumes average vehicle occupancy of 1.43 and a VMT/trip of 5.12.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.4.5 Provide End of Trip Facilities

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

Non-residential projects will provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, especially to work. End-of-trip facilities provide the added convenience and security needed to encourage bicycle commuting.

End-of-trip facilities have minimal impacts when implemented alone. This strategy's effectiveness in reducing vehicle miles traveled (VMT) depends heavily on the suite of other transit, pedestrian/bicycle, and demand management measures offered. End-of-trip facilities should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 through TRT-2).

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 22% increase in bicycle mode share

The bicycle study documents a multivariate analysis of UK National Travel Survey (Wardman et al. 2007) which found significant impacts on bicycling to work. Compared to base bicycle mode share of 5.8% for work trips, outdoor parking would raise the share to 6.3%, indoor secure parking to 6.6%, and indoor parking plus showers to 7.1%. This results in an estimate 22% increase in bicycle mode share ((7.1%-5.8%)/5.8% = 22%). This suggests that such end of trip facilities have an important impact on the decision to bicycle to work. However, these effects represent reductions in VMT no greater than 0.02% (see Appendix C for calculation detail).

Alternate:

- 2 - 5% reduction in commute vehicle trips

The *Transportation Demand Management (TDM) Encyclopedia*, citing Ewing (1993), documents Sacramento's TDM ordinance. The City allows developers to claim trip reduction credits for worksite showers and lockers of 5% in central business districts, 2% within 660 feet of a transit station, and 2% elsewhere.

Alternate:

- 0.625% reduction in VMT

The *Center for Clean Air Policy (CCAP) Guidebook* attributes a 1% to 5% reduction associated with the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, a 2.5% reduction is allocated for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

[1] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review.* February 2010. (Table 2, pg. S111) http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf

[2] Victoria Transportation Policy Institute (VTPI). *TDM Encyclopedia,* http://www.vtpi.org/tdm/tdm9.htm; accessed 3/4/2010; last update 1/25/2010). VTPI citing: Reid Ewing (1993), "TDM, Growth Management, and the Other Four Out of Five Trips," *Transportation Quarterly*, Vol. 47, No. 3, Summer 1993, pp. 343-366.

[3] Center for Clean Air Policy (CCAP), *CCAP Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD

Other Literature Reviewed:

None

3.4.6 Encourage Telecommuting and Alternative Work Schedules

Range of Effectiveness: 0.07 – 5.50% commute vehicle miles traveled (VMT) reduction and therefore 0.07 – 5.50% reduction in commute trip GHG emissions.

Measure Description:

Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees participating (1 – 25%)
- Strategy implemented: 9-day/80-hour work week, 4-day/40-hour work week, or 1.5 days of telecommuting

Mitigation Method:

% Commute VMT Reduction = Commute

Where

Commute = % reduction in commute VMT (See table below)

	Employee Participation				
	1%	**3%**	**5%**	**10%**	**25%**
	% Reduction in Commute VMT				
9-day/80-hour work week	0.07%	0.21%	0.35%	0.70%	1.75%
4-day/40-hour work week	0.15%	0.45%	0.75%	1.50%	3.75%
telecommuting 1.5 days	0.22%	0.66%	1.10%	2.20%	5.5%
Source: Moving Cooler Technical Appendices, Fehr & Peers Notes: The percentages from Moving Cooler incorporate a discount of 25% for rebound effects. The percentages beyond 1% employee participation are linearly extrapolated.					

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-54) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[60]
CO_2e	0.07 – 5.50% of running
PM	0.07 – 5.50% of running
CO	0.07 – 5.50% of running
NOx	0.07 – 5.50% of running
SO_2	0.07 – 5.50% of running
ROG	0.04 – 3.3% of total

Discussion:

This strategy is often part of a Commute Trip Reduction Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The employee participation rate should be capped at a maximum of 25%. *Moving Cooler* [1] notes that roughly 50% of a typical workforce could participate in alternative

▪ [60] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

work schedules (based on job requirements) and roughly 50% of those would choose to participate.

The 25% discount for rebound effects is maintained to provide a conservative estimate and support the literature results. The project may consider removing this discount from their calculations if deemed appropriate.

Example:

N/A – no calculations are needed.

Preferred Literature:

- 0.07% - 0.22% reduction in commuting VMT

Moving Cooler [1] estimates that if 1% of employees were to participate in a 9 day/80 hour compressed work week, commuting VMT would be reduced by 0.07%. If 1% of employees were to participate in a 4 day/40 hour compressed work week, commuting VMT would reduce by 0.15%; and 1% of employees participating in telecommuting 1.5 days per week would reduce commuting VMT by 0.22%. These percentages incorporate a discounting of 25% to account for rebound effects (i.e., travel for other purposes during the day while not at the work site). The percentages beyond 1% employee participation are linearly extrapolated (see table above).

Alternative Literature:

Alternate:

- 9-10% reduction in VMT for participating employees

As documented in *TCRP 95 Draft Chapter 19* [2], a Denver federal employer's implementation of compressed work week resulted in a 14-15% reduction in VMT for participating employees. This is equivalent to the 0.15% reduction for each 1% participation cited in the preferred literature above. In the Denver example, there was a 65% participation rate out of a total of 9,000 employees. *TCRP 95* states that the compressed work week experiment has no adverse effect on ride-sharing or transit use. Flexible hours have been shown to work best in the presence of medium or low transit availability.

Alternate:

- 0.5 vehicle trips reduced per employee per week
- 13 – 20 VMT reduced per employee per week

As documented in *TCRP 95 Draft Chapter 19* [2], a study of compressed work week for 2,600 Southern California employees resulted in an average reduction of 0.5 trips per week (per participating employee). Participating employees also reduced their VMT by 13-20 miles per week. This translates to a reduction of between 5% and 10% in commute VMT, and so is lower than the 15% reduction cited for Denver government employees.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

Other Literature Reviewed:

None

3.4.7 Implement Commute Trip Reduction Marketing

Range of Effectiveness: 0.8 – 4.0% commute vehicle miles traveled (VMT) reduction and therefore 0.8 – 4.0% reduction in commute trip GHG emissions.

Measure Description:

The project will implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:

- New employee orientation of trip reduction and alternative mode options
- Event promotions
- Publications

CTR marketing is often part of a CTR program, voluntary or mandatory. CTR marketing is discussed separately here to emphasis the importance of not only providing employees with the options and monetary incentives to use alternative forms of transportation, but to clearly and deliberately promote and educate employees of the various options. This will greatly improve the impact of the implemented trip reduction strategies.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible (i.e. percentage of employers choosing to participate)

Mitigation Method:

% Commute VMT Reduction = A * B * C

Where

A = % reduction in commute vehicle trips (from [1])

B = % employees eligible

C = Adjustment from commute VT to commute VMT

Detail:

- A: 4% (per [1])
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Pratt, Dick. Personal communication regarding the *Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.* Transit Cooperative Research Program.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[61]
CO_2e	0.8 – 4.0% of running
PM	0.8 – 4.0% of running
CO	0.8 – 4.0% of running
NOx	0.8 – 4.0% of running
SO_2	0.8 – 4.0% of running
ROG	0.5 – 2.4% of total

[61] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:

The effectiveness of commute trip reduction marketing in reducing VMT depends on which commute reduction strategies are being promoted. The effectiveness levels provided below should only be applied if other programs are offered concurrently, and represent the total effectiveness of the full suite of measures.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligible) = 4% * 20% = 0.8%
- High Range % VMT Reduction (100% eligible) = 4% * 100% = 4.0%

Preferred Literature:

- 4-5% commute vehicle trips reduced with full-scale employer support

TCRP 95 Draft Chapter 19 notes the average empirically-based estimate of reductions in vehicle trips for full-scale, site-specific employer support programs alone is 4-5%. This effectiveness assumes there are alternative commute modes available which have on-going employer support. For a program to receive credit for such outreach and marketing efforts, it should contain guarantees that the program will be maintained permanently, with promotional events delivered regularly and with routine performance monitoring.

Alternative Literature:

- 5-15% reduction in commute vehicle trips
- 3% increase in effectiveness of marketed transportation demand management (TDM) strategies

VTPI [2] notes that providing information on alternative travel modes by employers was one of the most important factors contributing to mode shifting. One study (Shadoff,1993) estimates that marketing increases the effectiveness of other TDM strategies by up to 3%. Given adequate resources, marketing programs may reduce vehicle trips by 5-15%. The 5 – 15% range comes from a variety of case studies across the world. U.S. specific case studies include: 9% reduction in vehicle trips with TravelSmart in Portland (12% reduction in VMT), 4-8% reduction in vehicle trips from four cities with individualized marketing pilot projects from the Federal Transit Administration (FTA). Averaged across the four pilot projects, there was a 6.75% reduction in VMT.

Alternative Literature References:

[2] VTPI, TDM Encyclopedia – TDM Marketing; http://www.vtpi.org/tdm/tdm23.htm; accessed 3/5/2010. Table 7 (citing FTA, 2006)

Other Literature Reviewed:

None

3.4.8 Implement Preferential Parking Permit Program

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

The project will provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project will provide wide parking spaces to accommodate vanpool vehicles.

The impact of preferential parking permit programs has not been quantified by the literature and is likely to have negligible impacts when implemented alone. This strategy should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 and TRT-2) as a complementary strategy for encouraging non-single occupant vehicle travel.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No quantitative results are available. The case study in the literature implemented a preferential parking permit program as a companion strategy to a comprehensive TDM program. Employees who carpooled at least three times a week qualified to use the spaces.

Alternative Literature References:

[1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.9 Implement Car-Sharing Program

Range of Effectiveness: 0.4 – 0.7% vehicle miles traveled (VMT) reduction and therefore 0.4 – 0.7% reduction in GHG emissions.

Measure Description:

This project will implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the “last-mile” solution and link transit with commuters’ final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Urban or suburban context

Mitigation Method:

% VMT Reduction = A * B / C

Where

A = % reduction in car-share member annual VMT (from the literature)

B = number of car share members per shared car (from the literature)

C = deployment level based on urban or suburban context

Detail:

- A: 37% *(per [1])*
- B: 20 *(per [2])*
- C:

Project setting	1 shared car per X population
Urban	1,000
Suburban	2,000
Source: *Moving Cooler*	

Assumptions:

Data based upon the following references:

[1] Millard-Ball, Adam. "Car-Sharing: Where and How it Succeeds," (2005) Transit Cooperative Research Program (108). P. 4-22

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[62]
CO_2e	0.4 – 0.7% of running
PM	0.4 – 0.7% of running
CO	0.4 – 0.7% of running
NOx	0.4 – 0.7% of running
SO_2	0.4 – 0.7% of running
ROG	0.24 – 0.42% of total

[62] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:

Variable C in the mitigation method section represents suggested levels of deployment based on the literature. Levels of deployment may vary based on the characteristics of the project site and the needs of the project residents and employees. This variable should be adjusted accordingly.

The methodology for calculation of VMT reduction utilizes *Moving Cooler's* rule of thumb[63] for the estimated number of car share members per vehicle. An estimate of 50% reduction in car-share member annual VMT (from *Moving Cooler*) was high compared to other literature sources, and *TCRP 108's* 37% reduction was used in the calculations instead.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (suburban) = 37% * 20 / 2000 = 0.4%
- High Range % VMT Reduction (urban) = 37% * 20 / 1000 = 0.7%

Preferred Literature:

- 37% reduction in car-share member VMT

The *TCRP 108* [1] report conducted a survey of car-share members in the United States and Canada in 2004. The results of the survey showed that respondents, on average, drove only 63% of the average mileage they previously drove when not car-share members.

Alternative Literature:

Alternate – Residential or Citywide Based:

- 0.05-0.27% reduction in GHG
- 0.33% reduction in VMT in urban areas

Moving Cooler [2] assumed an aggressive deployment of one car per 2,000 inhabitants of medium-density census tracks and of one car per 1,000 inhabitants of high-density census tracks. This strategy assumes providing a subsidy to a public, private, or nonprofit car-sharing organization and providing free or subsidized lease for usage of public street parking. *Moving Cooler* assumed 20 members per shared car and 50% reduction in VMT per equivalent car. The percent reduction calculated assumes a percentage of urban areas are low, medium, and high density, thus resulting in a lower

▪ [63] See discussion in Alternative Literature section for "rule of thumb" detail.

than expected reduction in VMT assuming an aggressive deployment in medium and high density areas.

Alternate – Transit Station and Employer Based:

- 23-44% reduction in drive-alone mode share
- Average daily VMT reduction of 18 – 23 miles

TCRP 95 Draft Chapter 19 [3] looked at two demonstrations, CarLink I and CarLink II, in the San Francisco Bay Area. CarLink I ran from January to November 1999. It involved 54 individuals and 12 rental cars stationed at the Dublin-Pleasanton BART station. CarLink II ran from July 2001 to June 2002 and involved 107 individuals and 19 rental cars. CarLink II was based in Palo Alto in conjunction with Caltrain commuter rail service and several employers in the Stanford Research Park. Both CarLink demonstrations were primarily targeted for commuters. CarLink I had a 23% increase in rail mode share, a reduction in drive-alone mode share of 44%, and a decrease in Average Daily VMT of 18 miles. CarLink II had a VMT for round-trip commuters decrease of 23 miles per day and a mode share for drive alone decrease of 22.9%.

Alternate:

- 50% reduction in driving for car-share members

A UC Berkeley study of San Francisco's City CarShare [4] found that members drive nearly 50% less after joining. The study also found that when people joined the car-sharing organization, nearly 30% reduced their household vehicle ownership and two-thirds avoided purchasing another car. The UC Berkeley study found that almost 75% of vehicle trips made by car-sharing members were for social trips such as running errands and visiting friends. Only 25% of trips were for commuting to work or for recreation. Most trips were also made outside of peak periods. Therefore, car-sharing may generate limited impact on peak period traffic.

Alternative Literature References:

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[4] Pratt, Dick. *Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.* Transit Cooperative Research Program.

Cervero, Robert and Yu-Hsin Tsai. *San Francisco City CarShare: Travel-Demand Trends and Second-Year Impacts,* 2005. (Figure 7, p. 35, Table 7, Table 12) http://escholarship.org/uc/item/4f39b7b4

Other Literature Reviewed:

None

3.4.10 Implement a School Pool Program

Range of Effectiveness: 7.2 – 15.8% school vehicle miles traveled (VMT) Reduction and therefore 7.2 – 15.8% reduction in school trip GHG emissions.

Measure Description:

This project will create a ridesharing program for school children. Most school districts provide bussing services to public schools only. SchoolPool helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Degree of implementation of SchoolPool Program(moderate to aggressive)

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Families} * B$$

Where

Families = % families that participate (from [1] and [2])

B = adjustments to convert from participation to daily VMT to annual school VMT

Detail:

- Families: 16% (moderate implementation), 35% (aggressive implementation), (from [1] and [2])
- B: 45% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 10, 36-38) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

[2] Denver Regional Council of Governments (DRCOG). *Survey of Schoolpool Participants, April 2008.* http://www.drcog.org/index.cfm?page=SchoolPool. Obtained from Schoolpool Coordinator, Mia Bemelen.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[64]
CO_2e	7.2 – 15.8% of running
PM	7.2 – 15.8% of running
CO	7.2 – 15.8% of running
NOx	7.2 – 15.8% of running
SO_2	7.2 – 15.8% of running
ROG	4.3 – 9.5% of total

Discussion:

This strategy reflects the findings from only one case study.

Example:

Sample calculations are provided below:

- Low Range % School VMT Reduction (moderate implementation) = 16% * 45% = 7.2%
- High Range % School VMT Reduction (aggressive implementation) = 35% * 45% = 15.8%

[64] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Preferred Literature:

- 7,711 – 18,659 daily VMT reduction

As presented in the TDM Case Studies [1] compilation, the SchoolPool program in Denver saved 18,659 VMT per day in 1995, compared with 7,711 daily in 1994 – a 142% increase. The Denver Regional Council of Governments (DRCOG) [2] enrolled approximately 7,000 families and 32 private schools in the program. The DRCOG staff surveyed a school or interested families to collect home location and schedules of the students. The survey also identified prospective drivers. DRCOG then used carpool-matching software and GIS to match families. These match lists were sent to the parents for them to form their own school pools. 16% of families in the database formed carpools. The average carpool carried 3.1 students.

The SchoolPool program is still in effect and surveys are conducted every few years to monitor the effectiveness of the program. The latest survey report received was in 2008. The report showed that the participant database had increased to over 10,000 families, an 18% increase from 2005. 29% of participants used the list to form a school carpool. This percentage was lower than 35% in 2005 but higher than prior to 2005, at 24%. The average number of families in each carpool ranged from 2.1 prior to 2005 to 2.8 in 2008. The average number of carpool days per week was roughly 4.7. The number of school weeks per year was 39. Per discussions with the Schoolpool Coordinator, a main factor of success was establishing a large database. This was achieved by having parents opt-out of the database versus opting-in.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.4.11 Provide Employer-Sponsored Vanpool/Shuttle

Range of Effectiveness: 0.3 – 13.4% commute vehicle miles traveled (VMT) reduction and therefore 0.3 – 13.4% reduction in commute trip GHG emissions.

Measure Description:

This project will implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where
A = % shift in vanpool mode share of commute trips (from [1])
B = % employees eligible
C = adjustments from vanpool mode share to commute VMT

Detail:

- A: 2-20% annual reduction in vehicle mode share (*from [1]*)
  - Low range: low degree of implementation, smaller employers
  - High range: high degree of implementation, larger employers
- C: 0.67 (See Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] TCRP Report 95. *Chapter 5: Vanpools and Buspools - Traveler Response to Transportation System Changes.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c5.pdf. (p.5-8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[65]
CO_2e	0.3 – 13.4% of running
PM	0.3 – 13.4% of running
CO	0.3 – 13.4% of running
NOx	0.3 – 13.4% of running
SO_2	0.3 – 13.4% of running
ROG	0.18 – 8.0% of total

Discussion:

Vanpools are generally more successful with the largest of employers, as large employee counts create the best opportunities for employees to find a suitable number of travel companions to form a vanpool. In the San Francisco Bay Area several large companies (such as Google, Apple, and Genentech) provide regional bus transportation for their employees. No specific studies of these large buspools were identified in the literature. However, the GenenBus serves as a key element of the overall commute trip reduction (CTR) program for Genentech, as discussed in the CTR Program – Required strategy.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

[65] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- Low Range % VMT Reduction (low implementation/small employer, 20% eligible) = 2% * 20% * 0.67 = 0.3%
- High Range % VMT Reduction (high implementation/large employer, 100% eligible) = 20% * 100% * 0.67 = 13.4%

Preferred Literature:

- 2-20% vanpool mode share

TCRP Report 95 [1] notes that vanpools can capture 2 to 20% mode share. This range can be attributed to differences in programs, access to high-occupancy vehicle (HOV) lanes, and geographic range. The *TCRP Report* highlights a case study of the 3M Corporation, which with the implementation of a vanpooling program saw drive alone mode share decrease by 10 percentage points and vanpooling mode share increase to 7.8 percent. The *TCRP Report* notes most vanpools programs do best where one-way trip lengths exceed 20 miles, where work schedules are fixed and regular, where employer size is sufficient to allow matching of 5 to 12 people from the same residential area, where public transit is inadequate, and were some congestion or parking problems exist.

Alternative Literature:

In *TDM Case Studies* [2], a case study of Kaiser Permanente Hospital has shown their employer-sponsored shuttle service eliminated 380,100 miles per month, or nearly 4 million miles of travel per year, and four tons of smog precursors annually.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.12 Implement Bike-Sharing Programs

Range of Effectiveness: Grouped strategy (see SDT-5 and LUT-9)

Measure Description:

This project will establish a bike sharing program. Stations should be at regular intervals throughout the project site. The number of bike-share kiosks throughout the project area should vary depending on the density of the project and surrounding area. Paris' bike-share program places a station every few blocks throughout the city (approximately 28 bike stations/square mile). Bike-station density should increase around commercial and transit hubs.

Bike sharing programs have minimal impacts when implemented alone. This strategy's effectiveness is heavily dependent on the location and context. Bike-sharing programs have worked well in densely populated areas (examples in Barcelona, London, Lyon, and Paris) with existing infrastructure for bicycling. Bike sharing programs should be combined with **Bike Lane Street Design (SDT-5)** and **Improve Design of Development (LUT-9)**.

Taking evidence from the literature, a 135-300% increase in bicycling (of which roughly 7% are shifting from vehicle travel) results in a negligible impact (around 0.03% vehicle miles traveled (VMT) reduction (see Appendix C for calculations)).

Measure Applicability:

- Urban and suburban-center context only
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

The International Review [1] found bike mode share increases:

- from 0.75% in 2005 to 1.76% in 2007 in Barcelona (Romero, 2008) (135% increase)
- From 1% in 2001 to 2.5% in 2007 in Paris (Nadal, 2007; City of Paris, 2007) (150% increase)
- From 0.5% in 1995 to 2% in 2006 in Lyon (Bonnette, 2007; Velo'V, 2009) (300% increase)

London [2] is the only study that reports the breakdown of the prior mode In London: 6% of users reported shifting from driving, 34% from transit, 23% said they would not have travelled (Noland and Ishaque, 2006). Additionally, 68% of the bike trips were for leisure or recreation. Companion strategies included concurrent improvements in bicycle facilities.

The London program was implemented west of Central London in a densely populated area, mainly residential, with several employment centers. A relatively well developed bike network existed, including over 1,000 bike racks. The program implemented 25 locker stations with 70 bikes total.

Alternate:

- 1/3 vehicle trip reduced per day per bicycle (1,000 vehicle trips reduced per day in Lyon)

The Bike Share Opportunities [3] report looks at two case studies of bike-sharing implementation in France. In Lyon, the 3,000 bike-share system shifts 1,000 car trips to bicycle each day. Surveys indicate that 7% of the bike share trips would have otherwise been made by car. Lyon saw a 44% increase in bicycle riding within the first year of their program while Paris saw a 70% increase in bicycle riding and a 5% reduction in car use and congestion within the first year and a half of their program. The Bike Share Opportunities report found that population density is an important part of a successful program. Paris' bike share subscription rates range between 6% and 9% of the total population. This equates to an average of 75,000 rentals per day. The effectiveness of bike share programs at sub-city scales are not addressed in the literature.

Alternative Literature References:

[1] Pucher J., Dill, J., and Handy, S. Infrastructure, Programs and Policies to Increase Bicycling: An International Review. February 2010. (Table 4)

[2] Noland, R.B., Ishaque, M.M., 2006. "Smart Bicycles in an urban area: Evaluation of a pilot scheme in London." *Journal of Public Transportation*. 9(5), 71-95. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.8173&rep=rep1&type=pdf#page=76

[3] NYC Department of City Planning, *Bike-Share Opportunities in New York City,* 2009. (p. 11, 14, 24, 68) http://www.nyc.gov/html/dcp/html/transportation/td_bike_share.shtml

Other Literature Reviewed:

None

3.4.13 Implement School Bus Program

Measure Effectiveness Range: 38 – 63% School VMT Reduction and therefore 38 – 63% reduction in school trip GHG emissions[66]

Measure Description:

The project will work with the school district to restore or expand school bus services in the project area and local community.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of families expected to use/using school bus program

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % families expected to use/using school bus program

B = adjustments to convert from participation to school day VMT to annual school VMT

[66] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Detail:

- A: a typical range of 50 – 84% (see discussion section)
- B: 75% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] JD Franz Research, Inc.; *Lamorinda School Bus Program, 2003 Parent Survey, Final Report;* January 2004; obtained from Juliet Hansen, Program Manager. (p. 5)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[67]
CO_2e	38 – 63% of running
PM	38 – 63% of running
CO	38 – 63% of running
NOx	38 – 63% of running
SO_2	38 – 63% of running
ROG	23 – 38% of total

Discussion:

The literature presents a high range of effectiveness showing 84% participation by families. 50% is an estimated low range assuming the project has a minimum utilization goal. Note that the literature presents results from a single case study.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (50% participation) = 50% * 75% = 38%
- High Range % VMT Reduction (85% participation) = 84% * 75% = 63%

Preferred Literature:

- 84% penetration rate
- 2,451 – 2,677 daily vehicle trips reduced
- 441,180 – 481,860 annual vehicle trips reduced

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[67] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

The Lamorinda School Bus Program was implemented to reduce traffic congestion in the communities of Lafayette, Orinda, and Moraga, California. In 2003, a parent survey was conducted to determine the extent to which the program diverted or eliminated vehicle trips. This survey covered a representative sample of all parents (not just those signed up for the school bus program). The range of morning trips prevented is 1,266 to 1,382; the range of afternoon trips prevented is 1,185 to 1,295. Annualized, the estimated total trip prevention is between 441,180 to 481,860. 83% of parents surveyed reported that their child usually rides the bus to school in the morning. 84% usually rode the bus back home in the afternoons. The data came from surveys and the results are unique to the location and extent of the program. The report did not indicate the number of school buses in operation during the time of the survey.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.4.14 Price Workplace Parking

Range of Effectiveness: 0.1 – 19.7% commute vehicle miles traveled (VMT) reduction and therefore 0.1 -19.7% reduction in commute trip GHG emissions.

Measure Description:

The project will implement workplace parking pricing at its employment centers. This may include: explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.

Though similar to the Employee Parking "Cash-Out" strategy, this strategy focuses on implementing market rate and above market rate pricing to provide a price signal for employees to consider alternative modes for their work commute.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
  - Residential parking permits and market rate public on-street parking - to prevent spill-over parking
  - Unbundled parking - is not required but provides a market signal to employers to transfer over the, now explicit, cost of parking to the employees. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing workplace parking prices.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location
- Daily parking charge ($1 - $6)
- Percentage of employees subject to priced parking

Mitigation Method:

% VMT Reduction = A * B

Where

A = Percentage reduction in commute VMT (from [1] and [2])

B = Percent of employees subject to priced parking

Detail:

- A:

Project Location	Daily Parking Charge			
	$1	$2	$3	$6
Low density suburb	0.5%	1.2%	1.9%	2.8%
Suburban center	1.8%	3.7%	5.4%	6.8%
Urban Location	6.9%	12.5%	16.8%	19.7%
Moving Cooler, VTPI, Fehr & Peers. Note: 2009 dollars.				

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[2] VTPI, Todd Litman, *Transportation Elasticities,*(Table 15) *http://www.vtpi.org/elasticities.pdf*.

Comsis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[68]
CO_2e	0.1 – 19.7% of running
PM	0.1 – 19.7% of running
CO	0.1 – 19.7% of running
NOx	0.1 – 19.7% of running
SO_2	0.1 – 19.7% of running
ROG	0.06 – 11.8% of total

Discussion:

Priced parking can result in parking spillover concerns. The highest VMT reductions should be given only with complementary strategies such as parking time limits or neighborhood parking permits are in place in surrounding areas.

Example:

Sample calculations are provided below:

- Low Range % Commute VMT Reduction (low density suburb, $1/day, 20% priced) = 0.5% * 20% = 0.1%
- High Range % Commute VMT Reduction (urban, $6/day, 100% priced) = 19.7% * 100% = 19.7%

Preferred Literature:

The table above (variable A) was calculated using the percent commute VMT reduction from *Moving Cooler* (0.5% - 6.9% reduction for $1/day parking charge). The percentage reductions for $2 - $6 / day parking charges were extrapolated by multiplying the *Moving Cooler* percentages with the ratios from the VTPI table below (percentage increases). For example, to obtain a percent VMT reduction for a $6/day parking charge for a low density suburb, 0.5% * ((36.1%-6.5%) /6.5%) = 2.3%. The methodology was utilized to capture the non-linear effect of parking charges on trip reduction (VTPI) while maintaining a conservative estimate of percent reductions (*Moving Cooler*).

Preferred:

- 0.5-6.9% reduction in commuting VMT
- 0.44-2.07% reduction in greenhouse gas (GHG) emissions

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[68] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Moving Cooler Technical Appendices indicate that increasing employee parking costs $1 per day ($0.50 per vehicle for carpool and free for vanpools) can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 0.5% and 6.9%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area as shown in the table below. Please note that these numbers are independent of results for employee parking cash-out strategy (discussed in its own fact sheet).

		Percent Change in Commuting VMT					
Strategy	Description	Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Charges	Parking charge of $1/day	6.9%	0.9%	1.8%	0.5%	1.3%	0.5%
Source: *Moving Cooler*							

Preferred:

Commute Vehicle trip reduction	**Daily Parking Charges**			
Worksite Setting	**$0.75**	**$1.49**	**$2.98**	**$5.96**
Suburb	6.5%	15.1%	25.3%*	36.1%*
Suburban Center	12.3%	25.1%*	37.0%*	46.8%*
Central Business District	17.5%	31.8%*	42.6%*	50.0%*
Source: VTPI [2]				

* Discounts greater than 20% should be capped, as they exceed levels recommended by *TCRP 95* and other literature.

The reduction in commute trips varies by parking fee and worksite setting [2]. For daily parking fees between $1.49 and $5.96, worksites set in low-density suburbs could decrease vehicle trips by 6.5-36.1%, worksites set in activity centers could decrease vehicle trips by 12.3-46.8%, and worksites set in regional central business districts could decrease vehicles by 17.5-50%. (Note that adjusted parking fees (from 1993 dollars to 2009 dollars) were used. Adjustments were taken from the *Santa Monica General Plan EIR Report, Appendix*, Nelson\Nygaard).

Alternative Literature:

Alternate:

- 1 percentage point reduction in auto mode share
- 12.3% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [4] found that an increase of $8 per month in employee parking charges was necessary to decrease employee SOV mode split rates by one percentage point. *TCRP 95* compared 82 sites with TDM programs and found that programs with parking fees have an average commute vehicle trip reduction of 24.6%, compared with 12.3% for sites with free parking.

Alternate:

- 1% reduction in VMT ($1 per day charge)
- 2.6% reduction in VMT ($3 per day charge)

The Deakin, et al. report [5] for the California Air Resources Board (CARB) analyzed transportation pricing measures for the Los Angeles, Bay Area, San Diego, and Sacramento metropolitan areas.

Alternative Literature References:

[4] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies. (Table 19-9)

[5] Deakin, E., Harvey, G., Pozdena, R., and Yarema, G., 1996. *Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy and Equity Impacts.* Final Report. Prepared for California Air Resources Board (CARB), Sacramento, CA (Table 7.2)

Other Literature Reviewed:

None

3.4.15 Implement Employee Parking "Cash-Out"

Range of Effectiveness: 0.6 – 7.7% commute vehicle miles traveled (VMT) reduction and therefore 0.6 – 7.7% reduction in commute trip GHG emissions

Measure Description:

The project will require employers to offer employee parking "cash-out." The term "cash-out" is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.

Measure Applicability:

- Urban and suburban context
- Not applicable in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
    - Residential parking permits and market rate public on-street parking -to prevent spill-over parking
    - Unbundled parking - is not required but provides a market signal to employers to forgo paying for parking spaces and "cash-out" the employee instead. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing "cash-out" prices.

Baseline Method:

See introduction section.

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % reduction in commute VMT (from the literature)
B = % of employees eligible

Detail:

- A: Change in Commute VMT: 3.0% (low density suburb), 4.5% (suburban center), 7.7% (urban) change in commute VMT (source: Moving Cooler)

Assumptions:

Data based upon the following references:

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[69]
CO_2e	0.6 – 7.7% of running
PM	0.6 – 7.7% of running
CO	0.6 – 7.7% of running
NOx	0.6 – 7.7% of running
SO_2	0.6 – 7.7% of running
ROG	0.36 – 4.62% of running

Discussion:

Please note that these estimates are independent of results for workplace parking pricing strategy (see strategy number T# E5 for more information).

If work site parking is not unbundled, employers cannot utilize this unbundled price as a means of establishing “cash-out” prices. The table below shows typical costs for parking facilities in large urban and suburban areas in the US. This can be utilized as a reference point for establishing reasonable “cash-out” prices. Note that the table does not include external costs to parking such as added congestion, lost opportunity cost of land devoted to parking, and greenhouse gas (GHG) emissions.

	Structured (urban)	Surface (suburban)
Land (Annualized)	$1,089	$215
Construction (Annualized)	$2,171	$326

[69] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

O & M Costs	$575	$345
Annual Total	$3,835	$885
Monthly Costs	$320	$74
Source: VTPI, *Transportation Costs and Benefit Analysis II – Parking Costs*, April 2010 (p.5.4-10)		

Example:
Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 3% * 0.2 = 0.6%
- High Range % VMT Reduction (urban and 100% eligible) = 7.7% * 1 = 7.7%

Preferred Literature:
- 0.44% - 2.07% reduction in GHG emissions
- 3.0% - 7.7% reduction in commute VMT

Moving Cooler Technical Appendices indicate that reimbursing “cash-out” participants $1/day can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 3.0% and 7.7%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area is shown in the table below.

		Percent Change in Commuting VMT					
Strategy	Description	Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Cash-Out	Subsidy of $1/day	7.7%	3.7%	4.5%	3.0%	4.0%	3.0%

Alternative Literature:
Alternate:
- 2-6% reduction in vehicle trips

VTPI used synthesis data to determine parking cash out could reduce commute vehicle trips by 10-30%. VTPI estimates that the portion of vehicle travel affected by parking cash-out would be about 20% and therefore there would be only about a 2-6% total reduction in vehicle trips attributed to parking cash-out.

Alternate:

- 12% reduction in VMT per year per employee
- 64% increase in carpooling
- 50% increase in transit mode share
- 39% increase in pedestrian/bike share

Shoup looked at eight California firms that complied with California's 1992 parking cash-out law, applicable to employers of 50 or more persons in regions that do not meet the state's clean air standards. To comply, a firm must offer commuters the option to choose a cash payment equal to any parking subsidy offered. Six of companies went beyond compliance and subsidized one or more alternatives to parking (more than the parking subsidy price). The eight companies ranged in size between 120 and 300 employees, and were located in downtown Los Angeles, Century City, Santa Monica, and West Hollywood. Shoup states that an average of 12% fewer VMT per year per employee is equivalent to removing one of every eight cars driven to work off the road.

Alternative Literature Notes:

Litman, T., 2009. "Win-Win Emission Reduction Strategies." Victoria Transport Policy Institute. Website: http://www.vtpi.org/wwclimate.pdf. Accessed March 2010. (p. 5)

Donald Shoup, "Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies." *Transport Policy*, Vol. 4, No. 4, October 1997, pp. 201-216. (Table 1, p. 204)

Other Literature Reviewed:

None

3.5 Transit System Improvements

3.5.1 Provide a Bus Rapid Transit System

Range of Effectiveness: 0.02 – 3.2% vehicle miles traveled (VMT) reduction and therefore 0.02 – 3% reduction in GHG emissions.

Measure Description:

The project will provide a Bus Rapid Transit (BRT) system with design features for high quality and cost-effective transit service. These include:

- Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route.
- Frequent, high-capacity service
- High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride.
- Pre-paid fare collection to minimize boarding delays.
- Integrated fare systems, allowing free or discounted transfers between routes and modes.
- Convenient user information and marketing programs.
- High quality bus stations with Transit Oriented Development in nearby areas.
- Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.

BRT systems vary significantly in the level of travel efficiency offered above and beyond “identity” features and BRT branding. The following effectiveness ranges represent general guidelines. Each proposed BRT should be evaluated specifically based on its characteristics in terms of time savings, cost, efficiency, and way-finding advantages. These types of features encourage people to use public transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context. Other measures are more appropriate to rural areas, such as express bus service to urban activity centers with park-and-ride lots at system-efficient rural access points.
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Existing transit mode share
- Percentage of lines serving Project converting to BRT

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Riders * Mode * Lines * D

Where

Riders = % increase in transit ridership on BRT line (28% from [1])
Mode = Existing transit mode share (see table below)
Lines = Percentage of lines serving project converting to BRT
D = Adjustments from transit ridership increase to VMT (0.67, see Appendix C)

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

- D: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] FTA, August 2005. "Las Vegas Metropolitan Area Express BRT Demonstration Project", NTD, http://www.ntdprogram.gov/ntdprogram/cs?action=showRegionAgencies&region=9

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[70]
CO_2e	0.02 – 3.2% of running
PM	0.02 – 3.2% of running
CO	0.02 – 3.2% of running
NOx	0.02 – 3.2% of running
SO_2	0.02 – 3.2% of running
ROG	0.012 – 1.9% of total

Discussion:

Increases in transit ridership due to shifts from other lines do not need to be addressed since it is already incorporated in the literature.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (suburban,10% of lines) = 28% * 1.3% * 10% * 0.67 = 0.02%

[70] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- High Range % VMT Reduction (urban, 100% of lines) = 28% * 17% * 100% * 0.67 = 3.2%

Preferred Literature:

- 28% increase in transit ridership in the existing corridor

The FTA study [1] looks at the implementation of the Las Vegas BRT system. The BRT supplemented an existing route along a 7.5 mile corridor. The existing route was scaled back. Total ridership on the corridor (both routes combined) increased 61,704 monthly riders, 28% increase on the existing corridor and 1.4% increase in system ridership. The route represented an increase in 2.1% of system service miles provided.

Alternative Literature:

Alternate:

- 27-84% increase in total transit ridership

Various bus rapid transit systems obtained the following total transit ridership growth: Vancouver 96B (30%), Las Vegas Max (35-40%), Boston Silver Line (84%), Los Angeles (27-42%), and Oakland (66%). VTPI [3] obtained the BRT data from BC Transit's unpublished research. The effectiveness of a BRT strategy depends largely on the land uses the BRT serves and their design and density.

Alternate:

- 50% increase in weekly transit ridership
- 60 – 80% shorter travel time compared to vehicle trip

The Martin Luther King, Jr. East Busway in Pennsylvania opened in 1983 as a separate roadway exclusively for public buses. The busway was 6.8 miles long with six stations. Ridership has grown from 20,000 to 30,000 weekday riders over 10 years. The busway saves commuters significant time compared with driving: 12 minutes versus 30-45 minutes in the AM or an hour in the PM [4].

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section above]

[3] TDM Encyclopedia; Victoria Transport Policy Institute (2010). Bus Rapid Transit; (http://www.vtpi.org/tdm/tdm120.htm); updated 1/25/2010; accessed 3/3/2010.

[4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p.55-56) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

3.5.2 Implement Transit Access Improvements

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

This project will improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements. The benefits of Transit Access Improvements alone have not been quantified and should be grouped with Transit Network Expansion (TST-3) and Transit Service Frequency and Speed (TST-4).

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of improving transit facilities as a standalone strategy.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.5.3 Expand Transit Network

Range of Effectiveness: 0.1 – 8.2% vehicle miles travelled (VMT) reduction and therefore 0.1 – 8.2% reduction in GHG emissions[71]

Measure Description:

The project will expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage increase transit network coverage
- Existing transit mode share
- Project location: urban center, urban, or suburban

[71] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Coverage * B * Mode * D

Where

Coverage = % increase in transit network coverage
B = elasticity of transit ridership with respect to service coverage (see Table below)
Mode = existing transit mode share
D = adjustments from transit ridership increase to VMT (0.67, from Appendix C)

B:

Project setting	Elasticity
Suburban	1.01
Urban	0.72
Urban Center	0.65
Source: TCRP 95, Chapter 10	

Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

Assumptions:

Data based upon the following references:

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 10: Bus Routing and Coverage. 2004. (p. 10-8 to 10-10)

Emission Reduction Ranges and Variables:

Pollut0ant	Category Emissions Reductions[72]
CO_2e	0.1 – 8.2% of running
PM	0.1 – 8.2% of running
CO	0.1 – 8.2% of running
NOx	0.1 – 8.2% of running
SO_2	0.1 – 8.2% of running
ROG	0.06 – 4.9% of total

Discussion:

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (10% expansion, suburban) = 10% * 1.01 * 1.3% * .67 = 0.1%
- High Range % VMT Reduction (100% expansion, urban) = 100% * 0.72 * 17% * .67 = 8.2%

The low and high ranges are estimates and may vary based on the characteristics of the project.

[72] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Preferred Literature:

- 0.65 = elasticity of transit ridership with respect to service coverage/expansion (in radial routes to central business districts)
- 0.72 = elasticity of transit ridership with respect to service coverage/expansion (in central city routes)
- 1.01 = elasticity of transit ridership with respect to service coverage/expansion (in suburban routes)

TCRP 95 Chapter 10 [1] documents the results of system-wide service expansions in San Diego. The least sensitivity to service expansion came from central business districts while the largest impacts came from suburban routes. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations.

Alternative Literature:

- -0.06 = elasticity of VMT with respect to transit revenue miles

Growing Cooler [3] modeled the impact of various urban variables (including transit revenue miles and transit passenger miles) on VMT, using data from 84 urban areas around the U.S.

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section above]

[3] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute.

3.5.4 Increase Transit Service Frequency/Speed

Range of Effectiveness: 0.02 – 2.5% vehicle miles traveled (VMT) reduction and therefore 0.02 – 2.5% reduction in GHG emissions[73]

Measure Description:

This project will reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage reduction in headways (increase in frequency)
- Level of implementation
- Project setting: urban center, urban, suburban
- Existing transit mode share

[73] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Headway * B * C * Mode * E

Where

Headway = % reduction in headways
B = elasticity of transit ridership with respect to increased frequency of service (from [1])
C = adjustment for level of implementation
Mode = existing transit mode share
E = adjustments from transit ridership increase to VMT

Detail:

- Headway: reasonable ranges from 15 – 80%
- B:

Setting	Elasticity
Urban	0.32
Suburban	0.36
Source: TCRP Report 95 Chapter 9	

- C:

Level of implementation = number of lines improved / total number of lines serving project	Adjustment
<50%	50%
>=50%	85%
Fehr & Peers, 2010.	

- Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.)	

Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.

- E: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 9: Transit Scheduling and Frequency (p. 9-14)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[74]
CO_2e	0.02 – 2.5% % of running
PM	0.02 – 2.5% % of running
CO	0.02 – 2.5% % of running
NOx	0.02 – 2.5% % of running
SO_2	0.02 – 2.5% % of running
ROG	0.01 – 1.5% % of total

Discussion:

Reasonable ranges for reductions were calculated assuming existing 30-minute headways reduced to 25 minutes and 5 minutes to establish the estimated low and high reductions, respectively.

The level of implementation adjustment is used to take into account increases in transit ridership due to shifts from other lines. If increases in frequency are only applied to a percentage of the lines serving the project, then we conservatively estimate that 50% of the transit ridership increase is a shift from the existing lines. If frequency increases are applied to a majority of the lines serving the project, we conservatively assume at least some of the transit ridership (15%) comes from existing riders.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the

[74] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (15% reduction in headways, suburban, <50% implementation) = 15% * 0.36 * 50% * 1.3% *0.67 = 0.02%
- High Range % VMT Reduction (80% reduction in headways, urban, >50% implementation) = 80% * 0.32 * 85% * 17% * 0.67 = 2.5%

Preferred Literature:

- 0.32 = elasticity of transit ridership with respect to transit service (urban)
- 0.36 – 0.38 = elasticity of transit ridership with respect to transit service (suburban)

TCRP 95 Chapter 9 [1] documents the results of frequency changes in Dallas. Increases in frequency are more sensitive in a suburban environment. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations

Alternative Literature:

- 0.5 = elasticity of transit ridership with respect to increased frequency of service
- 1.5 to 2.3% increase in annual transit trips due to increased frequency of service
- 0.4-0.5 = elasticity of ridership with respect to increased operational speed
- 4% - 15% increase in annual transit trips due to increased operational speed
- 0.03-0.09% annual GHG reduction (for bus service expansion, increased frequency, and increased operational speed)

For increased frequency of service strategy, *Moving Cooler* [3] looked at three levels of service increases, 3%, 3.5% and 4.67% increases in service, resulting in a 1.5 – 2.3% increase in annual transit trips. For increased speed and reliability, Moving Cooler looked at three levels of speed/reliability increases. Improving travel speed by 10% assumed implementing signal prioritization, limited stop service, etc. over 5 years. Improving travel speed by 15% assumed all above strategies plus signal synchronization and intersection reconfiguration over 5 years. Improving travel speed by 30% assumed all above strategies and an improved reliability by 40%, integrated fare system, and implementation of BRT where appropriate. *Moving Cooler* calculates estimated 0.04-0.14% annual GHG reductions in combination with bus service expansion strategy.

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section]

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p B-32, B-33, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

3.5.5 Provide Bike Parking Near Transit

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

Provide short-term and long-term bicycle parking near rail stations, transit stops, and freeway access points. The benefits of Station Bike Parking have no quantified impacts as a standalone strategy and should be grouped with Transit Network Expansion (TST-3) and Increase Transit Service Frequency and Speed (TST-4) to encourage multi-modal use in the area and provide ease of access to nearby transit for bicyclists.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including transit station bike parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.5.6 Provide Local Shuttles

Range of Effectiveness: Grouped strategy. [See TST-4 and TST-5]

Measure Description:

The project will provide local shuttle service through coordination with the local transit operator or private contractor. The local shuttles will provide service to transit hubs, commercial centers, and residential areas. The benefits of Local Shuttles alone have not been quantified and should be grouped with Transit Network Expansion (TST-4) and Transit Service Frequency and Speed (TST-5) to solve the "first mile/last mile" problem. In addition, many of the CommuteTrip Reduction Programs (Section 2.4, TRP 1-13) also included local shuttles.

Measure Applicability:

- Urban, suburban context
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified to support the effectiveness of this strategy alone.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.6 Road Pricing/Management

3.6.1 Implement Area or Cordon Pricing

Range of Effectiveness: 7.9 – 22.0% vehicle miles traveled (VMT) reduction and therefore 7.9 – 22.0% reduction in GHG emissions.

Measure Description:

This project will implement a cordon pricing scheme. The pricing scheme will set a cordon (boundary) around a specified area to charge a toll to enter the area by vehicle. The cordon location is usually the boundary of a central business district (CBD) or urban center, but could also apply to substantial development projects with limited points of access, such as the proposed Treasure Island development in San Francisco. The cordon toll may be static/constant, applied only during peak periods, or be variable, with higher prices during congested peak periods. The toll price can be based on a fixed schedule or be dynamic, responding to real-time congestion levels. It is critical to have an existing, high quality transit infrastructure for the implementation of this strategy to reach a significant level of effectiveness. The pricing signals will only cause mode shifts if alternative modes of travel are available and reliable.

Measure Applicability:

- Central business district or urban center only

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage increase in pricing for passenger vehicles to cross cordon
- Peak period variable price or static all-day pricing (London scheme)

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- % (due to pricing) route shift, time-of-day shift, HOV shift, trip reduction, shift to transit/walk/bike

Mitigation Method:

% VMT Reduction = Cordon$ * B * C

Where

Cordon$	= % increase in pricing for passenger vehicles to cross cordon
B	= Elasticity of VMT with respect to price (from [1])
C	= Adjustment for % of VMT impacted by congestion pricing and mode shifts

Detail:

- Cordon$: reasonable range of 100 – 500% (See Appendix C for detail))
- B: 0.45 [1]
- C:

Cordon pricing scheme	Adjustment
Peak-period variable pricing	8.8%
Static all-day pricing	21%
Source: See Appendix C for detail	

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-13, B-14) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

- Referencing: VTPI, *Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior.* July 2008. www.vtpi.org

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[75]
CO_2e	7.9 - 22.0% of running
PM	7.9 - 22.0% of running
CO	7.9 - 22.0% of running
NOx	7.9 - 22.0% of running
SO_2	7.9 - 22.0% of running
ROG	4.7 – 13.2% of total

Discussion:

The amount of pricing will vary on a case-by-case basis. The 100 – 500% increase is an estimated range of increases and should be adjusted to reflect the specificities of the pricing scheme implemented. Take care in calculating the percentage increase in price if baseline is $0.00. An upper limit of 500% may be a good check point. If baseline is zero, the Project Applicant may want to conduct calculations with a low baseline such as $1.00.

These calculations assume that the project is within the area cordon, essentially assuming that 100% of project trips will be affected. See Appendix C to make appropriate adjustments.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (100% increase in price, peak period pricing) = 100% * 0.45 * 8.8% = 4.0%
- High Range % VMT Reduction (500% increase in price, all-day pricing) = 500% * 0.45 * 21% = 47.3% = 22% (established maximum based on literature)

Preferred Literature:

- -0.45 VMT elasticity with regard to pricing
- 0.04-0.08% greenhouse gas (GHG) reduction

Moving Cooler [1] assumes an average of 3% of regional VMT would cross the CBD cordon. A VMT reduction of 20% was estimated to require an average of 65 cents/mile applied to all congested VMT in the CBD, major employment, and retail centers. The

[75] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

range in GHG reductions is attributed to the range of implementation and start date. *Moving Cooler* reports an elasticity range from -0.15 to -0.47 from VTPI. *Moving Cooler* utilizes a stronger elasticity (0.45) to represent greater impact cordon pricing will have on users compared to other pricing strategies.

Alternative Literature:

- 6.5-14.0% reduction in carbon emissions
- 16-22% reduction in vehicles
- 6-9% increase in transit use

The Center for Clean Air Policy (CCAP) [2] cites two case studies in Europe, one in London and one in Stockholm, which show vehicle reductions of 16% and 22%, respectively. London's fee reduced CO_2 by 6.5%. Stockholm's program reduced injuries by 10%, increased transit use by 6-9%, and reduced carbon emissions by 14% in the central city within months of implementation.

Alternative Literature References:

[2] Center for Clean Air Policy (CCAP), *Short-term Efficiency Measures.* (p. 1) http://www.ccap.org/docs/resources/715/Short-Term%20Travel%20Efficiency%20Measures%20cut%20GHGs%209%2009%20final.pdf

CCAP cites Transport for London. *Central London Congestion Charging: Impacts Monitoring*, *Sixth Annual Report*. July 2008 http://www.tfl.gov.uk/assets/downloads/sixth-annual-impacts-monitoring-report-2008-07.pdf (p. 6) and Leslie Abboud and Jenny Clevstrom, "Stockholm's Syndrome," August 29, 2006, *Wall Street Journal.*http://transportation.northwestern.edu/mahmassani/Media/WSJ_8.06.pdf (p. 2)

Other Literature Reviewed:

None

3.6.2 Improve Traffic Flow

Range of Effectiveness: 0 - 45% reduction in GHG emissions

Measure Description:

The project will implement improvements to smooth traffic flow, reduce idling, eliminate bottlenecks, and management speed. Strategies may include signalization improvements to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds.

This measure does not take credit for any reduction in GHG emissions associated with changes to non-project traffic VMT. If Project Applicant wants to take credit for this benefit, the non-project traffic VMT would also need to be covered in the baseline conditions.

Measure Applicability:

- Urban, suburban, and rural context

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Average base-year travel speed (miles per hour (mph)) on implemented roads (congested[76] condition)

[76] A roadway is considered "congested" if operating at Level of Service (LOS) E or F

- Future travel speed (mph) on implemented roads for both a) congested and b) free-flow[77] condition
- Total vehicle miles traveled (VMT) on implemented roadways
- Total project-generated VMT

Mitigation Method:

$$\% \ CO_2 \text{ Emissions Reduction} = 1 - \frac{\text{Project GHG Emission}_{\text{post strategy}}}{\text{Project GHG emission}_{\text{baseline}}}$$

Where

Project GHG emission$_{\text{post strategy}}$ = EF_{running} after strategy implementation * project VMT
Project GHG emission$_{\text{baseline}}$ = EF_{running} before strategy implementation * project VMT
EF_{running} = emission factor for running emissions [from table presented under "Detail" below]

Detail:

mph	Grams of CO_2 / mile	
	congested	Free-flow
5	1,110	823
10	715	512
15	524	368
20	424	297
25	371	262
30	343	247
35	330	244
40	324	249
45	323	259
50	325	273
55	328	289
60	332	306
65	339	325
70	353	347
75	377	375
80	420	416
85	497	478
Source: Barth, 2008, Fehr & Peers [1]		

[77] A roadway is considered "free flow" if operating at LOS D or better

By only including the project VMT portion, the reduction is typically on scale with the percentage of cost for traffic improvements and full reduction calculated for project VMT should be used. However, if the project cost is a greater share than their contribution to the VMT on the road, than the project and non-project VMT should be calculated and the percent reduction should be multiplied by the percent cost allocation. The GHG emission reductions associated with non-project VMT (if applicable) would be calculated as follows:

Metric Tonnes GHG reduced due to improving non-Project traffic flow	=	% Cost Allocation * Non-Project VMT * ($EF_{congested}$ –$EF_{freeflow}$) / (1,000,000 gram/MT)

Where:

Non-Project VMT that the Project's cost share impacts = portion of non-project VMT

$EF_{congested}$ = emissions for congested road in g/VMT

$EF_{freeflow}$ = emissions for freeflow road in g/VMT

Assumptions:

Data based upon the following references:

[1] Barth and Boriboonsomsin, "Real World CO_2 Impacts of Traffic Congestion", *Transportation Research Record, Journal of the Transportation Research Board,* No. 2058, Transportation Research Board, National Academy of Science, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[78]
CO_2e	0 - 45% of running
PM	0 - 45% of running
CO	0 - 45% of running

[78] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

NOx	0 - 45% of running
SO_2	0 - 45% of running
ROG	0 - 27% of total

Discussion:

Care must be taken when estimating effectiveness since significantly improving traffic flow essentially lowers the cost and delay involved in travel, which under certain circumstances may induce additional VMT. [See Appendix C for a discussion on induced travel.]

The range of effectiveness presented above is a very rough estimate as emissions reductions will be highly dependent on the level of implementation and degree of congestion on the existing roadways. In addition, the low range of effectiveness was stated at 0% to highlight the potential of induced travel negating benefits achieved from this strategy.

Example:

Sample calculations are provided below:

- Signal timing coordination implementation:
  - Existing congested speeds of 25 mph
  - Conditions post-implementation: would improve to 25 mph free flow speed
  - Proposed project daily traffic generation is 200,000 VMT
  - Project CO_2 Emissions$_{baseline}$ = (371 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 74 MT of CO_2 daily
  - Project CO_2 Emissions$_{post\ strategy}$ = (262 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 52.4 MT of CO_2 daily
  - Percent CO_2emissions reduction = 1- (52.4 MT/ 74 MT) = 29%
- Speed management technique:
  - Existing free-flow speeds of 75 mph
  - Conditions post-implementation: reduce to 55 mph free flow speed
  - Proposed project daily traffic generation is 200,000 VMT
  - Project CO_2 Emissions$_{baseline}$ = (375 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 75 MT of CO_2 daily
  - Project CO_2 Emissions$_{post\ strategy}$ = (289 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 58 MT of CO_2 daily
  - Percent CO_2emissions reduction= 1 – (58 tons/ 75 tons) = 23%

Preferred Literature:

- 7 – 12% reduction in CO_2 emissions

This study [1] examined traffic conditions in Southern California using energy and emissions modeling and calculated the impacts of 1) congestion mitigation strategies to smooth traffic flow, 2) speed management techniques to reduce high free-flow speeds, and 3) suppression techniques to eliminate acceleration/deceleration associated with stop-and-go traffic. Using typical conditions on Southern California freeways, the strategies could reduce emissions by 7 to 12 percent.

The table (in the mitigation method section) was calculated using the CO_2 emissions equation from the report:

$$\ln(y) = b_0 + b_1 * x + b_2 * x^2 + b_3 * x^3 + b_4 * x^4$$

where

y = CO_2 emission in grams / mile
x = average trip speed in miles per hour (mph)

The coefficients for b_i were based off of Table 1 of the report, which then provides an equation for both congested conditions (real-world) and free-flow (steady-state) conditions.

Alternative Literature:

- 4 - 13% reduction in fuel consumption

The FHWA study [2] looks at various case studies of traffic flow improvements. In Los Angeles, a new traffic control signal system was estimated to reduce signal delays by 44%, vehicle stops by 41%, and fuel consumption by 13%. In Virginia, a study of retiming signal systems estimated reductions of stops by 25%, travel time by 10%, and fuel consumption by 4%. In California, optimization of 3,172 traffic signals through 1988 (through California's Fuel Efficient Traffic Signal Management program) documented an average reduction in vehicle stops of 16% and in fuel use of 8.6%. The 4-13% reduction in fuel consumption applies only to that vehicular travel directly benefited by the traffic flow improvements, specifically the VMT within the corridor in which the ITS is implemented and only during the times of day that would otherwise be congested without ITS. For example, signal coordination along an arterial normally congested in peak commute hours would produce a 4-13% reduction in fuel consumption only for the VMT occurring along that arterial during weekday commute hours.

Alternate:

- Up to 0.02% *increase* in greenhouse gas (GHG) emissions

Moving Cooler [3] estimates that bottleneck relief will result in an increase in GHG emissions during the 40-year period, 2010 to 2050. In the short term, however, improved roadway conditions may improve congestion and delay, and thus reduce fuel consumption. VMT and GHG emissions are projected to increase after 2030 as induced demand begins to consume the roadway capacity. The study estimates a maximum increase of 0.02% in GHG emissions.

Alternative Literature References:

[2] FHWA, *Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources*. http://www.fhwa.dot.gov/environment/glob_c5.pdf.

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.6.3 Required Project Contributions to Transportation Infrastructure Improvement Projects

Range of Effectiveness: Grouped strategy. [See RPT-2 and TST-1 through 7]

Measure Description:

The project should contribute to traffic-flow improvements or other multi-modal infrastructure projects that reduce emissions and are not considered as substantially growth inducing. The local transportation agency should be consulted for specific needs.

Larger projects may be required to contribute a proportionate share to the development and/or continuation of a regional transit system. Contributions may consist of dedicated right-of-way, capital improvements, easements, etc. The local transportation agency should be consulted for specific needs.

Refer to Traffic Flow Improvements (RPT-2) or the Transit System Improvements (TST-1 through 7) strategies for a range of effectiveness in these categories. The benefits of Required Contributions may only be quantified when grouped with related improvements.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Although no literature discusses project contributions as a standalone measure, this strategy is a supporting strategy for most operations and infrastructure projects listed in this report.

Other Literature Reviewed:

None

3.6.4 Install Park-and-Ride Lots

Range of Effectiveness: Grouped strategy. [See RPT-1, TRT-11, TRT-3, and TST-1 through 6]

Measure Description:

This project will install park-and-ride lots near transit stops and High Occupancy Vehicle (HOV) lanes. Park-and-ride lots also facilitate car- and vanpooling. Refer to Implement Area or Cordon Pricing (RPT-1), Employer-Sponsored Vanpool/Shuttle (TRT-11), Ride Share Program (TRT-3), or the Transit System Improvement strategies (TST-1 through 6) for ranges of effectiveness within these categories. The benefits of Park-and-Ride Lots are minimal as a stand-alone strategy and should be grouped with any or all of the above listed strategies to encourage carpooling, vanpooling, ride-sharing, and transit usage.

Measure Applicability:

- Suburban and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Alternate:

- 0.1 – 0.5% vehicle miles traveled (VMT) reduction

A 2005 FHWA [1] study found that regional VMT in metropolitan areas may be reduced between 0.1 to 0.5% (citing Apogee Research, Inc., 1994). The reduction potential of this strategy may be limited because it reduces the trip length but not vehicle trips.

Alternate:

- 0.50% VMT reduction per day

Washington State Department of Transportation (WSDOT) [2] notes the above number applies to countywide interstates and arterials.

Alternative Literature References:

[1] FHWA. Transportation and Global Climate Change: A Review and Analysis of the Literature – Chapter 5: Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources. http://www.fhwa.dot.gov/environment/glob_c5.pdf

[2] Washington State Department of Transportation. *Cost Effectiveness of Park-and-Ride Lots in the Puget Sound Area.* http://www.wsdot.wa.gov/research/reports/fullreports/094.1.pdf

Other Literature Reviewed:

None

3.7 Vehicles

3.7.1 Electrify Loading Docks and/or Require Idling-Reduction Systems

Range of Effectiveness: 26-71% reduction in TRU idling GHG emissions

Measure Description:

Heavy-duty trucks transporting produce or other refrigerated goods will idle at truck loading docks and during layovers or rest periods so that the truck engine can continue to power the cab cooling elements. Idling requires fuel use and results in GHG emissions.

The Project Applicant should implement an enforcement and education program that will ensure compliance with this measure. This includes posting signs regarding idling restrictions as well as recording engine meter times upon entering and exiting the facility.

Measure Applicability:

- Truck refrigeration units (TRU)

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of TRU
- Hours of operation

Baseline Method:

$$\text{GHG emission} = \frac{CO_2\ \text{Exhaust}}{\text{Activity} \times \text{AvgHP} \times LF} \times Hp \times Hr \times C \times LF$$

Where:

GHG emission = MT CO_2e

CO_2 Exhaust = Statewide daily CO_2 emission from TRU for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average TRU operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average TRU horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of TRU.

Hr = Hours of operation.

C = Unit conversion factor

LF = Load factor of TRU for the relevant horsepower tier (dimensionless). Obtained from OFFROAD 2007.

Note that this method assumes the load factor of the TRU is same as the default in OFFROAD2007.

Mitigation Method:

Electrify loading docks

TRUs will be plugged into electric loading dock instead of left idling. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:

GHG emissions = MT CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh)
Hp = Horsepower of TRU.
LF = Load factor of TRU for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

GHG Reduction %[79] $= 1 - \dfrac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$

Idling Reduction

Emissions from reduced TRU idling periods are calculated using the same methodology for the baseline scenario, but with the shorter hours of operation.

$$\text{GHG Reduction \%} = 1 - \frac{time_{mitigated}}{time_{baseline}}$$

Electrify loading docks

Power Utility	TRU Horsepower (HP)	Idling Emission Reductions[80]
LADW&P	< 15	26.3%
	< 25	26.3%
	< 50	35.8%

[79] This assumes energy from engine losses are the same.
[80] This reduction percentage applies to all GHG and criteria pollutant idling emissions.

PG&E	< 15	72.9%
	< 25	72.9%
	< 50	76.3%
SCE	< 15	61.8%
	< 25	61.8%
	< 50	66.7%
SDGE	< 15	53.5%
	< 25	53.5%
	< 50	59.5%
SMUD	< 15	67.0%
	< 25	67.0%
	< 50	71.2%

Idling Reduction

Emission reduction from shorter idling period is same as the percentage reduction in idling time.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the TRU only.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

The electrification of truck loading docks can allow properly equipped trucks to take advantage of external power and completely eliminate the need for idling. Trucks would need to be equipped with internal wiring, inverter, system, and a heating, ventilation, and air conditioning (HVAC) system. Under this mitigation measure, the direct emissions from fuel combustion are completely displaced by indirect emissions from the CO_2 generated during electricity production. The amount of electricity required depends on the type of truck and refrigeration elements; this data could be determined from manufacturer specifications. The total kilowatt-hours required should be multiplied by the carbon-intensity factor of the local utility provider in order to calculate the amount of indirect CO_2 emissions. To take credit for this mitigation measure, the Project Applicant would need to provide detailed evidence supporting a calculation of the emissions reductions.

Alternative Literature:

None

Other Literature Reviewed:

1. USEPA. 2002. Green Transport Partnership, A Glance at Clean Freight Strategies: Idle Reduction. Available online at: http://nepis.epa.gov/Adobe/PDF/P1000S9K.PDF
2. ATRI. 2009. Research Results: Demonstration of Integrated Mobile Idle Reduction Solutions. Available online at: http://www.atri-online.org/research/results/ATRI1pagesummaryMIRTDemo.pdf

None

3.7.2 Utilize Alternative Fueled Vehicles

Range of Effectiveness: Reduction in GHG emissions varies depending on vehicle type, year, and associated fuel economy.

Measure Description:

When construction equipment is powered by alternative fuels such as biodiesel (B20), liquefied natural gas (LNG), or compressed natural gas (CNG) rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg) or Fuel consumption

Baseline Method:

$$\text{Baseline } CO_2 \text{ Emission} = EF \times \frac{1}{FE} \times VMT \times C$$

Where:

Baseline CO_2 Emission	=	MT of CO_2
EF	=	CO_2 emission factor, from CCAR General Reporting Protocol (g/gallon)
VMT	=	Vehicle miles traveled (VMT) = T x L
FE	=	Fuel economy (mpg)
C	=	Unit conversion factor

$$\text{Baseline } N_2O / CH_4 \text{ Emission} = EF \times VMT \times C$$

Where:

Baseline N_2O/CH_4 Emission	=	MT of N_2O or CH_4
EF	=	N_2O or CH_4 emission factor, from CCAR General Reporting Protocol (g/mile)
VMT	=	Vehicle miles traveled (VMT) = T x L
T	=	Number of one-way trips
L	=	One-way trip length
FC	=	Fuel consumption (gallon) = VMT/FE

FE = Fuel economy (mpg)
C = Unit conversion factor

The total baseline GHG emission is the sum of the emissions of CO_2, N_2O and CH_4, adjusted by their global warming potentials (GWP):

Baseline GHG Emission
= Baseline CO_2 Emission + Baseline N_2O Emission $\times$ 310 +Baseline CH_4 Emission $\times$ 21

Where:

Baseline GHG Emission = MT of CO_2e
310 = GWP of N_2O
21 = GWP of CH_4

Mitigation Method:

Mitigated emissions from using alternative fuel is calculated using the same methodology before, but using emission factors for the alternative fuel, and fuel consumption calculated as follows:

$$GHGemissions = \frac{1}{FE} \times ER \times VMT \times EF_{CO2} + VMT \times EF_{N20} + VMT \times EF_{CH4}$$

Where:

ER = Energy ratio from US Department of Energy (see table below)
EF = Emission Factor for pollutant
VMT = Vehicle miles traveled (VMT)
FE = Fuel economy (mpg)

Fuel	Energy Ratio: Amount of fuel needed to provide same energy as			
	1 gallon of Gasoline		1 gallon of Diesel	
Gasoline	1	gal	1.13	gal
#2 Diesel	0.88	gal	1	gal
B20	0.92	gal	1.01	gal
CNG	126.67	ft^3	143.14	ft^3
LNG	1.56	gal	1.77	gal
LPC	1.37	gal	1.55	gal

Emission reductions can be calculated as:

$$\text{Reduction} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Range Not Quantified[81]
PM	Range Not Quantified
CO	Range Not Quantified
NOx	Range Not Quantified
SO_2	Range Not Quantified
ROG	Range Not Quantified

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile in 2015 is illustrated below. The CO_2 emission factor from motor gasoline in CCAR 2009 is 8.81 kg/gallon. Assuming the automobile makes two trips of 60 mile each per day, and using the current passenger car fuel economy of 27.5 mpg under the CAFE standards, then the annual baseline CO_2 emission from the automobile is:

$$8.81 \times \frac{2 \times 60 \times 365}{27.5} \times 10^{-3} = 14.0 \text{ MT/year}$$

Where 10^{-3} is the conversion factor from kilograms to MT.

Using the most recent N_2O emission factor of 0.0079 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline N_2O emission from the automobile is:

$$0.0079 \times 2 \times 365 \times 60 \times 10^{-6} = 0.000346 \text{ MT/year}$$

[81] The emissions reductions varies and depends on vehicle type, year, and the associated fuel economy. The methodology above describes how to calculate the expected GHG emissions reduction assuming the required input parameters are known.

Similarly, using the same formula with the most recent CH_4 emission factor of 0.0147 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline CH_4 emission from the automobile is calculated to be 0.000644 MT/year.

Thus, the total baseline GHG emission for the automobile is:

$$14.0 + 0.000346 \times 310 + 0.000644 \times 21 = 14.1 \text{ MT/year}$$

If compressed natural gas (CNG) is used as alternative fuel, the CNG consumption for the same VMT is:

$$\frac{2 \times 60 \times 365}{27.5} \times 126.67 = 201{,}751 \text{ ft}^3$$

Using the same formula as for the baseline scenario but with emission factors of CNG and the CNG consumption, the mitigated GHG emission can be calculated as shown in the table below

Pollutant	Emission (MT/yr)
CO_2	11.0
N_2O	0.0022
CH_4	0.0323
CO_2e	12.4

Therefore, the emission reduction is:

$$1 - \frac{12.4}{14.0} = 11.4\%$$

Notice that in the baseline scenario, N_2O and CH_4 only make up <1% of the total GHG emissions, but actually increase for the mitigated scenario and contribute to >10% of total GHG emissions.

Assumptions:

Data based upon the following references:

- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html

- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Preferred Literature:

The amount of emissions avoided from using alternative fuel vehicles can be calculated using emission factors from the California Climate Action Registry (CCAR) General Reporting Protocol [1]. Multiplying this factor by the fuel consumption or vehicle miles traveled (VMT) gives the direct emissions of CO_2 and N_2O /CH_4, respectively. Fuel consumption and VMT can be calculated interchangeably with the fuel economy (mpg). The total GHG emission is the sum of the emissions from the three chemicals multiplied by their respective global warming potential (GWP).

Assuming the same VMT, the amount of alternative fuel required to run the same vehicle fleet can be calculated by multiplying gasoline/diesel fuel consumption by the equivalent-energy ratio obtained from the US Department of Energy [2]. Using the alternative fuel consumption and the emission factors for the alternative fuel from CCAR, the mitigated GHG emissions can be calculated. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

[1] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
[2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Other Literature Reviewed:

None

3.7.3 Utilize Electric or Hybrid Vehicles

Range of Effectiveness: 0.4 - 20.3% reduction in GHG emissions

Measure Description:

When vehicles are powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the vehicles. When vehicles are powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg)

Baseline Method:

$$\text{Baseline Emission} = EF \times (1 - R) \times VMT \times C$$

Where:

Baseline Emission	=	MT of Pollutant
EF	=	Running emission factor for pollutant at traveling speed, from EMFAC.
VMT	=	Vehicle miles traveled (VMT)
R	=	Additional reduction in EF due to regulation (see Table 1)
C	=	Unit conversion factor

Mitigation Method:

<u>Fully Electric Vehicle</u>

Vehicle will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated Emission} = \text{Utility} \times \frac{1}{FE} \times VMT \times ER \times C$$

Where:

Mitigated Emission = MT of CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh)
VMT = Vehicle miles traveled (VMT)
ER = Energy Ratio = 33.4 kWh/gallon-gasoline or 37.7 kWh/gallon-diesel
FE = Fuel Economy (mpg)
C = Unit conversion factor

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

Hybrid-Electric Vehicle

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

Emission reductions can be calculated as:

$$\text{GHG Reduction\%} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

See Table VT-3.1 below.

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile with catalytic converter in 2015 is illustrated below. The running CO_2 emission factor at 30 mph from an EMFAC run of the Sacramento county with temperature of 60F and relative humidity of 45% is 336.1 g/mile. From Table VT-3.1, there will be an additional reduction of 9.1% for the emission factor in 2015 due to Pavley standard. Assuming the automobile makes two trips of 60 mile each per day, then annual baseline emission from the automobile is:

$$336.1\times(100\% - 9.1\%)\times 2\times 365\times 60\times 10^{-6} = 13.4 \text{ MT/year}$$

Where 10^{-6} is the conversion factor from grams to MT. Assuming the current passenger car fuel economy of 27.5 mpg under the CAFE standards, and using the carbon-intensity factor for PG&E, the electric provider for the Sacramento region, the mitigated emission from replacing the automobile described above with electric vehicle would be:

$$\left(456\times\frac{2\times 365\times 60}{27.5}\times 33.4\times\frac{1}{2{,}204\times 10^{3}}\right) = 11.0 \text{ MT/year}$$

Therefore, the emission reduction is:

$$1-\frac{11.0}{13.4} = 17.9\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board. EMFAC2007. Available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx
- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Preferred Literature:

The amount of emissions avoided from using electric and hybrid vehicles can be calculated using CARB's EMFAC model, which provides state-wide and regional running emission factors for a variety of on-road vehicles in units of grams per mile [1]. Multiplying this factor by the vehicle miles traveled (VMT) gives the direct emissions. For criteria pollutant, emissions can be assumed to be 100% reduced from running on electricity. For GHG, assuming the same VMT, the electricity required to run the same vehicle fleet can be calculated by dividing by the fuel economy (mph) and multiplying the gasoline-electric energy ratio obtained from the US Department of Energy [2]. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with electric vehicles. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

[1] California Air Resources Board. EMFAC2007. Available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm
[2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Other Literature Reviewed:

None

Table VT-3.1
Reduction in EMFAC Running Emission Factor from New Regulations

Year	Vehicle Class	Reduction	Pollutant	Regulation
2010	LDA/LDT/MDV	0.4%	CO_2	Pavley Standard
2011	LDA/LDT/MDV	1.6%	CO_2	Pavley Standard
2012	LDA/LDT/MDV	3.5%	CO_2	Pavley Standard
2013	LDA/LDT/MDV	5.3%	CO_2	Pavley Standard
2014	LDA/LDT/MDV	7.1%	CO_2	Pavley Standard
2015	LDA/LDT/MDV	9.1%	CO_2	Pavley Standard
2016	LDA/LDT/MDV	11.0%	CO_2	Pavley Standard
2017	LDA/LDT/MDV	13.1%	CO_2	Pavley Standard
2018	LDA/LDT/MDV	15.5%	CO_2	Pavley Standard
2019	LDA/LDT/MDV	17.9%	CO_2	Pavley Standard
2020	LDA/LDT/MDV	20.3%	CO_2	Pavley Standard
2011	Other Buses	21.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	School Bus	19.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Agriculture	17.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	4.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	6.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	4.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Agriculture	23.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT CA International Registration Plan	1.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	2.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	10.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	9.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Other Buses	25.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	28.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	45.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Agriculture	20.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	12.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	11.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
				Regulation
2012	MHDDT Out-of-state	12.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Agriculture	29.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	15.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage at Other Facilities	9.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage in Bay Area	9.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage near South Coast	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	14.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	13.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	45.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	57.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	68.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	31.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	64.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	48.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	60.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Neighboring Out-of-state	63.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage at Other Facilities	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage in Bay Area	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage near South Coast	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Singleunit	66.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	69.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	53.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	63.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	71.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	33.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	63.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	46.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	79.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	79.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	4.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	49.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	61.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	71.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	34.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	HHDDT Agriculture	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	55.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	37.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	4.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	43.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	75.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	32.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	73.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	51.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	45.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	27.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	46.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	75.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	73.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	36.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	71.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	School Bus	67.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	55.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	70.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	58.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	37.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	18.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	73.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	3.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	31.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	53.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	68.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	55.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	30.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	11.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	30.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	72.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	3.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	27.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	73.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	53.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	65.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	54.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	24.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	5.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	24.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	69.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	64.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	3.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	23.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	74.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	71.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	52.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	60.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	52.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	19.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	3.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	66.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	61.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	2.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	21.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	68.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	51.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	57.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	50.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	16.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	3.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	16.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	9.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	64.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	59.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	66.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	6.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	49.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	13.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	14.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	8.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	8.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	61.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	55.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	5.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	18.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	74.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	79.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	48.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	11.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	11.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	8.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	8.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	56.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	15.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	61.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	77.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	43.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	5.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	65.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	9.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	9.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	9.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	7.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	46.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	13.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	62.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	58.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	75.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	37.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	62.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	6.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	7.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	7.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	44.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	42.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	2.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	2.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2011	HHDDT CA International Registration Plan	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	1.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	13.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Out-of-state	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	3.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	34.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	25.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	10.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Singleunit	33.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	28.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	6.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	9.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	34.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	17.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	13.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	4.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	14.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	45.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	36.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	52.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	33.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	6.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	31.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Agriculture	27.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	11.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	2.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	42.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	34.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	43.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	32.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	29.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	3.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	43.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	35.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	38.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	43.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	35.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	1.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	45.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	14.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	7.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	17.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	46.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	38.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	56.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	32.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	7.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	41.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	42.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	15.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	16.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	51.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	43.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	6.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	40.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	40.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	12.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	2.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	48.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	41.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	49.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	41.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	34.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	9.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	10.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	48.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	51.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	33.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	37.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	9.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	9.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	40.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	39.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	54.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	45.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	21.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	48.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	60.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	3.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	40.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	9.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	39.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	47.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	54.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	2.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	65.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	39.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	25.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	7.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	38.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	44.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	16.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	43.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	47.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	63.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	33.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	19.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	56.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	6.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	6.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	39.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	37.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	47.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	13.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	61.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	13.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	53.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	4.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	37.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	38.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	35.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	10.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

4.0 Water

4.1 Water Supply

4.1.1 Use Reclaimed Water

Range of Effectiveness: Up to 40% in Northern California and up to 81% in Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Reclaimed water is water reused after wastewater treatment for non-potable uses instead of returning the water to the environment. This is different than gray water, which has not been through wastewater treatment. Reclaimed non-potable water requires significantly less energy to collect, treat, and redistribute water to the point of local areas of non-potable water consumption. Since less energy is required to provide reclaimed water, fewer GHGs will be associated with reclaimed water use compared to the average California water supply use.

This measure describes how to calculate GHG savings from using reclaimed water instead of new potable water supplies for outdoor water uses or other non-potable water uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is treated to potable standards.

Measure Applicability:

- Non-potable water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Reclaimed water use (million gallons)
- Total non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{non-potable total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e
$Water_{non\text{-}potable\ total}$ = Total volume of non-potable water used (million gallons)
Provided by Applicant
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

A million gallons of reclaimed water would use an average of 2,100 kWh electricity per million gallons of water (range of 1,200 to 3,000 kWh). Therefore the percent reduction in GHG emissions associated with implementing reclaimed water usage is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\ total}} \times \frac{Electricity_{baseline} - Electricity_{reclaimed}}{Electricity_{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for non-potable water use.
$Water_{reclaimed}$ = Total volume of reclaimed water used (million gallons)
Provided by Applicant
$Water_{non\text{-}potable\ total}$ = Total volume of non-potable water used (million gallons)
Provided by Applicant
$Electricity_{reclaimed}$ = Electricity required to treat and distribute reclaimed water (2,100 kWh/million gallons)
$Electricity_{baseline}$ = Electricity required to supply and distribute water
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\ total}} \times \frac{(3{,}500 - 2{,}100)}{3{,}500} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\ total}} \times 0.40$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\ total}} \times \frac{(11{,}111 - 2{,}100)}{11{,}111} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\ total}} \times 0.81$$

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	N. California: Up to 40% if assuming 100% reclaimed water S. California: Up to 81% if assuming 100% reclaimed water Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not quantified[82]

Discussion:

If the Project Applicant uses 100 million gallons of non-potable water for a project in Northern California, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate water by committing to using 40 million gallons of reclaimed water in place of the usual water source, the applicant would reduce the amount of GHG emissions associated with outdoor water use by 16%

$$\text{GHG Emission Reduced} = \frac{40}{100} \times 0.40 = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

GHG emissions from the mitigated scenario should be calculated based on the 2006 CEC report, which presents regional baseline electricity-use water factors and a factor of 1,200-3,000 kWh per million gallons for reclaimed water. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO_2e per kWh). The GHG emissions reductions associated with this mitigation measure are

[82] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

associated with the difference between the baseline potable water electricity-use water factor and the mitigated scenario.

Alternative Literature:

None

Other Literature Reviewed:

None

4.1.2 Use Gray Water

Range of Effectiveness: Up to 100% of outdoor water GHG emissions if outdoor water use is replaced completely with graywater

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Untreated wastewater generated from bathtubs, showers, bathroom wash basins, and clothes washing machines is known as graywater and is collected and distributed onsite for irrigation of landscape and mulch. Since graywater does not require treatment or energy to redistribute it onsite, there are negligible GHG emissions associated with the use of graywater.

This measure describes how to calculate GHG savings from using graywater instead of new potable water supplies for landscape irrigation and other outdoor uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is non-potable.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Graywater use[83] (million gallons), or:
  - Type of graywater system, which must be compliant with the California Plumbing Code, and
  - Number of residents in homes with compliant graywater systems
- Total outdoor water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{outdoor total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

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[83] Note that this is the amount of graywater used, which may be less than the amount of graywater generated. A project may generate and collect more graywater than is needed for landscape irrigation. The Project Applicant should only take credit for the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in WUW-3 and the baseline methodologies document.

Where:

GHG emissions = MT CO_2e
$Water_{outdoor\ total}$ = Total volume of outdoor water used (million gallons)
Provided by Applicant
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

If the Project Applicant cannot provide the total amount of graywater used, the graywater use can be calculated based on the following equation:

$Water_{graywater}$ =

$$\left[\left(25 \times Residents_{graywater-sbw}\right) + \left(15 \times Residents_{graywater-laundry}\right)\right] \frac{gallons}{day} \times \frac{365\ days}{year} \times \frac{1\ million\ gallons}{10^6\ gallons}$$

Where:

$Water_{graywater}$ = Total volume of graywater used (million gallons).
$Residents_{graywater-sbw}$ = Total number of residents in homes with graywater systems based on graywater generated from showers, bathtubs, and wash basins
25 = gallons per day per residential occupant from showers, bathtubs, and washbasins [1]
$Residents_{graywater-laundry}$ = Total number of residents in homes with graywater systems based on graywater generated from laundry machines
15 = gallons per day per residential occupant from laundry machines [1]

The percent reduction in GHG emissions associated with implementing graywater usage is therefore:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{oudoor\ total}} \times \frac{Electricity_{baseline} - Electricity_{graywater}}{Electricity_{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.
$Water_{graywater}$ = Total volume of graywater used (million gallons)
Provided by Applicant or calculated using equation above
$Water_{outdoor\ total}$ = Total volume of outdoor water used (million gallons)
Provided by Applicant

$Electricity_{graywater}$ = Electricity required to distribute graywater (0 kWh/million gallons)[84]
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water
Northern California Average: 3,500 kWh/million gallons [2]
Southern California Average: 11,111 kWh/million gallons [2]

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{outdoor\ total}} \times \frac{(3{,}500 - 0)}{3{,}500} = \frac{Water_{graywater}}{Water_{outdoor\ total}}$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{outdoor\ total}} \times \frac{(11{,}111 - 0)}{11{,}111} = \frac{Water_{graywater}}{Water_{outdoor\ total}}$$

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	N. California: Up to 100% if assuming 100% graywater S. California: Up to 100% if assuming 100% graywater Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not Quantified[85]

Discussion:

If the Project Applicant uses 100 million gallons of water for outdoor uses in a project in Northern California, they would calculate baseline emissions as described above and in the baseline methodologies document. If the Project Applicant then selects to mitigate water by committing to establishing graywater systems based on graywater recovery from laundry machines in 500 homes with an average of 3 people in each home, the amount of graywater used is then:

[84] In some cases the distribution of graywater will require some amount of electricity; for example, graywater generated at residences and pumped to a nearby park. In those cases, $Electricity_{graywater}$ will be non-zero.
[85] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$Water_{graywater}$ =

$$[(25\times 0)+(15\times 500\times 3)]\frac{\text{gallons}}{\text{day}}\times\frac{365\,\text{days}}{\text{year}}\times\frac{1\,\text{million gallons}}{10^6\ \text{gallons}} = 8.2 \text{ million gallons}$$

Then the Project Applicant would reduce the amount of GHG emissions associated with outdoor water use by 8.2%

$$\text{GHG Emission Reduced} = \frac{8.2}{100} = 0.082 \text{ or } 8.2\%$$

Assumptions:

Data based upon the following references:

[1] 2007 CPC, Title 24, Part 5, Chapter 16A, Part I – Nonpotable Water Reuse Systems. Available online at: http://www.hcd.ca.gov/codes/shl/2007CPC_Graywater_Complete_2-2-10.pdf

[2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

Assuming a compliant graywater system is installed, Part 1606A.0 of the California Plumbing Code (CPC) estimates 25 gallons per day per residential occupant of graywater generation from showers, bathtubs, and wash basins, and 15 gallons per day per residential occupant of graywater discharge from laundry machines. Electricity and CO_2 savings from using graywater are determined by comparing to the emissions that would have been associated with the water use if the graywater demand had instead been supplied by potable water. The baseline emissions should be calculated based on the 2006 CEC methodology. A development may generate and collect more graywater than is needed for landscape irrigation. A Project Applicant should only take credit for emissions reductions associated with the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in the baseline methodologies document and WUW-3.

Alternative Literature:

None

Other Literature Reviewed:

[3] Arizona Department of Environmental Quality. 2009. Using Gray Water at Home Brochure. Available online at: http://www.azdeq.gov/environ/water/permits/download/graybro.pdf

[4] Arizona Department of Water Resources. Technologies – Irrigation, Rainwater Harvesting, Gray Water Reuse and Artificial Turf. Available online at: http://www.azwater.gov/AzDWR/StatewidePlanning/Conservation2/Technologies/Tech%20pages%20templates/LandscapeIrrigation.htm. Accessed February 2010.

[5] AAC, Title 18, Chapter 9, Article 7. Direct Reuse of Reclaimed Water. Available online at: http://www.azsos.gov/public_services/title_18/18-09.pdf

[6] Oasis Design. Graywater Information Central. Available online at: http://www.graywater.net/. Accessed February 2010.

4.1.3 Use Locally Sourced Water Supply

Range of Effectiveness: 0 – 60% for Northern and Central California, 11 – 75% for Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. Using locally-sourced water or water from less energy-intensive sources reduces the electricity and indirect CO_2 emissions associated with water supply and transport.

This measure describes how to calculate GHG savings from using local or less energy-intensive water sources instead of water from the typical mix of Northern and Southern California sources. According to the 2006 CEC report [1], water in Northern California (which also includes the Central Coast and San Joaquin Valley for this study) is primarily supplied by deliveries from the State Water Project and groundwater, and to a lesser extent is supplied by the gravity-dominated systems of Hetch Hetchy and the Mokelumne Aqueduct. In contrast, water imported from the State Water Project is Southern California's dominant water source. The baseline scenario uses average Northern and Southern California electricity intensity factors as reported in 2006 CEC and detailed in the Baseline Method below.

Measure Applicability:

- Indoor (potable) and outdoor (non-potable) water use

Inputs:

- Total potable and non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{baseline} \times \text{Electricity}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{baseline}$ = Total volume of water used (million gallons)
Provided by Applicant

$\text{Electricity}_{baseline}$ = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)
Indoor Uses:
Northern California Average: 5,411 kWh/million gallons [1]
Southern California Average: 13,022 kWh/million gallons [1]

Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Table WSW-3.1 shows that water from local or nearby groundwater basins, nearby surface water, and gravity-dominated systems have smaller energy-intensity factors than the average Northern and Southern California energy-intensity factors. The Project Applicant should use Table WSW-3.1 to identify the outdoor and indoor electricity intensity factors associated with the Project's water source(s). The GHG emission reduction is then calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}} \times \frac{\text{Electricity}_{\text{baseline}} - \text{Electricity}_{\text{mitigated}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use

$\text{Water}_{\text{mitigated}}$ = Volume of water to be supplied from the mitigated (local or less energy-intensive) source

Provided by Applicant

$\text{Water}_{\text{baseline}}$ = Total volume of water used (million gallons)

Provided by Applicant

$\text{Electricity}_{\text{mitigated}}$ = Electricity required to distribute water for Project from mitigated (local or less-energy intensive) source

$\text{Electricity}_{\text{baseline}}$ = Baseline electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)

Indoor Uses:

Northern California Average: 5,411 kWh/million gallons [1]

Southern California Average: 13,022 kWh/million gallons [1]

Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Assuming 100% of water is sourced locally: Indoor Uses: • 0-40% reduction for Northern and Central California • 11-64% reduction for Southern California Outdoor Uses: • 0-60% reduction for Northern and Central California • 12-75% reduction for Southern California
All other pollutants	Not Quantified[86]

Discussion:

Assume a Project is located in Southern California within the Chino Basin and has a total indoor water demand of 100 million gallons. Assume 70 million gallons will be sourced from a water district which obtains its water from the typical Southern California water sources. Therefore, for these 70 million gallons the baseline outdoor water electricity-intensity factor for Southern California is used. Assume that the Project Applicant chooses to mitigate the Project by sourcing the remaining 30 million gallons from the Chino Basin. The expected GHG emission reduction is then:

$$\text{GHG Emission Reduced} = \frac{30}{100} \times \frac{11{,}111 - 4{,}298}{11{,}111} = 0.18 \text{ or } 18\%$$

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

86 Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

[2]CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF

[3]NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: http://www.nrdc.org/water/conservation/edrain/edrain.pdf

Preferred Literature:

Electricity and CO_2 savings from using locally-sourced water or water from sources which require below-average electricity intensities for supply and conveyance (such as gravity-dominated systems or local groundwater basins that are not very deep) are determined by comparing to the emissions that would have occurred if the water had instead been conveyed from typical water sources for the region. According to the 2005 and 2006 CEC reports [1,2], the typical mix of water sources in Northern and Central California is the State Water Project, groundwater, and gravity-dominated systems such as Hetch Hetchy and the Mokelumne Aqueduct. The majority of water in Southern California is supplied by imports from the State Water Project and the Colorado River Aqueduct. Examples of mitigated electricity-intensity factors are shown in Table WSW-3.1 and are based on data provided in 2006 CEC [1], 2005 CEC [2], and 2004 NRDC [3]. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO_2e per kWh). The GHG emissions reductions associated with this mitigation measure are associated with the difference between the baseline water electricity-intensity factor and the mitigated electricity-intensity factor.

Alternative Literature:

None

Other Literature Reviewed:

None

Table WSW-3.1

Energy Intensity of Water Use (kWh/MG) by Region

REGION	WATER USE SEGMENT						
	Supply & Conveyance[1]		**Treatment[1]**	**Distribution[1]**	***OUTDOOR TOTAL (NON-POTABLE)[2]***	**Wastewater Treatment[1]**	***INDOOR TOTAL (POTABLE)[3]***
Northern California	SWP to Bay Area *surface water*	3,150	111	1,272	***4,533***	1,911	***6,444***
	Hetch Hetchy to Bay Area *gravity dominated*	0	111	1,272	***1,383***	1,911	***3,294***
	Mokelumne Aqueduct to Bay Area *gravity dominated*	160	111	1,272	***1,543***	1,911	***3,454***
Central California	SWP to Central Coast *surface water*	3,150	111	1,272	***4,533***	1,911	***6,444***
	SWP to San Joaquin Valley *surface water*	1,510	111	1,272	***2,893***	1,911	***4,804***
	San Joaquin River Basin & Central Coast[4] *groundwater*	896	111	1,272	***2,279***	1,911	***4,190***
	Tulare Lake Basin[4] *groundwater*	537	111	1,272	***1,920***	1,911	***3,831***
	Fresno and Kings Counties (Westlands WD)[4] *groundwater*	2,271	111	1,272	***3,654***	1,911	***5,565***
Southern California	SWP to L.A. Basin *surface water*	8,325	111	1,272	***9,708***	1,911	***11,619***
	Colorado River Aqueduct to L.A. Basin *surface water*	6,140	111	1,272	***7,523***	1,911	***9,434***
	Chino Basin[5] *groundwater*	2,915	111	1,272	***4,298***	1,911	***6,209***
	Los Angeles[4] *groundwater*	1,780	111	1,272	***3,163***	1,911	***5,074***
	San Diego County (Sweetwater WD)[4] *groundwater*	1,433	111	1,272	***2,816***	1,911	***4,727***
	San Diego County (Yuima WD)[4]	2,029	111	1,272	***3,412***	1,911	***5,323***

REGION	WATER USE SEGMENT						
	Supply & Conveyance[1]		Treatment[1]	Distribution[1]	*OUTDOOR TOTAL (NON-POTABLE)*[2]	Wastewater Treatment[1]	*INDOOR TOTAL (POTABLE)*[3]
	groundwater						
State-wide	Local / Intrabasin	120	111	1,272	***1,503***	1,911	***3,414***
	Groundwater	4.45 kWh / MG / foot of well depth	111	1,272	***TBC***	1,911	***TBC***
	Ocean Desalination	13,800	111	1,272	***15,183***	1,911	***17,094***
	Brackish Water Desalination	3,230	111	1,272	***4,613***	1,911	***6,524***

Abbreviations:

CEC - California Energy Commission
kWh - kilowatt hour
MG - million gallons
NRDC - Natural Resources Defense Council
SWP - State Water Project
TBC - to be calculated based on well depth
WD - Water District

Notes:

1. Treatment, Distribution, and Wastewater Treatment electricity-intensity factors from 2006 CEC. Supply & Conveyance electricity-intensity factors from 2006 CEC unless otherwise noted.
2. Outdoor (Non-Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, and Distribution electricity-intensity factors.
3. Indoor (Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, Distribution, and Wastewater Treatment electricity-intensity factors.
4. Supply & Conveyance electricity-intensity factor from 2004 NRDC.
5. Supply & Conveyance electricity-intensity factor from 2005 CEC.

Sources:

CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF

NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: http://www.nrdc.org/water/conservation/edrain/edrain.pdf

4.2 Water Use

4.2.1 Install Low-Flow Water Fixtures

Range of Effectiveness: 20% of GHG emissions associated with indoor Residential water use; 17-31% of GHG emissions associated with Non-Residential indoor water use.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Installing low-flow or high-efficiency water fixtures in buildings reduces water demand, energy demand, and associated indirect GHG emissions.

This measure describes how to calculate GHG savings from installing low-flow water toilets, urinals, showerheads, or faucets, or high-efficiency clothes washers and dishwashers in residential and commercial buildings. To take credit for this mitigation measure, the Project Applicant must know the total expected indoor water demand before and after installation of low-flow or high-efficiency water fixtures. If expected water demand after implementation of the mitigation measure is not known, it can be calculated based on the information provided below. Water flow rates presented here in Tables WUW-1.1 and WUW-1.3 are based on technical specifications in the California Code of Regulations Title 20 (Appliance Efficiency Regulations) [2], Title 24 (California Green Building Standards Code) [1] and ENERGY STAR [5-8]. Indoor water end-uses for residential and commercial buildings presented here in Tables WUW-1.1 and WUW-1.2 are based on data provided in a 2003 report by the Pacific Institute for Studies in Development, Environment, and Security [3]. This report incorporates data from the most comprehensive end-use survey available to date, the 1999 Residential End Uses of Water survey published by the American Water Works Association [4], as well as California-specific population, water, and appliance data. California-specific data includes local utility water use and market penetration rates of low-flow and high-efficiency water fixtures.

The baseline scenario document describes the method to calculate baseline GHG emissions. It provides average Northern and Southern California electricity-use water factors and assumes that all water is treated to potable standards.

The percent reduction in GHG emissions is calculated based on the baseline scenario water use and the percent reduction in indoor water use achieved from a Project Applicant's commitment to installing low-flow and high-efficiency water fixtures. Table WUW-1.4 lists the estimated percent reductions in GHG emissions by water fixture and land use. The sum of all percent reductions applicable to the Project gives the overall percent reduction in GHG emissions expected from this mitigation measure. The details of these calculations are described below.

Measure Applicability:

- Indoor water use
- To meet CEQA enforcement requirements, the Project Applicant should only take credit for this mitigation measure if the clothes washers and dishwashers are supplied by the Project Applicant/builder.

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected indoor water demand, without installation of low-flow or high-efficiency fixtures (million gallons), AND
- Total expected indoor water demand, after installation of low-flow or high-efficiency fixtures (million gallons), OR
- Commitment to low-flow or high-efficiency water fixtures (toilets, showerheads, sink faucets, dishwashers, clothes washers, or all of the above)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{\text{baseline}}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water and the resulting wastewater (kWh/million gallons)
Northern California Average: 5,411 kWh/million gallons
Southern California Average: 13,022 kWh/million gallons

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project Applicant can choose to compute the percent reduction in GHG emissions in one of three ways:

Method A

The Project Applicant can use Table WUW-1.4 to calculate the overall percent reduction in GHG emissions from committing to installing certain low-flow or high-efficiency water fixtures. The Project Applicant may commit to installing fixtures based on three standards: the California Green Building Standards Code (CGBSC) mandatory requirements, the CGBSC voluntary standards, or the ENERGY STAR standards. Table WUW-1.4 presents the percent reductions in GHG emissions for each of these three standards based on water fixture type (toilet, showerhead, clothes washer, etc) and land use type (residential, office, restaurant, etc). Note that in Table WUW-1.4, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). The total percent reduction in GHG emissions expected from this mitigation measure is then simply the sum of all of the individual percent reductions:

$$\text{GHG emission reduction} = \sum \text{PercentReduction}_{\text{Fixture}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

$\text{PercentReduction}_{\text{Fixture}}$ = Percent reduction in GHG emissions from each individual water fixture (i.e. toilet, bathroom faucet, dishwasher, etc.)
Provided in Table WUW-1.4

Method B

If the Project Applicant can provide detailed and substantial evidence to support a calculation of $\text{Water}_{\text{mitigated}}$, then that value can be used to calculate the percent GHG emission reduction using the following equation:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{baseline}} - \text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

$\text{Water}_{\text{baseline}}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

$\text{Water}_{\text{mitigated}}$ = Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant or calculated using equations below

As shown in this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Method C

The Project Applicant may choose to install fixtures which exceed the requirements of the California Green Building Standards Code but have different flow rates than those specified in the Tables WUW-1.1 and WUW-1.3. To take credit for this mitigation measure, the Project Applicant would need to calculate the percent reduction in GHG emissions using the equations below. In these equations, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). More complicated equations are necessary to account for less than 100% commitment in one or more end-use categories.

$$Water_{mitigated} = \sum EndUseWater_{mitigated}$$

End-Uses are toilets, urinals, showerheads, bathroom faucets, kitchen faucets, dishwashers, clothes washers, and leaks and other.

Where,

$$EndUseWater_{mitigated} = EndUse_{PercentIndoor} \times Water_{baseline} \times \frac{EndUseFlowRate_{mitigated}}{EndUseFlowRate_{unmitigated}}$$

$EndUse_{PercentIndoor}$ = % of Indoor Water Use for that end-use
Provided in Table WUW-1.1 for Residential Buildings
Provided in Table WUW-1.1 for Non-Residential Buildings

$Water_{baseline}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

$EndUseFlowRate_{baseline}$ = Baseline current California standard water flow rate for that end-use
Provided in Table WUW-1.1 for Residential Buildings
Provided in Table WUW-1.3 for Non-Residential Buildings

$EndUseFlowRate_{mitigated}$ = Mitigated water flow rate for that end use
Provided by Applicant, supported by manufacturer specification or technical sheets

For the Leak, Other end use and all end-uses where the Project Applicant makes no commitment to installing low-flow or high-efficiency water fixtures, $EndUseFlowRate_{mitigated} = EndUseFlowRate_{unmitigated}$, so then $EndUseWater_{mitigated} = EndUse_{PercentIndoor} \times Water_{baseline}$.

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{Water_{baseline} - Water_{mitigated}}{Water_{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

$Water_{baseline}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

$Water_{mitigated}$ = Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons)
Calculated by Applicant using equation above

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Estimated 20% reduction for residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.1. Estimated 17-31% reduction for non-residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.3.
All other pollutants	Not Quantified[87]

Discussion:

In this example, assume that a Project Applicant commits to installing the following:

For residences:

- 2010 CGBSC Mandatory Requirements for toilet, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR residential standard dishwasher

For hotel:

- 2010 CGBSC Voluntary Standards for toilet, urinal, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR top-loading clothes washer
- ENERGY STAR commercial dishwasher (high temp, under counter)

Using Method A, the following equation is employed:

$$\text{GHG emission reduction} = \sum PercentReduction_{Fixture}$$

[87] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

From Table WUW-1.4, the percent reduction in GHG emissions associated with indoor water use is then:

For residences:

$$6.6\% + 4.4\% + 5.7\% + 3.3\% + 0.2\% = 20.2\%$$

For hotel:

$$13.8\% + 5.4\% + 1.2\% + 0.8\% + 1.9\% + 6.4\% + 1.5\% = 31.0\%$$

Assumptions:

Data based upon the following references:

[1] CCR Title 24, Part 11. 2010. Draft California Green Building Standards Code. Available online at: http://www.documents.dgs.ca.gov/bsc/documents/2010/Draft-2010-CALGreenCode.pdf
[2] CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605. Appliance Efficiency Regulations.
[3] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm
[4] Mayer, P.W.; DeOreo, W.B.; Opitz, E.M.; Kiefer, J.C.; Davis, W.Y.; Dziegielewski, B.; Nelson, J.O. 1999. Residential End Uses of Water. Published by the American Water Works Association Research Foundation.
[5] USEPA. ENERGY STAR: Clothes Washers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers
[6] USEPA. ENERGY STAR: Commercial Clothes Washers for Consumers. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW
[7] USEPA. ENERGY STAR: Dishwashers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers
[8] USEPA. ENERGY STAR Commercial Dishwashers Savings Calculator. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COH

Preferred Literature:

For the baseline scenario, the California Green Building Standards Code [1] specifies baseline water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets. The California Appliance Efficiency Regulation (Title 20) [2] specifies baseline water flow rates for residential and commercial dishwashers and clothes washers. For the mitigated scenario, the 2010 CGBSC also specifies water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets which become mandatory in 2011, additional voluntary flow rates for these same fixtures, and voluntary flow rates for commercial dishwashers and clothes washers. In addition, ENERGY STAR-certified residential and commercial dishwashers and clothes washers have mitigated water flow rates [5-8].

Alternative Literature:

None

Other Literature Reviewed:

[9] USEPA. Water Sense: Product Factsheets and Final Specifications. Available online at: http://www.epa.gov/watersense/products/index.html. Accessed February 2010.

USEPA WaterSense labeled products include toilets, bathroom sink faucets, and flushing urinals, and are certified to meet USEPA's standards for improved water efficiency. While WaterSense models do perform with greater water efficiency than federal standard models, they are not more efficient than the models required in California starting in 2011 due to the 2010 CGBSC. Furthermore, WaterSense models are compared to federal standard models and calculations would need to be adjusted to account for differences in California standards. USEPA reports that toilets, bathroom faucets, and showers account for 30%, 15%, and 17% of indoor household water use, respectively. USEPA reports that WaterSense toilets use 20% less water than the federal standard model, while WaterSense bathroom faucets use 30% less water. Federal standard showerheads use 2.5 gallons of water per minute while the WaterSense models use 2.0 gallons of water per minute, which is equivalent to the 2010 CGBSC Mandatory Requirement. Further, federal standard flushing urinal models use 1.0 gallons per flush, while WaterSense models uses 0.5 gallons per flush, which is equivalent to the 2010 CGBSC Mandatory Requirement.

Table WUW-1.1
Reduction in Water use from Low-flow or High-efficiency Residential Water Fixtures

Fixture	% of Indoor Water Use[1]	Water Flow Rate				
		Baseline Current California Standard[2]	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011)[3]	Mitigated 2010 California Green Building Standards Code (Voluntary)[4]	Mitigated ENERGY STAR[5]	Unit
Toilet	33%	1.6	1.28	--	--	gallons/flush
Showerhead	22%	2.5	2.0	--	--	gallons/minute @ 60 psi
Bathroom Faucet	18%	2.2	1.5	--	--	gallons/minute @ 60 psi
Kitchen Faucet		2.2	1.8	--	--	gallons/minute @ 60 psi
Standard Dishwasher	1%	6.5	--	5.8	5.0	gallons/cycle
Compact Dishwasher		4.5	--	--	3.5	gallons/cycle
Top-loading Clothes Washer	14%	6.0	--	--	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer		6.0	--	--	6.0	gallons/cycle/ cubic foot
Leaks, Other	12%	--	--	--	--	--

Notes:

1. Indoor household end use of water 2000 estimates from Figure 2-4c of the Pacific Institute report.
2. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers and clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).
3. Mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.
4. Mitigated water flow rates for dishwashers and clothes washers are voluntary.
5. In some cases, the 2011 ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code.

Table WUW-1.2
Percent Indoor Water Use by End-Use in Non-Residential Buildings

End-Use	OFFICE		HOTEL		RESTAURANT		GROCERY STORE		NON-GROCERY RETAIL STORES		K-12 SCHOOL		OTHER SCHOOL	
	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]
Restroom	26%	--	51%	--	34%	--	17%	--	26%	--	20%	--	20%	--
Toilets (72% of Restroom)	--	48%	--	46%	--	27%	--	26%	--	46%	--	51%	--	37%
Urinals (17% of Restroom)	--	11%	--	11%	--	6%	--	6%	--	11%	--	12%	--	9%
Faucets (4% of Restroom)	--	3%	--	3%	--	1%	--	1%	--	3%	--	3%	--	2%
Showers (7% of Restroom)	--	5%	--	4%	--	3%	--	2%	--	4%	--	5%	--	4%
Kitchen	3%	--	10%	--	46%	--	9%	--	4%	--	2%	--	1%	--
Faucets (57% of Kitchen)	--	4%	--	7%	--	29%	--	11%	--	6%	--	4%	--	1%
Dishwashers (24% of Kitchen)	--	2%	--	3%	--	12%	--	5%	--	2%	--	2%	--	1%
Ice Making (19% of Kitchen)	--	1%	--	2%	--	10%	--	4%	--	2%	--	1%	--	0%
Laundry	0%	0%	14%	18%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%
Other	10%	26%	5%	6%	12%	13%	22%	46%	11%	27%	6%	21%	17%	44%
Landscaping	38%	--	10%	--	6%	--	3%	--	38%	--	72%	--	61%	--
Cooling	23%	--	10%	--	2%	--	49%	--	21%	--	unknown	--	unknown	--
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:

1. Water end-use data from Figures E-1, E-2, E-5, E-6, E-7, E-8, and E-9 of Appendix E of the Pacific Institute report.
2. Indoor end-use data calculated based on the total water use data for the relevant building category and Figure 4-3 and Figure 4-4 of the Pacific Institute report. Figure 4-3 shows the breakdown of restroom water use by end-use in the commercial & industry sector. Figure 4-4 shows the breakdown of kitchen water use by end-use in the commercial & industry sector; it was assumed that all end-uses except dishwashing and ice making are associated with faucet water use.

Table WUW-1.3
Reduction in Water use from Low-flow or High-efficiency Non-Residential Water Fixtures

Fixture	Water Flow Rate				
	Baseline Current California Standard[1]	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011)[2]	Mitigated 2010 California Green Building Standards Code (Voluntary)[3]	Mitigated ENERGY STAR[4]	Unit
Toilet	1.6	1.28	1.12	--	gallons/flush
Urinal	1.0	0.5	0.5	--	gallons/flush
Showerhead	2.5	2.0	1.8	--	gallons/minute @ 60 psi
Bathroom Faucet	0.5	0.4	0.35	--	gallons/minute @ 60 psi
Kitchen Faucet	2.2	1.8	1.6	--	gallons/minute @ 60 psi
Dishwasher: High Temp, Under Counter	1.98	--	0.90	1.00	gallons/rack
Dishwasher: High Temp, Door	1.44	--	0.95	0.95	gallons/rack
Dishwasher: High Temp, Single Tank Conveyor	1.13	--	0.70	0.70	gallons/rack
Dishwasher: High Temp, Multi Tank Conveyor	1.10	--	0.70	0.54	gallons/rack
Dishwasher: Low Temp, Under Counter	1.95	--	0.98	1.70	gallons/rack
Dishwasher: Low Temp, Door	1.85	--	1.16	1.18	gallons/rack
Dishwasher: Low Temp, Single Tank Conveyor	1.23	--	0.62	0.79	gallons/rack
Dishwasher: Low Temp, Multi Tank Conveyor	0.99	--	0.62	0.54	gallons/rack
Top-loading Clothes Washer	9.5	--	8.6	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer	9.5	--	8.6	6.0	gallons/cycle/ cubic foot

Notes:

1. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers are from the ENERGY STAR Commercial Dishwasher Calculator. Baseline water flow rates for clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).

2. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.

3. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary and represent the maximum recommended flow rate in order to achieve an overall 30% reduction in water use. Mitigated water flow rates for dishwashers and clothes washers are also voluntary. The range of values shown here represents different types of commercial dishwashers (high-temperature or chemical; conveyor, door, or undercounter models). See Appendix A5 of the 2010 California Green Building Standards Code for details.

4. In some cases, the ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code. See the following ENERGY STAR website for details: http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_crit_comm_dishwashers

Table WUW-1.4

Percent Reductions in GHG emissions from Installing Low-Flow or High-Efficiency Water Fixtures

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
2010 California Green Building Standards Code (Mandatory Requirements starting in 2011):								
Toilet	6.6%	9.6%	9.2%	5.3%	5.1%	9.1%	10.3%	7.4%
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%
Showerhead	4.4%	0.9%	0.9%	0.5%	0.5%	0.9%	1.0%	0.7%
Bathroom Faucet	5.7%	0.5%	0.5%	0.3%	0.3%	0.5%	0.6%	0.4%
Kitchen Faucet	3.3%	0.8%	1.3%	5.2%	1.9%	1.0%	0.7%	0.3%
2010 California Green Building Standards Code (Voluntary Standards):								
Toilet	N/A	14.4%	13.8%	8.0%	7.7%	13.7%	15.4%	11.1%
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%
Showerhead	N/A	1.3%	1.2%	0.7%	0.7%	1.2%	1.4%	1.0%
Bathroom Faucet	N/A	0.8%	0.8%	0.4%	0.4%	0.8%	0.9%	0.6%
Kitchen Faucet	N/A	1.2%	1.9%	7.8%	2.9%	1.5%	1.1%	0.4%
Top-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Front-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%
Residential Standard Dishwasher	0.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	1.0%	1.6%	6.5%	2.5%	1.3%	0.9%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.4%	1.6%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
ENERGY STAR Standards:								
Top-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Front-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Residential Standard Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	0.9%	1.5%	5.9%	2.2%	1.2%	0.8%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.9%	1.5%	6.1%	2.3%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.2%	0.4%	1.5%	0.6%	0.3%	0.2%	0.1%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.8%	1.4%	5.5%	2.0%	1.1%	0.8%	0.3%

Notes:

N/A indicates that either (a) an improved standard does not exist, or (b) the percent of indoor water use for that fixture and land use is typically zero. For example, (a) the ENERGY STAR standard for residential clothes washers is the same as the baseline current California standard, and (b) no water is expected to be used for laundry (clothes washers) in the Office land use.

4.2.2 Adopt a Water Conservation Strategy

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. It is equal to the Percent Reduction in water commitment.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Reducing water use reduces energy demand and associated indirect GHG emissions.

This mitigation measure describes how to calculate GHG emissions reductions from a Water Conservation Strategy which achieves X% reduction in water use (where X% is the specific percentage reduction in water use committed to by the Project Applicant). The steps taken to achieve this X% reduction in water use can vary in nature and may incorporate technologies which have not yet been established at the time this document was written. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting the percent reduction in water use.

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance, treatment, and distribution is provided in the 2006 CEC report [1].

This measure may incorporate other mitigation measures (WUW-1 through 6) of this document. As such, if this measure is used, the other measures cannot be used. These measures can be consulted to assist in determining methods of quantification and typical ranges of effectiveness.

Measure Applicability:

- Indoor and/or Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected water demand, without implementation of Water Conservation Strategy (million gallons)
- Percent reduction in water use after implementation of Water Conservation Strategy (%)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$Water_{baseline}$ = Total expected water demand, without implementation of Water Conservation Strategy (million gallons)

Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the wastewater) (kWh/million gallons)

Northern California Avg (outdoor uses): 3,500 kWh/million gallons [1]

Northern California Avg (indoor uses): 5,411 kWh/million gallons [1]

Southern California Avg (outdoor uses): 11,111 kWh/million gallons [1]

Southern California Avg (indoor uses): 13,022 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

If there are percent reductions associated with both indoor and outdoor water use, the GHG emissions from indoor and outdoor water use should be calculated separately and then summed. Thus,

$$\text{Total GHG emissions} = \text{GHG emissions}_{indoor} + \text{GHG emissions}_{outdoor}$$

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use.

PercentReduction = Expected percent reduction in water use after implementation of Water Conservation Strategy (%)

Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant

All other pollutants	Not Quantified[88]

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in indoor and outdoor water usage. Therefore, if a Project Applicant implements a Water Conservation Strategy which achieves a 10% reduction in water use, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

2006 CEC report

Alternative Literature:

None

Other Literature Reviewed:

None

[88] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

4.2.3 Design Water-Efficient Landscapes

Range of Effectiveness: 0 – 70% reduction in GHG emissions from outdoor water use

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Designing water-efficient landscapes for a project site reduces water consumption and the associated indirect GHG emissions. Examples of measures which a Project Applicant should consider when designing landscapes are reducing lawn sizes, planting vegetation with minimal water needs such as California native species, choosing vegetation appropriate for the climate of the project site, and choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.

This measure describes how to calculate GHG savings from residential and commercial landscape plantings which have decreased watering demands compared to standard California landscape plantings. The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: “A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III” (“WUCOLS”) [2].

By January 1, 2010, all local water agencies were required to adopt the CDWR Model Water Efficient Landscape Ordinance or develop their own local ordinance which is at least as effective at conserving water as the Model Ordinance. Some local agencies have published or are in the process of developing local ordinances.[89] A Project Applicant may choose to use the methodology presented in a local ordinance to demonstrate a percent reduction in water use and GHG emissions; however, the calculations will be similar to the methodology presented in the CDWR Model Ordinance and re-described here.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

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[89] List of local water agencies and a description of their plans to either adopt the CDWR Model Ordinance or develop their own ordinance: ftp://ftp.water.ca.gov/Model-Water-Efficient-Landscape-Ordinance/Local-Ordinances/

- $Water_{baseline}$, to be calculated by the Project Applicant using the methodology described below
- $Water_{mitigated}$, to be calculated by the Project Applicant using the methodology described below

Baseline Method:

The Project's baseline water use is the Maximum Applied Water Allowance (MAWA) described in the Model Water Efficient Landscape Ordinance:

$$MAWA = ET_0 \times 0.62 \times [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ET_0	=	Annual Reference Evapotranspiration[90] from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area[91] includes Special Landscape Area[92] (square feet)
0.62	=	Conversion factor (to gallons per square foot)
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	=	the additional ET Adjustment Factor for Special Landscape Area

Then the baseline GHG emissions are calculated as follows:

$$\text{GHG emissions} = \text{MAWA} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)

Northern California Average (outdoor uses): 3,500 kWh/million gallons

Southern California Average (outdoor uses): 11,111 kWh/million gallons

[90] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

[91] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed for non-development (e.g., open spaces and existing native vegetation)."

[92] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Special Landscape Area (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project's mitigated water use is the Estimated Total Water Use (ETWU) described in the Model Water Efficient Landscape Ordinance:

$$\text{ETWU} = \text{ET0} \times 0.62 \times \left(\frac{\text{PF} \times \text{HA}}{\text{IE}} + \text{SLA}\right)$$

Where:

ETWU	=	Estimated total water use (gallons per year)
ET_0	=	Annual Reference Evapotranspiration from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
PF	=	Plant Factor from WUCOLS[93] see Table WUW-3.1 for examples and WUCOLS for a complete list of values
HA	=	Hydrozone Area[94] (square feet)
SLA	=	Special Landscape Area (square feet)
0.62	=	Conversion factor (to gallons per square foot)
IE	=	Irrigation Efficiency[95] (minimum 0.71)

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{MAWA} - \text{ETWU}}{\text{MAWA}}$$

[93] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Plant Factor (PF)" is a factor, when multiplied by ET_0, estimates the amount of water needed by plants." The Model Water Efficient Landscape Ordinance indicates that PF is 0-0.3 for low water use plants, 0.4-0.6 for moderate water use plants, and 0.7-1.0 for high water use plants. PF is equivalent to the "species factor" (k_s) in WUCOLS. See Table A above for examples of low, moderate, and high water use plants from WUCOLS. For a complete list of PF (k_s) values, see the species evaluation list in WUCOLS.

[94] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Hydrozone means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated."

[95] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Irrigation Efficiency (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of the ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems."

As shown in this equation, the regional electricity intensity factor and utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions. Furthermore, since ET_0 is a multiplier in both MAWA and ETWU, it cancels out and therefore ET_0 does not play a role in determining the percentage reduction in GHG emissions either.

Table WUW-3.1: Example Plant Factor (PF) Values from WUCOLS

Water Needs	PF Range	Plant Type	Species Examples
Low	0 - 0.3	tree	Quercus agrifolia (coast live oak)
			Yucca
			Pinus halepensis (Aleppo pine)
		shrub	Quercus berberidifolia (California scrub oak)
			Lonicera subspicata (chaparral honeysuckle)
			Salvia apiana (white sage)
		vine	Macfadyena unguis-cati (cat's claw)
		groundcover	Arctostaphylos spp. (manzanita)
		perennial	Monardella villosa (coyote mint)
Moderate	0.4 - 0.6	tree	Acer negundo (California box elder)
			Acer paxii (evergreen maple)
		shrub	Buxus microphylla japonica (Japanese boxwood)
		vine	Wisteria
			Aristolochia durior (Dutchman's pipe)
		groundcover	Ceratostigma plumbaginoides (dwarf plumbago)
		perennial	Monarda didyma (bee balm)
	0.6	turf grasses (warm season)	Bermudagrass
			kikuyugrass
			seashore paspalum
			St. Augustinegrass
			zoysiagrass
High	0.7 - 1.0	tree	Betula pendula (European white birch)
			Betula nigra (river/red birch)
		shrub	Cyathea cooperii (Australian tree fern)
			Cornus stolonifera (red osier dogwood)
		groundcover	Soleirolia soleirolii (baby's tears)
		perennial	Mimulus spp., herbaceous (monkey flower)
			Woodwardia radicans (European chain fern)
			Acorus gramineus (sweet flag)
	0.8	turf grasses (cool season)	annual bluegrass
			annual ryegrass
			colonial bentgrass
			creeping bentgrass
			hard fescue
			highland bentgrass
			Kentucky bluegrass
			meadow fescue
			perennial ryegrass
			red fescue
			rough-stalked bluegrass
			tall fescue

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Assuming an irrigation efficiency of 71% as specified in the Model Water Efficient Landscape Ordinance and no Special Landscape Area: • 0% reduction if 100% of vegetation is Moderate PF • 13% reduction if 40% of vegetation is Low PF, 40% is Moderate PF, and 20% is High PF • 35% reduction if 50% of vegetation is Low PF and 50% is Moderate PF • 70% reduction if 100% of vegetation is Low PF
All other pollutants	Not Quantified[96]

Discussion:

Example calculations of MAWA and ETWU are provided in the Model Water Efficient Landscape Ordinance. In this example, assume that the Project Applicant has used the equations to calculate MAWA = 100 million gallons and ETWU = 80 million gallons. Then the GHG emissions reduction is 20%:

$$\text{GHG Emission Reduced} = \frac{100-80}{100} = 0.2 \text{ or } 20\%$$

Assumptions:

Data based upon the following references:

[1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[2] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

The California Department of Water Resources Model Water Efficient Landscape Ordinance requires that the Estimated Total Water Use (ETWU) of certain landscape

[96] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

projects shall not exceed the Maximum Applied Water Allowance (MAWA) for that landscape area. The MAWA is calculated based on average irrigation efficiencies and plant factors, two major influences on the water demand of a landscape. The ETWU is calculated based on project-specific plant factors and irrigation efficiency.

Alternative Literature:

[4] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[5] The Las Pilitas Nursery website has a user-friendly and searchable database of native California plants: http://www.laspilitas.com/shop/plant-products. As shown in WUCOLS, many California native plants have minimal or very low water needs.

The equation on page 9 of WUCOLS [4] shows that water demand for irrigation landscape plantings (ETL, landscape evapotranspiration) is calculated by multiplying two parameters: the landscape coefficient (KL) and the reference evapotranspiration (ETo). KL values are based on a species factor, density factor, and microclimate factor. The guidance provides detailed instructions on how to assign project-specific values for these three factors. KL can then be divided by the irrigation efficiency to obtain the Total Water Applied, as shown on page 31 of the guidance [4]. Total Water Applied is analogous to ETWU in the methodology shown above. Thus, the detailed WUCOLS methodology could be used to perform a more rigorous calculation of ETWU which incorporates microclimate effects (e.g. windy areas, areas shaded by buildings, etc) and vegetation density effects.

Other Literature Reviewed:

None

4.2.4 Use Water-Efficient Landscape Irrigation Systems

Range of Effectiveness: 6.1% reduction in GHG emissions from outdoor water

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Using water-efficient landscape irrigation techniques such as “smart” irrigation technology reduces outdoor water demand, energy demand, and the associated GHG emissions.[97]

“Smart” irrigation control systems use weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Thus, the appropriate amount of moisture for a certain vegetation type is maintained, and excessive watering is avoided. Many companies which design and install smart irrigation systems, such as Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners, may be able to provide a site-specific estimate of the percent reduction in outdoor water use that can be expected from installing a smart irrigation system. Expected reductions are in the range of 1 – 30%, with the high end of the range associated with historically high water users. To take credit for the high end of the GHG emissions reductions based on these company quotes, the Project Applicant would need to provide detailed and substantial evidence supporting the proposed percent reduction in water use. Alternatively, the Project Applicant could apply the average percent reduction reported in a 2009 study conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities. This comprehensive study showed that smart irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California. This percent reduction is based on a two year study (one year pre and post installation of smart controllers) of over two thousand sites in seventeen different water utilities throughout northern and southern California. While the study also presents utility-specific percent reductions, variations in implementation and sample size between utilities renders these percent reductions insufficient for characterization in a mitigation measure at this time. The study also notes that for a sample of smart controllers where data was collected for three years after installation, the percent reduction in water use increased with time, with the greatest percent reduction achieved in year three.

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[97] The installation of smart irrigation controllers will be required starting in 2011 as indicated in the 2010 Draft California Green Building Standards Code. As technology advances and newer generation smart irrigation controllers become available, the Project Applicant may choose to use this mitigation measure to quantify water use and associated GHG reductions beyond what would be achieved with the standards required by the California Green Building Standards Code.

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance and distribution is provided in the 2006 CEC report [2].

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected outdoor water demand, without installation of smart landscape irrigation controller (million gallons).
- (Optional) Project-specific percent reduction in outdoor water demand, after installation of smart landscape irrigation controller. Percent reduction must be verifiable. Otherwise, use the default value of 6.1%.

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{\text{baseline}}$ = Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)
Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{\text{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.

$\text{Water}_{\text{baseline}}$ = Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)

Provided by Applicant

PercentReduction = Expected percent reduction in water use after installation of smart landscape irrigation controllers (%)
Provided by Applicant or use default 6.1%

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	6.1% unless project-specific data is provided
All other pollutants	Not Quantified[98]

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage. Therefore, if a Project Applicant uses the default percent reduction in water usage associated with installing smart landscape irrigation control systems (6.1%), the resulting reduction in GHG emissions is also 6.1%.

Assumptions:

Data based upon the following references:

[1] “Evaluation of California Weather-Based “Smart” Irrigation Controller Programs.” July 2009. Presented to the California Department of Water Resources by The Metropolitan Water District of Southern California and The East Bay Municipal Utility District. Facilitated by the California Urban Water Conservation Council. Prepared by Aquacraft Inc., National Research Center Inc., and Dr. Peter J. Bickel. Available online at: http://www.aquacraft.com/Download_Reports/Evaluation_of_California_Smart_Controller_Programs_-_Final_Report.pdf

[2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

As described above, the 2009 study [1] conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities showed that smart

[98] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California.

Alternative Literature:

When common watering systems such as in-ground sprinklers are used, much of the water applied to lawns and landscapes is not absorbed by the vegetation. Instead, it is lost through runoff or evaporation. The USEPA reports that a study by the American Water Works Association found that households with in-ground sprinkler systems used 35% more water outdoors than households without these systems, while households with drip irrigation systems used 16% more water [3]. The USEPA reports that hand-held hoses or sprinklers are often more water efficient than automatic irrigation systems.

However, “smart” automatic landscape irrigation systems do exist. Examples include systems which automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. A few references have quantified reductions from this type of irrigation strategy. The Southern Nevada Water Authority reports that smart irrigation systems can reduce outdoor water use by an average of 15 to 30 percent, depending on the system, landscape type, and location [4]. One study conducted in 40 households with historically high water use in Irvine, California showed an average reduction in outdoor water use of 16% [5,6]. Another study conducted in Santa Barbara, California households with historically high water use showed an average water savings of 26% [5,7]. A Project Applicant could also hire an EPA-certified WaterSense Irrigation Partner to design and install a new irrigation system or audit an existing system in an effort to minimize the amount of water consumed [6].

[3] USEPA. 2002. Water-Efficient Landscaping: Preventing Pollution & Using Resources Wisely. Available online at: http://www.epa.gov/npdes/pubs/waterefficiency.pdf
[4] Southern Nevada Water Authority. Smart Irrigation Controllers. Available online at: http://www.snwa.com/html/land_irrig_smartclocks.html. Accessed March 2010.
[5] Irrigation Association. Smart Controller Efficiency Testing. Available online at: http://www.irrigation.org/SWAT/Industry/case-studies.asp. Accessed March 2010.
[6] Irvine Ranch Water District, et al. 2001. Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine “ET Controller” Study. Available online at: http://www.irrigation.org/swat/images/irvine.pdf
[7] Santa Barbara County Water Agency, et al. 2003. Santa Barbara County ET Controller Distribution and Installation Program Final Report. Available online at: http://www.irrigation.org/swat/images/santa_barbara.pdf
[8] USEPA. WaterSense: Landscape Irrigation. Available online at: http://www.epa.gov/WaterSense/services/landscape_irrigation.html

4.2.5 Reduce Turf in Landscapes and Lawns

Range of Effectiveness: Varies and is equal to the percent commitment to turf reduction, assuming no other outdoor water uses

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Turf grass (i.e. lawn grass) has relatively high water needs compared to most other types of vegetation. For example, trees planted in turf generally do not need additional watering besides what is required for the turf. Water agencies in Southern California have instituted turf removal programs which provide rebates for resident who reduce the turf area in their lawns. Reducing the turf size of landscapes and lawns reduces water consumption and the associated indirect GHG emissions.[99]

This measure describes how to calculate GHG savings from reducing the turf area of an existing lawn by X square feet, or designing a lawn to have X square feet less than the turf area of a standard lawn at the project location.[100]

Additional GHG emissions reductions may occur due to a reduction in fertilizer usage. Since this will vary based on individual occupant behavior, this reduction in GHG emissions from decreased fertilizer usage is not quantified.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Turf area of existing lawn or standard lawn at the project location (square feet)
- Turf area reduction commitment (square feet reduced or percent of baseline reduced)

Baseline Method:

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[99] See the SoCal WaterSmart Residential Turf Program description at http://socalwatersmart.com/index.php?option=com_content&view=article&id=77&Itemid=10. Accessed March 2010.

[100] The Project Applicant would need to provide a value for and evidence supporting this "standard-sized lawn." This value is likely to vary greatly depending on the type of building (single-family, condo, apartment complex, commercial space) as well as location (region in California, urban or suburban).

The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III" [2].

The Project Applicant should first calculate the amount of water required to support the existing turf or standard-sized turf ($Water_{baseline}$).[101] In the equations below, "crop" also represents "turf grass," or lawn grasses.

$$ET_C = K_c \times ET_0$$

Where:

ET_C = Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration[102] (inches water/day)

K_C = Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless)
Species-specific; provided in Table WUW-5.1 below

ET_0 = Reference Evapotransporation, the amount of water lost by a reference crop (inches water/day)
Region-specific; provided in Appendix A of the CDWR Model Water Efficient Landscape Ordinance [1]

[101] Page 10 of the CDWR report explains that the objective of landscape management is to maintain the "health, appearance, and reasonable growth" of plants, and not necessarily to replenish all of the water lost at maximum evapotranspiration rates. Thus, the CDWR methodology presented here calculates only the amount of water required to sustain the health, appearance, and growth of the plants.

[102] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

Table WUW-5.1: Crop Coefficient for Turf Grasses

Category	Kc	Species
cool season grasses	0.8	annual bluegrass annual ryegrass colonial bentgrass creeping bentgrass hard fescue highland bentgrass Kentucky bluegrass meadow fescue perennial ryegrass red fescue rough-stalked bluegrass tall fescue
warm season grasses	0.6	Bermudagrass kikuyugrass seashore paspalum St. Augustinegrass zoysiagrass

Reference: p. 6 and p. 137 of CDWS report

Then: $$Water_{baseline} = ETC \times Area_{baseline} \times 0.62 \times 365$$

Where:

$Water_{baseline}$ = Volume of water required to support the baseline turf (gallons/year)
$Area_{baseline}$ = Area of existing or standard turf (square feet)
Provided by the Applicant
0.62 = conversion factor (gallons/squarefoot·inches water)
365 = conversion factor (days/year)
ETC = Crop evapotranspiration
Calculated using the equation on page 280

Then the baseline GHG emissions are calculated as follows:

$$GHG\ emissions = Water_{baseline} \times Electricity \times Utility$$

Where:

GHG emissions = MT CO_2e
Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)

Northern California Average (outdoor uses): 3,500 kWh/million gallons
Southern California Average (outdoor uses): 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The equations above show that the GHG emissions are directly proportional to the water demand, which is in turn directly proportional to the area of the turf. Therefore, only the area of the existing or standard turf and the commitment to turf area reduction (square feet reduced or percent of baseline reduced) are needed to calculate the percent reduction in GHG emissions:

$$\text{GHG emission reduction} = \frac{\text{Area}_{\text{reduction}}}{\text{Area}_{\text{baseline}}} = \text{AreaPercentReduction}$$

Where:

$\text{Area}_{\text{reduction}}$ = Area of turf to be reduced (square feet)
Provided by the Applicant
$\text{Area}_{\text{baseline}}$ = Area of existing or standard turf (square feet)
Provided by the Applicant
AreaPercentReduction = Percent reduction in turf area (%)
Provided by the Applicant

As shown in this equation, the regional electricity intensity factor for water and the utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming 100% reduction in turf grass area. This would be the case for rock-lawns, for example.
All other pollutants	Not Quantified[103]

Discussion:

In this example, assume that the Project Applicant has provided detailed evidence to show that the turf area of a standard lawn at the project location is 8,000 square feet. If the Project Applicant then commits to reducing the turf area of lawns by 3,000 square feet, then the GHG emissions reduction is 37.5%.

[103] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$$\text{GHG Emission Reduced} = \frac{3{,}000}{8{,}000} = 0.375 \text{ or } 37.5\%$$

Assumptions:

Data based upon the following references:

[1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[2] California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

See above

Alternative Literature:

None

Other Literature Reviewed:

None

4.2.6 Plant Native or Drought-Resistant Trees and Vegetation

Range of Effectiveness: Best Management Practice; may be quantified if substantial evidence is available.

Measure Description:

California native plants within their natural climate zone and ecotype need minimal watering beyond normal rainfall, so less water is needed for irrigating native plants than non-native species. Drought-resistant vegetation needs even less watering. Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Thus, planting native and drought-resistant vegetation reduces water use and the associated GHGs. Designing landscapes with native plants can provide many other benefits, including reducing the need for fertilization and pesticide use, and providing a more natural habitat for native wildlife. Although there is much anecdotal evidence for the benefits of planting native vegetation, few scientific studies have quantified the actual water savings. Therefore, this mitigation measure would most likely be employed as a Best Management Practice. Future studies may quantify the water-saving benefits of planting native or drought-resistant vegetation. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a percent reduction in water use. The percent reduction would be applied to the baseline water use, calculated according to the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Percent reduction in water use, calculated using detailed and substantial evidence
- $Water_{baseline}$, to be calculated by the Project Applicant using the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document

Baseline Method

See WUW-3 (Design water efficient landscapes)

Mitigation Method

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{baseline}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.

$\text{Water}_{baseline}$ = Baseline water demand, without planting native or drought-resistant vegetation

Provided by Applicant, calculated using baseline methodology of Mitigation Measure WUW-3

PercentReduction = Expected percent reduction in water use resulting from planting native or drought-resistant vegetation

Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	Not Quantified[104]

Discussion:

Currently there is not sufficient substantial evidence supporting a generalized reduction in emissions due to planting native or drought tolerant species. However, if the project applicant is able to provide sufficient substantial evidence supporting a reduction in water usage associated with native or drought tolerant species, the percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage. Therefore, if a Project Applicant can support a 10% reduction in water use by native and drought tolerant species, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

None

[104] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Alternative Literature:

The EPA reports that while there is anecdotal evidence for the water-saving benefits of planting native and drought-resistant vegetation, there are very few scientific studies available which quantify the benefits. There are several good resources available which describe the qualitative benefits. The California Native Plant Society provides many resources for designing a native plant garden, including how to identify native plants and where to buy them. The Las Pilitas Nursery provides similar resources and also lists species of drought-resistant plants that are best for specific California regions. The EPA also provides tips for designing landscapes with native plants.

USEPA. "Exploring the Environmental, Social and Economic Benefits Conference," December 6-7, 2004. USEPA. Greenacres: Landscaping with Native Plants Research Needs. Available online at: http://www.epa.gov/greenacres/conf12_04/conf_A.html. Accessed March 2010.
California Native Plant Society. Homepage. Available online at: http://www.cnps.org/. Accessed March 2010.
Las Pilitas Nursery. Drought Tolerant or Resistant Native Plants. Available online at: http://www.laspilitas.com/garden/Drought_resistant_plants_for_a_California_garden.html. Accessed March 2010.
USEPA. Greenacres: Native Plants Brochure. Available online at: http://www.epa.gov/greenacres/navland.html#Introduction. Accessed March 2010.

Alternative Literature:

None.

Other Literature Reviewed:

None

5.0 Landscaping Equipment

5.1 Landscaping Equipment

5.1.1 Prohibit Gas Powered Landscape Equipment.

Measure Description:

Electric lawn equipment including lawn mowers, leaf blowers and vacuums, shredders, trimmers, and chain saws are available. When electric landscape equipment is used in place of a conventional gas-powered equipment, direct GHG emissions from natural gas combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment.

Measure Applicability:

[1] Landscaping equipment

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of landscaping equipment
- Hours of operation

Baseline Method:

Look up landscape equipment emission factor based on type of fuel used:

Landscaping Equipment Horsepower	CO_2 Emission Factor from Gasoline (g/hp-hr)
< 25	429.44
25 – 50	783.30
50 – 120	774.50
120 –175	753.25
> 175	732.00

$$\text{GHG emission} = EF \times Hp \times LF \times Hr \times 10^{-6}$$

Where:

GHG emission = MT CO_2e per year

EF = CO_2 emission factor for the relevant horsepower tier show in table above (g/hp-hr). Obtained from OFFROAD2007.

Hp = Horsepower of landscaping equipment
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation per year
10^{-6} = Unit conversion from grams to MT

Mitigation Method:

Landscaping equipment will run on electricity instead of gasoline. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:
GHG emissions = MT CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh). See table below.
Hp = Horsepower of landscaping equipment.
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

Power Utility	Carbon-Intensity (lb CO_2e/kWh)
LADWP	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

GHG Reduction %[105] $= 1 - \dfrac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$

EF = Emission Factor for the relevant fuel horsepower tier (g/hp-hr) Obtained from OFFROAD2007. See accompanying tables.

Emission Reduction Ranges and Variables:

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
LADWP	< 25	2.5%
	25 – 50	46.5%

[105] This assumes energy from engine losses are the same.

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
	50 – 120	45.9%
	120 –175	44.4%
	> 175	42.8%
PG&E	< 25	64.1%
	25 – 50	80.3%
	50 – 120	80.1%
	120 –175	79.5%
	> 175	78.9%
SCE	< 25	49.5%
	25 – 50	72.3%
	50 – 120	72.0%
	120 –175	71.2%
	> 175	70.4%
SDGE	< 25	38.5%
	25 – 50	66.3%
	50 – 120	65.9%
	120 –175	64.9%
	> 175	63.9%
SMUD	< 25	56.3%
	25 – 50	76.0%
	50 – 120	75.8%
	120 –175	75.1%
	> 175	74.3%

Criteria pollutants will be reduced by reduction in combustion. They will also increase through the increase in energy use. However, the increase may not be in the same air basin.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the landscaping equipment only.

Assumptions:

Data based upon the following references:

California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm

California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD model, which provides state-wide and regional emission factors for different types of landscaping equipment that can be converted to grams per horsepower-hour [1]. Multiplying this factor by the typical horsepower and load factor of the equipment and number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours and power output as the gas-powered equipment, the same amount of energy consumption multiplied by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric landscape equipment. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Companion Strategy:

In order to take credit for Mitigation Measure 80, a Project Applicant must also commit to providing electrical outlets on the exterior of all buildings (Mitigation Measure 60) so that electrical lawn equipment is compatible with built facilities.

Alternative Literature:

None

Notes:

1. CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.

Other Literature Reviewed:

A. USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
B. USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: http://www.epa.gov/air/community/details/yardequip.html. Accessed February 2010.
C. CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: http://www.arb.ca.gov/msprog/aqip/lger.htm. Accessed February 2010.
D. SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: http://www.aqmd.gov/tao/lawnmower2009.html. Accessed February 2010.
E. VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.

F. SMAQMD. Mow Down Air Pollution. Available online at: http://www.airquality.org/mobile/mowdown/index.shtml. Accessed February 2010.

5.1.2 Implement Lawnmower Exchange Program

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment

Measure Description:
When electric and rechargeable battery-powered lawnmowers are used in place of conventional gas-powered lawnmowers, direct GHG emissions from fuel combustion are displaced by indirect GHG emissions associated with the electricity used to power the equipment. The indirect GHG emissions from electricity generation are expected to be significantly less than the direct GHG emissions from gasoline or diesel fuel combustion. Since the magnitude of the GHG emissions reduction depends on the equipment model (including electric power efficiency and battery recharge time), hours of operation, fuel displaced, and number of lawnmowers replaced, the exact GHG emissions reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to allow for educated residents and commercial tenants to reduce their contribution to GHG emissions from landscaping. Many California Air Districts, including eight air districts supported by the CARB Lawn and Garden Equipment Replacement (LGER) Project, already have lawnmower exchange programs in place. This Best Management Practice could involve participating in these established lawnmower exchange programs, supplementing the established programs, or implementing a new program for the Project. The Project Applicant should check with the local air district regarding participating in established programs. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- GHG emissions from landscaping

Assumptions:
Data based upon the following references:

- CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: http://www.arb.ca.gov/msprog/aqip/lger.htm. Accessed February 2010.
- SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: http://www.aqmd.gov/tao/lawnmower2009.html. Accessed February 2010.
- VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.
- SMAQMD. Mow Down Air Pollution. Available online at: http://www.airquality.org/mobile/mowdown/index.shtml. Accessed February 2010.

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
CARB's Lawn and Garden Equipment Replacement (LGER) Project was established to encourage the use of cordless zero-emission lawn and garden equipment and to help bring more electric equipment to the market. The LGER Project provides vouchers for electric cordless residential lawn mowers valued up to $250 for each gas-powered lawnmower turned in. The LGER Project provides grants to eight air districts with existing lawnmower exchange programs, including AVAQMD, MDAQMD, SCAQMD, SDAPCD, SJVAPCD, SMAQMD, VCAPCD, and YSAQMD. Individual air districts may offer vouchers of different values.

Alternative Literature:

None

Other Literature Reviewed:

- USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
- USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: http://www.epa.gov/air/community/details/yardequip.html. Accessed February 2010.

5.1.3 Electric Yard Equipment Compatibility

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment. Not applicable on its own. This measure enhances effectiveness of A-1 and A-2.

Measure Description:

This measure is required to be grouped with measures A-1 “Prohibit Gas Powered Landscape Equipment” and A-2 “Implement a Lawnmower Exchange Program.” In order for measures A-1 and A-2 to be feasible, electrical outlets on the exterior of buildings must be accessible so that the electric landscaping equipment can be charged. In this mitigation measure, the Project Applicant commits to providing electrical outlets on the exterior of Project buildings as necessary for sufficient powering of electric lawnmowers and other landscaping equipment.

Measure Applicability:

- This measure is part of a grouped measure
- This measure contributes to reductions in GHG emissions from landscaping

Emission Reduction Ranges and Variables:

This measure is a Best Management Practice grouped with other measures and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Preferred Literature:

None

6.0 Solid Waste

6.1 Sold Waste

6.1.1 Institute or Extend Recycling and Composting Services

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
The transport and decomposition of landfill waste and the flaring of landfill gas all produce GHG emissions. Decomposition of waste produces methane, a GHG which has a global warming potential over 20 times that of CO_2. The transport of waste from the site of generation to the landfill produces GHG emissions from the combustion of the fuel used to power the vehicle. Choosing waste management practices which reduce the amount of waste sent to landfills will reduce GHG emissions. Strategies to reduce landfill waste include increasing recycling, reuse, and composting, and encouraging lifestyle choices and office practices which reduce waste generation.

Current protocols for quantifying emissions reductions from diverted landfill waste developed by the USEPA and the California Center for Integrated Waste Management Board (CIWMB) are based on life-cycle approaches, which reflect emissions and reductions in both the upstream and downstream processes around waste management. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Furthermore, while tools are available to quantify the avoided landfill GHG emissions from a specified amount of diverted or recycled waste, taking credit for this mitigation measure also requires the determination of the effects of instituting or extending recycling and composting services. Since both government and privately-sponsored recycling and composting programs vary dramatically in scope, waste materials accepted, and outreach efforts, no literature references exist which provide default values for percent of waste diverted. To take credit for this measure, the Project Applicant would need to provide detailed and substantial evidence supporting the amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Measure Applicability:

[2] Solid waste disposed to landfill

Inputs:
The following information needs to be provided by the Project Applicant:

- For residential buildings: number of residents
- For shopping malls and office buildings: building square footage
- For public venues: annual number of visitors
- For all other commercial buildings: number of employees
- Waste disposal method
- Amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Baseline Method:
The Project Applicant must first calculate the total amount of waste generated at the project.

For residential buildings and all commercial buildings except shopping malls and offices:

$$Waste_{baseline\ total} = People \times DisposalRate$$

For shopping malls and office buildings:

$$Waste_{baseline\ total} = SF \times DisposalRate$$

Where:

People = Number of residents, employees, or visitors (for public venues)
Provided by Applicant
SF = Square feet of building
Provided by Applicant
DisposalRate = Annual disposal rate of waste (tons/resident/year, tons/employee/year, or tons/visitor/year)
From Tables SW-1.1 and SW-1.2

The total waste stream is then portioned into material-specific streams (paper, glass, metal, plastic, etc.) using the percentages listed in Table SW-1.3.

USEPA's Waste Reduction Model (WARM) is used to quantify baseline emissions and emissions reductions from diverting landfill waste to composting or recycling. This web-based tool is available online at http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_Form.html. The required inputs are the tons of waste associated with one of three waste management practices: landfill (baseline scenario), recycled (mitigated scenario), combusted (not applicable in California), and composted (mitigated scenario). The amount of each type of waste in tons is entered into the "Tons Landfilled" column in the Baseline Scenario of

WARM to calculate the baseline GHG emissions in metric MT carbon equivalent (MTCE). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used.

Mitigation Method:
In WARM, the project applicant specifies the amount of waste associated with each of the three alternative scenarios: waste reduced (e.g. reduced waste generation), waste recycled, and waste composted. WARM then calculates the GHG savings associated with the alternative scenarios as compared with the baseline scenario.

Assumptions:
Data based upon the following reference:

- USEPA. 2009. Waste Reduction Model. Available online at: http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html
- CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf
- CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry

Preferred Literature:
USEPA's WARM was developed to track GHG emission reductions from various waste management options. This tool calculates the GHG emissions associated with a baseline waste management strategy, as well as those associated with an alternative strategy that may include source reduction, recycling, composting, combusting, or landfilling. WARM then calculates the GHG savings associated with the alternative strategy as compared with the baseline strategy. WARM requires input of the estimated tons of waste per material type per disposal strategy. There are 34 different material types (e.g., aluminum cans, mixed paper, yard trimmings, carpet). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used. Note that WARM was developed based on a life-cycle approach, which reflects emissions and reductions in both the upstream and downstream processes around waste management. USEPA notes that emission factors developed based on this life cycle approach are not appropriate for use in GHG inventories.

Alternative Literature:
None

Other Literature Reviewed:

- HF&H Consultants. 2008. 5-Year Audit Program Assessment and Final Report. Prepared for StopWaste.Org. Available online at: http://www.stopwaste.org/docs/revised_assessment_report-final_1-08.pdf
- StopWaste.Org. 2008. Multifamily Dwelling Recycling Evaluation Report. Available online at: http://www.stopwaste.org/docs/mfd_evaluation_rpt.pdf

Table SW-1.1
Residential Waste Disposal Rates

Multi-family Homes		
All Counties	All Regions	**Annual Disposal Rate (tons/resident/year)**
		0.46

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**
Alameda	Bay Area	0.42
Alpine	Mountain	0.25
Amador	Mountain	0.25
Butte	Central Valley	0.36
Calaveras	Mountain	0.25
Colusa	Central Valley	0.36
Contra Costa	Bay Area	0.42
Del Norte	Coastal	0.44
El Dorado	Mountain	0.25
Fresno	Central Valley	0.36
Glenn	Central Valley	0.36
Humbolt	Coastal	0.44
Imperial	Southern	0.41
Inyo	Mountain	0.25
Kern	Southern	0.41
Kings	Central Valley	0.36
Lake	Central Valley	0.36
Lassen	Mountain	0.25
Los Angeles	Southern	0.41
Madera	Central Valley	0.36
Marin	Bay Area	0.42
Mariposa	Mountain	0.25
Mendocino	Coastal	0.44
Merced	Central Valley	0.36
Modoc	Mountain	0.25
Mono	Mountain	0.25

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**
Monterey	Coastal	0.44
Napa	Bay Area	0.42
Nevada	Mountain	0.25
Orange	Southern	0.41
Placer	Central Valley	0.36
Plumas	Mountain	0.25
Riverside	Southern	0.41
Sacramento	Central Valley	0.36
San Benito	Coastal	0.44
San Bernardino	Southern	0.41
San Diego	Southern	0.41
San Francisco	Bay Area	0.42
San Joaquin	Central Valley	0.36
San Luis Obispo	Southern	0.41
San Mateo	Bay Area	0.42
Santa Barbara	Southern	0.41
Santa Clara	Bay Area	0.42
Santa Cruz	Coastal	0.44
Shasta	Mountain	0.25
Sierra	Mountain	0.25
Siskiyou	Mountain	0.25
Solano	Bay Area	0.42
Sonoma	Coastal	0.44
Stanislaus	Central Valley	0.36
Sutter	Central Valley	0.36
Tehama	Central Valley	0.36
Trinity	Mountain	0.25
Tulare	Central Valley	0.36
Tuolumne	Mountain	0.25
Ventura	Southern	0.41
Yolo	Central Valley	0.36
Yuba	Central Valley	0.36

Source:

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**

CalRecycle. Solid Waste Characterization Database: Residential Waste Disposal Rates. Available online at: http://www.calrecycle.ca.gov/wastechar/Resdisp.htm

CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf.

Table SW-1.2
Commercial Waste Disposal Rates

Commercial Industry	Annual Disposal Rate	
Fast-Food Restaurants	2.1	tons/employee/year
Full-Service Restaurants	2.2	tons/employee/year
Food Stores	2.4	tons/employee/year
Durable Wholesale Distributors	1.2	tons/employee/year
Non-Durable Wholesale Distributors	1.4	tons/employee/year
Large Hotels	2.0	tons/employee/year
Building Material & Gardening, Big-Box Stores	3.2	tons/employee/year
Building Material & Gardening, Other Stores	1.7	tons/employee/year
Retail, Big-Box Stores	1.4	tons/employee/year
Retail, Other Stores	0.9	tons/employee/year
Shopping Malls, Anchor Stores	1.1	tons/1,000 sqft/year
Shopping Malls, Other	1.0	tons/1,000 sqft/year
Public Venues and Events	0.1	tons/100 visitors/year
Large Office Buildings	0.9	tons/1,000 sqft/year

Abbreviations:
lb - pound
sqft - square feet

Source:

CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Table 2. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry

Table SW-1.3
Waste Streams and Percent of Disposed Waste

Building Category	Disposed Waste Streams							
	Paper [Mixed Paper, Broad Definition]	Glass [Glass]	Metal [Mixed Metals]	Plastic [Mixed Plastics]	Electronics [Personal Computers]	Organics [Mixed Organics]	Construction & Demolition [Clay Bricks, Concrete]	Household Hazardous, Special, and Mixed Residue [Mixed MSW]
Residential	27.4%	4.0%	4.6%	8.8%	n/a	45.0%	4.5%	5.5%
Fast-Food Restaurants	33.0%	0.6%	1.6%	11.6%	0.0%	52.5%	0.6%	0.0%
Full-Service Restaurants	17.3%	2.7%	2.8%	7.3%	0.1%	66.5%	1.8%	1.5%
Food Stores	18.5%	0.5%	1.4%	9.5%	0.0%	65.0%	5.0%	0.0%
Durable Wholesale Distributors	26.3%	0.7%	11.4%	9.9%	0.5%	5.4%	43.5%	2.4%
Non-Durable Wholesale Distributors	26.5%	0.5%	3.3%	16.0%	2.6%	32.7%	18.4%	0.1%
Large Hotels	32.3%	4.7%	3.8%	9.7%	0.4%	44.2%	4.8%	0.1%
Building Material & Gardening, Big-Box Stores	12.2%	1.9%	8.3%	7.1%	1.2%	8.0%	60.1%	1.2%
Building Material & Gardening, Other Stores	13.4%	5.3%	3.9%	7.1%	1.9%	18.6%	47.4%	2.3%
Retail, Big-Box Stores	21.7%	1.1%	5.3%	16.0%	0.8%	23.6%	27.1%	4.4%
Retail, Other Stores	31.8%	6.2%	8.7%	14.4%	0.7%	17.5%	15.0%	5.7%
Shopping Malls, Anchor Stores	37.9%	5.0%	3.0%	28.8%	0.1%	15.5%	9.1%	0.5%
Shopping Malls, Other	32.7%	1.8%	2.3%	19.6%	0.2%	35.9%	5.3%	2.0%
Public Venues and Events	42.0%	5.5%	1.8%	14.8%	0.0%	34.0%	0.7%	1.2%
Large Office Buildings	50.3%	1.8%	1.6%	12.5%	0.1%	24.4%	8.3%	1.1%

Abbreviations:
MSW - municipal solid waste

Notes:
The USEPA report identifies waste streams with slightly different names than the CIWMB report. The CIWMB and USEPA waste stream categories were paired; USEPA categories are shown in brackets [ ] above.

Sources:
CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf
CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry
USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks. Available online at: http://www.epa.gov/climatechange/wycd/waste/SWMGHGreport.html

6.1.2 Recycle Demolished Construction Material

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Recycling demolished construction material can contribute to GHG reductions in multiple ways. First, it displaces new construction materials, thereby reducing the need for new raw material acquisition and manufacturing of those new construction materials. Harvesting of raw materials and manufacturing new materials requires energy in the form of fuel combustion and electricity, both of which are associated with GHG emissions. If the process of recycling construction materials is less carbon-intensive than the processes required to harvest and produce new construction materials, recycling these construction materials results in a net reduction in GHG emissions. Second, using local recycled construction material reduces the emissions associated with the transportation of new construction materials, which are typically manufactured farther away from a project site. Third, recycling construction material avoids sending this material to landfills. Wood-based materials decompose in landfills and contribute to methane emissions.

Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, this mitigation effort is realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions reductions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:

- Life cycle emissions from construction materials

Preferred Literature:
The California Integrated Waste Management Board (CIWMB) cites decreases in greenhouse gas emissions as a benefit of construction waste management and recycling in its document “Construction Waste Management” which is used as part of California Sustainable Design Training. The document is available online at: www.calrecycle.ca.gov/greenbuilding/training/statemanual/waste.doc

Alternative Literature:
None

Other Literature Reviewed:
None

7.0 Vegetation

7.1 Vegetation

7.1.1 Urban Tree Planting

Range of Effectiveness: CO_2 reduction varies by the number of trees. VOC emissions may increase.

Measure Description:

Planting trees sequesters CO_2 while the trees are actively growing. The amount of CO_2 sequestered depends on the type of tree. IPCC indicates that in most cases, the active growing period of a tree is 20 years and after this time the amount of carbon in biomass slows and will be completely offset by losses from clipping, pruning, and occasional death [1]. Therefore, the emissions only occur for a 20 year period and are summed over all years to give a net one-time GHG benefit.

If large areas of trees will be planted, the lead agency may want to ensure enforceability by requiring submission of annual inventory consistent with the Urban Forest Protocol [2]. This is a comprehensive protocol that requires maintenance and replacement of trees. If the Project Applicant desires to use this approach, calculation methodologies and assumptions presented in the protocol should be used. The information required to implement this protocol is often not available at the time of the CEQA process.

The type of tree species planted will result in varying degrees of carbon sequestration. In addition, trees emit volatile organic compounds (VOCs), which are criteria pollutant precursors. Therefore the Project Applicant may want to consider these issues when selecting the type of tree to plant. See [3] for details on low-VOC trees.

Measure Applicability:

- New trees

Inputs:

The following information needs to be provided by the Project Applicant:

- Species classes of trees planted, if known
- Number of net new trees in each species class, if known
- Total number of net new trees

Baseline Method:

In the baseline case, there are no net new trees planted.

Mitigation Method:

Look up default annual CO_2 sequestration rates on a per tree basis:

Broad species class	**Default annual CO_2 accumulation per tree[1] (MT CO_2/ year)**
Aspen	0.0352
Soft maple	0.0433
Mixed hardwood	0.0367
Hardwood maple	0.0521
Juniper	0.0121
Cedar/larch	0.0264
Douglas fir	0.0447
True fir/Hemlock	0.0381
Pine	0.0319
Spruce	0.0337
Miscellaneous[2]	0.0354

1. IPCC's carbon (C) values converted to carbon dioxide (CO_2) using ratio of molecular weights (44/12).
2. Average of all other broad species classes. To be assumed if tree type is not known.

Therefore, the reduction in GHG emissions associated with planting new trees is:

$$\text{GHG emission reduction} = (\text{Growing Period} \times \sum_{i=1}^{n} [\text{ Sequestration } i \times \text{Trees } i\,]\,) \div \text{Total GHG emissions}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions as compared to total GHG emissions.
Growing Period = Growing period for all trees, expressed in years (20).
n = Number of broad species classes. Provided by Applicant.
Sequestration *i* = Default annual CO_2 accumulation per tree for broad species class *i.* Lookup in table above.
Trees *i* = Number of net new trees of broad species class *i.*
Total GHG emissions = Total GHG emissions*.* Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Varies based on number of trees
VOC	May increase
All other pollutants	Not Quantified

Discussion:

If the applicant has baseline total project emissions of 5,000 MT CO_2e per year, and if the applicant elects to mitigate GHG emissions by committing to planting 500 net new “miscellaneous” trees, the applicant would reduce the amount of GHG emissions associated with the project by 7%.

$$\text{GHG Emission Reduced} = \frac{20 \times 0.0354 \times 500}{5{,}000} = 0.07 \text{ or } 7\%$$

Assumptions:

Data based upon the following reference:

[1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Table 8.2. Available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_08_Ch8_Settlements.pdf

Preferred Literature:

The IPCC Guidelines [1] provide a method for estimating the amount of carbon sequestered by trees. IPCC default annual CO_2 sequestration rates on a per tree basis are used. Table 8.2 of the IPCC Guidelines provides species class-specific sequestration values. For species that do not appear or if the species is unknown, the average value from Table 8.2 (0.035 MT CO_2 per year per tree) can be assumed to be representative of trees planted. Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years (see p. 8.9). Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. Additional credit may be taken for planting native trees. See WUW-3 for details on the design of water-efficient landscaping.

Alternative Literature:

The Center for Urban Forest Research Tree Carbon Calculator is based on a small set of data and extrapolates annual tree girth increases for various tree species [1]. Furthermore, it extrapolates the amount of carbon associated with a given girth for each tree species. This method is based on extrapolation of a limited dataset. In addition it requires considerably more input requirements that may not be available for CEQA projects. These inputs include knowledge of specific tree species that will be planted and assumptions regarding anticipated growth rates. Considering the order of magnitude of mitigation from this option, the additional complexity of this method would not generally be warranted for most CEQA projects.

The CAR Urban Forest Sector Protocol [2] provides guidelines for estimating the amount of CO_2 sequestered by common California tree species. This methodology would require Project Applicants to know the tree species to be planted at the time the CEQA analysis is prepared. Furthermore, this methodology would require Project Applicants to estimate the expected diameter of trees, which is dependent on climate and tree sub-species, among other things.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

[3] The Center for Urban Forest Research Tree Carbon Calculator. Available online at: http://www.fs.fed.us/ccrc/topics/urban-forests/

Other Literature Reviewed:

None

7.1.2 Create New Vegetated Open Space

Range of Effectiveness: varies based on amount and type of land vegetated

Measure Description:

A development which re-vegetates or creates vegetated land from previously settled land sequesters CO_2 from the atmosphere which would not have been captured had there been no land-type change. There is no reduction in GHG emissions associated with preservation of a land.

Measure Applicability:

- Open space

Inputs:

The following information needs to be provided by the Project Applicant:

- Types of land uses created
- Acres of each land use created

Baseline Method:

In the baseline case, there is no preserved or created open space.

Mitigation Method:

Lookup carbon dioxide sequestered per acre for each land use that will be preserved or created:

Land Use	Sub-Category	Default annual CO_2 accumulation per acre[1] (MT CO_2/ acre)
Forest Land	Scrub	14.3
	Trees	111
Cropland	--	6.9
Grassland	--	4.31
Wetlands	--	0

1. Calculated by multiplying total biomass (MT dry matter/acre) from IPCC data by the carbon fraction in plant material (0.47), then using the ratio of molecular weights (44/12) to convert from MT of carbon (C) to MT of carbon dioxide (CO_2).

Land uses are defined by IPCC as follows:

(i) Forest Land

This category includes all land with woody vegetation consistent with thresholds used to define Forest Land in the national greenhouse gas inventory. It also includes systems with a vegetation structure that currently fall below, but *in situ* could potentially reach the threshold values used by a country to define the Forest Land category.

(ii) Cropland

This category includes cropped land, including rice fields, and agro-forestry systems where the vegetation structure falls below the thresholds used for the Forest Land category.

(iii) Grassland

This category includes rangelands and pasture land that are not considered Cropland. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category. The category also includes all grassland from wild lands to recreational areas as well as agricultural and silvi-pastural systems, consistent with national definitions.

(iv) Wetlands

This category includes areas of peat extraction and land that is covered or saturated by water for all or part of the year (e.g., peatlands) and that does not fall into the Forest Land, Cropland, Grassland or Settlements categories. It includes reservoirs as a managed sub-division and natural rivers and lakes as unmanaged sub-divisions.

$$\text{GHG emission reduction} = \left(\sum_{i=1}^{n} [\text{ Sequestration } i \times \text{Acres } i\ ] \right) \div \text{Total GHG emissions}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions as compared to total GHG emissions.

n = Number of land uses. Provided by Applicant.

Sequestration *i* = Default annual CO_2 accumulation per acre for land use *i.* Look up in table above.

Acres *i* = Number of acres of land use *i.*

Total GHG emissions = Total one-time GHG emissions. Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Varies
All other pollutants	Not Quantified

Discussion:

If the applicant has baseline one-time emissions of 5,000 MT CO_2e per year, and if the applicant elects to mitigate GHG emissions by committing to creating 50 acres of forest land (scrub) and 20 acres of grassland, the applicant would reduce the amount of one-time GHG emissions by 16%.

$$\text{GHG Emission Reduced} = \frac{14.3 \times 50 + 4.31 \times 20}{5{,}000} = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following references:

[1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4. Available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html

Preferred Literature:

The IPCC Guidelines provide a method for calculating changes in CO_2 sequestration due to land-type conversions. While other methods exist, notably the CCAR Forest Protocol [2], the IPCC Guidelines [1] have more general default values available that will be applicable to all areas of California without requiring detailed site-specific information. A general knowledge of the proposed change in land type is sufficient to quantify reductions in greenhouse gas emissions. IPCC designates four general vegetation types: forest land, cropland, grassland, and wetland. The amount of sequestered CO_2 is calculated based on the amount of carbon stock in each type of biomass (MT carbon / hectare vegetation). IPCC defaults for the carbon stock in each vegetation type are summarized in Table 8.4. (Note that this table represents the amount of carbon removed due to land conversion to settlements; it can also be used to calculate the amount of carbon sequestered due to conversion from settlement to vegetated land. Note also that a conversion to wetlands is not relevant for California). In addition to general default values, the IPCC Guidelines have climate and species-specific data available which can be used if details of the proposed development are known. To calculate the final mass of CO_2, the mass of carbon is then multiplied by 3.67, which is the ratio of molecular mass of CO_2 to the molecular mass of carbon. This method assumes that all of the carbon is converted into CO_2, which is appropriate for most CEQA projects.

Alternative Literature:

The CAR Forest Sector Protocol provides guidelines for estimating the amount of CO_2 sequestered by vegetated land [1]. The Protocol is specific to forest land only, and is not appropriate for estimating land-type conversions to or from cropland or grassland. Additionally, the methodology is limited to conversions from vegetated land to settlement or settlement to vegetated land, but is not appropriate for changes from one vegetated land type to another vegetated land type. The Protocol recommends accounting for changes in the organic carbon content of soil, which requires soil sampling and testing. While testing of existing soil is feasible, the protocol does not provide adequate methods for predicting the future soil organic carbon content after a land-type conversion has taken places. Furthermore, soil testing may be a burdensome task for a Project Applicant. Methodologies which provide default values, such as the IPCC Guidelines, are preferable.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

Other Literature Reviewed:

None

8.0 Construction

8.1 Construction

8.1.1 Use Alternative Fuels for Construction Equipment

Range of Effectiveness: 0 – 22% reduction in GHG emissions

Measure Description:

When construction equipment is powered by alternative fuels such as compressed natural gas rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

[3] Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

For all pollutants besides ROG emissions from gasoline-fueled equipment, total emission is equivalent to exhaust emission and is calculated as follows:

$$\text{Exhaust Emission} = \frac{\text{Exhaust}}{\text{Activity} \times \text{AvgHP}} \times Hp \times Hr \times C$$

Where:

Exhaust Emission= MT or tons of pollutant per year

Exhaust = Statewide daily emission from equipment for the relevant horsepower tier of diesel or gasoline fuel (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of equipment.

Hr = Hours of operation.

C = Unit conversion factor

Note that this method assumes the load factor of the equipment is same as the default in OFFROAD2007.

Total GHG emission is calculated as follows:

$$\text{GHG Emission} = CO_2\text{ Emission} + CH_4\text{ Emission} \times 21 + N_2O\text{ Emission} \times 310$$

Where:

GHG Emission = MT CO_2e

CO_2 Emission = CO_2 emission calculated as described above with data from OFFROAD2007.

CH_4 Emission = CH_4 emission calculated as described above with data from OFFROAD2007.

N_2O Emission = N_2O emission calculated as described above with data from OFFROAD2007.

21 = Global warming potential of CH_4 following CCAR GPR 2009.

310 = Global warming potential of N_2O following CCAR GPR 2009.

Total ROG emission from gasoline-fueled equipment is calculated as follows:

$$\text{Total ROG Emission} = \text{Exhaust ROG Emission} + \frac{\text{Resting} + \text{Diurnal} + \text{Hot Soak} + \text{Evaporative}}{\text{Activity} \times \text{AvgHP}} \times Hp \times Hr \times C$$

Where:

Total ROG Emission = Tons of ROG emission per year

Exhaust ROG Emission = ROG emission from exhaust calculated as described above (tons/year)

Resting = Statewide daily resting losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Diurnal = Statewide daily diurnal losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Hot Soak = Statewide daily hot soak losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Evaporative = Statewide daily evaporative losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of TRU.

Hr = Hours of operation.

C = Unit conversion factor

Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with emission factors from compressed natural gas in OFFROAD2007.

Emission Reduction Ranges and Variables:

GHG and criteria pollutant emission reductions from switching diesel or gasoline fuel to compressed natural gas fuel for different years are listed in accompanying tables. Only equipment with emission data for compressed natural gas and either diesel or gasoline fuel in OFFROAD2007 are included.

Discussion:

The emission changes vary over a large range for different pollutants and equipment and between diesel and gasoline. In fact, GHG emissions for several types of equipment running on gasoline and all equipment running on diesel would increase from switching to compressed natural gas, as reflected by the negative reductions in the tables. On the other hand, SO_2 emissions are 100% reduced as there is no SO_2 emissions from equipment running on compressed natural gas according to OFFROAD2007. Other trends include no significant change in PM emissions for most gasoline equipment, considerable decrease in CO emissions from gasoline equipment but significant increase in CO emissions from diesel equipment. Therefore, the Project Applicant has to weigh the costs and benefits from switching to compressed natural gas on a case-by-case basis.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
  California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

GHG emissions from the combustion of conventional petroleum diesel and gasoline fuel can be calculated using CARB's OFFROAD model emission factors [1]. The model provides state-wide and regional emission factors that can be converted to grams per horsepower-hour. Multiplying this factor by the typical horsepower of the equipment and the estimated number of hours of operation gives the total GHG emissions. In this mitigation measure, compressed natural gas was chosen as the alternative fuel. Emission factors for compressed natural gas can also be obtained from OFFROAD The

GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from using petroleum diesel or gasoline versus using compressed natural gas. Other types of alternative fuels besides compressed natural gas exist. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation showing expected reductions in GHG emissions as a result of running construction equipment on these alternative fuels rather than petroleum diesel or gasoline. One potential issue with quantifying this mitigation measure is the difference in fuel economy between petroleum diesel and alternative fuels.

Alternative Literature:

Many USDOE, NREL, and USEPA reports exist which present data on exhaust emissions from engines operating with alternative fuels. The majority of these reports focuses on oxides of nitrogen (NOx) and particulate matter (PM) emissions and have limited CO_2 emissions and fuel economy data. One NREL report shows CO_2 emissions and fuel economy for three ethanol/diesel blends (7.7%, 10%, and 15%) in three off-road engines (6.8, 8.1, and 12.5 L) and compares the results to engine performance using conventional diesel fuel [5]. However, this report presented engine-specific data from a small study size. Issues with other reports include the study's focus on on-road engines rather than off-road engines which would be used in construction equipment. It would be difficult to generalize the data contained in these reports for a Project Applicant's ease of use.

Notes:

[1] CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.

Other Literature Reviewed:

[2] USEPA. 2002. A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions. Available online at: http://www.epa.gov/otaq/models/analysis/biodsl/p02001.pdf
[3] USDOE. NREL: ReFUEL Laboratory: Data and Resources. Available online at: http://www.nrel.gov/vehiclesandfuels/refuellab/data_resources.html. Accessed March 2010.
[4] USDOE. 2006. NREL: Effects of Biodiesel Blends on Vehicle Emissions. Available online at: http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/40554.pdf
[5] USDOE. 2003. NREL: The Effect of Biodiesel Composition on Engine Emissions from a DDC Series 60 Diesel Engine. Available online at: http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/31461.pdf

Table C-1.1
Emission Reduction Due to Fuel Switch from Gasoline to Compressed Natural Gas

Equipment	Horsepower	2004					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	59%	-27%	36%	91%	98%	100%
	15 - 25	61%	-40%	7%	90%	97%	100%
Air Conditioner	< 175	24%	14%	19%	0%	97%	100%
Baggage Tug	< 120	46%	15%	-4%	0%	93%	100%
Belt Loader	< 120	52%	18%	3%	0%	95%	100%
Bobtail	< 120	55%	17%	19%	0%	95%	100%
Cargo Loader	< 120	41%	16%	2%	0%	93%	100%
Catering Truck	< 250	31%	12%	25%	0%	94%	100%
Forklifts	< 25	53%	-46%	23%	-85%	92%	100%
	25 - 50	94%	22%	-33%	0%	97%	100%
	50 - 120	58%	19%	18%	0%	96%	100%
	120 - 175	24%	17%	24%	0%	94%	100%
Fuel Truck	<175	3%	18%	17%	0%	99%	100%
Generator Sets	<120	52%	18%	14%	0%	96%	100%
	120 - 175	22%	14%	21%	0%	95%	100%
Lav Truck	<175	32%	18%	17%	0%	94%	100%
Lift	<120	53%	17%	14%	0%	96%	100%
Passenger Stand	<175	27%	15%	22%	0%	96%	100%
Service Truck	<250	13%	16%	26%	0%	95%	100%

Equipment	Horsepower	2010					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	95%	100%
Air Conditioner	< 175	29%	14%	19%	0%	98%	100%
Baggage Tug	< 120	13%	13%	-114%	0%	84%	100%
Belt Loader	< 120	27%	15%	-82%	0%	91%	100%
Bobtail	< 120	29%	16%	11%	0%	96%	100%
Cargo Loader	< 120	15%	14%	-70%	0%	89%	100%
Catering Truck	< 250	35%	12%	29%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	85%	100%
	25 - 50	95%	22%	18%	0%	98%	100%
	50 - 120	52%	18%	5%	0%	95%	100%
	120 - 175	27%	14%	23%	0%	94%	100%
Fuel Truck	<175	9%	16%	15%	0%	100%	100%
Generator Sets	<120	40%	17%	16%	0%	97%	100%
	120 - 175	26%	14%	23%	0%	95%	100%
Lav Truck	<175	36%	15%	-18%	0%	94%	100%
Lift	<120	44%	17%	16%	0%	96%	100%

Passenger Stand	<175	32%	15%	25%	0%	97%	100%
Service Truck	<250	19%	14%	40%	0%	95%	100%

Equipment	Horsepower	2015					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	31%	13%	23%	0%	99%	100%
Baggage Tug	< 120	8%	14%	-93%	0%	85%	100%
Belt Loader	< 120	22%	16%	-69%	0%	92%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	5%	14%	-91%	0%	88%	100%
Catering Truck	< 250	38%	11%	33%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	34%	0%	98%	100%
	50 - 120	52%	18%	6%	0%	95%	100%
	120 - 175	27%	14%	25%	0%	95%	100%
Fuel Truck	<175	12%	15%	13%	0%	100%	100%
Generator Sets	<120	21%	16%	17%	0%	97%	100%
	120 - 175	29%	13%	24%	0%	96%	100%
Lav Truck	<175	36%	15%	-24%	0%	95%	100%
Lift	<120	37%	16%	16%	0%	96%	100%
Passenger Stand	<175	34%	14%	28%	0%	98%	100%
Service Truck	<250	22%	13%	46%	0%	96%	100%

Equipment	Horsepower	2020					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	24%	0%	99%	100%
Baggage Tug	< 120	7%	15%	-49%	0%	89%	100%
Belt Loader	< 120	21%	16%	-27%	0%	94%	100%
Bobtail	< 120	26%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	15%	-62%	0%	91%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	12%	14%	9%	0%	100%	100%
Generator Sets	<120	-5%	16%	17%	0%	98%	100%
	120 - 175	30%	13%	25%	0%	97%	100%
Lav Truck	<175	36%	15%	3%	0%	96%	100%

Lift	<120	30%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	14%	30%	0%	98%	100%
Service Truck	<250	23%	13%	42%	0%	96%	100%

Equipment	Horsepower	2025					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	27%	0%	99%	100%
Baggage Tug	< 120	8%	15%	-27%	0%	92%	100%
Belt Loader	< 120	21%	17%	-7%	0%	96%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	16%	-40%	0%	93%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	21%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	13%	14%	13%	0%	100%	100%
Generator Sets	<120	-15%	16%	18%	0%	98%	100%
	120 - 175	30%	13%	26%	0%	98%	100%
Lav Truck	<175	36%	15%	22%	0%	97%	100%
Lift	<120	27%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	13%	30%	0%	99%	100%
Service Truck	<250	24%	12%	34%	0%	96%	100%

Table C-1.2
Emission Reduction Due to Fuel Switch from Diesel to Compressed Natural Gas

Equipment	Horsepower	2004					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-2749%	-27%	55%	36%	73%	100%
	15 - 25	-2912%	-31%	46%	26%	74%	100%
Air Conditioner	<175	-451%	-21%	-30%	84%	87%	100%
Baggage Tug	<120	-507%	-24%	10%	94%	88%	100%
Belt Loader	<120	-469%	-23%	6%	93%	89%	100%
Bobtail	<120	-441%	-22%	23%	93%	91%	100%
Cargo Loader	<120	-625%	-25%	-4%	93%	84%	100%
Catering Truck	<250	-1152%	-22%	-44%	70%	78%	100%
Forklifts	<50	-21%	-23%	-51%	93%	95%	100%
	50 - 120	-594%	-25%	5%	93%	87%	100%
	120 - 175	-581%	-22%	-2%	88%	89%	100%
Generator Sets	<120	-397%	-12%	-2%	92%	91%	100%
	<175	-415%	-12%	-11%	85%	89%	100%
Lav Truck	<175	-457%	-22%	-11%	88%	89%	100%
Lift	<120	-465%	-23%	-5%	92%	89%	100%

Equipment	Horsepower	2010					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3037%	-27%	31%	-29%	59%	100%
	15 - 25	-3755%	-32%	40%	-3%	60%	100%
Air Conditioner	<175	-450%	-20%	-36%	73%	85%	100%
Baggage Tug	<120	-556%	-22%	22%	92%	88%	100%
Belt Loader	<120	-513%	-22%	21%	92%	90%	100%
Bobtail	<120	-480%	-19%	64%	91%	96%	100%
Cargo Loader	<120	-678%	-24%	6%	91%	84%	100%
Catering Truck	<250	-1732%	-21%	-38%	53%	73%	100%
Forklifts	<50	-54%	-21%	26%	90%	96%	100%
	50 - 120	-647%	-22%	32%	90%	90%	100%
	120 - 175	-598%	-21%	38%	82%	90%	100%
Generator Sets	<120	-430%	-11%	11%	89%	91%	100%
	<175	-436%	-11%	0%	81%	89%	100%
Lav Truck	<175	-477%	-21%	1%	84%	90%	100%
Lift	<120	-503%	-22%	9%	90%	89%	100%

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Construction Equipment

Equipment	Horsepower	2015					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-86%	57%	100%
	15 - 25	-4465%	-32%	32%	-48%	46%	100%
Air Conditioner	<175	-450%	-19%	-41%	47%	85%	100%
Baggage Tug	<120	-590%	-21%	30%	91%	89%	100%
Belt Loader	<120	-541%	-21%	31%	90%	91%	100%
Bobtail	<120	-505%	-19%	65%	89%	96%	100%
Cargo Loader	<120	-720%	-22%	4%	88%	83%	100%
Catering Truck	<250	-1899%	-20%	-54%	16%	72%	100%
Forklifts	<50	-85%	-20%	41%	83%	94%	100%
	50 - 120	-682%	-21%	23%	81%	89%	100%
	120 - 175	-596%	-20%	36%	68%	91%	100%
Generator Sets	<120	-456%	-11%	22%	84%	91%	100%
	<175	-444%	-10%	12%	71%	90%	100%
Lav Truck	<175	-483%	-20%	10%	76%	91%	100%
Lift	<120	-531%	-21%	17%	85%	89%	100%

Equipment	Horsepower	2020					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4722%	-32%	29%	-91%	39%	100%
Air Conditioner	<175	-449%	-19%	-104%	-81%	88%	100%
Baggage Tug	<120	-621%	-20%	31%	87%	90%	100%
Belt Loader	<120	-569%	-20%	31%	85%	91%	100%
Bobtail	<120	-526%	-19%	53%	84%	95%	100%
Cargo Loader	<120	-757%	-21%	-9%	78%	81%	100%
Catering Truck	<250	-1946%	-20%	-120%	-75%	73%	100%
Forklifts	<50	-100%	-20%	32%	60%	91%	100%
	50 - 120	-696%	-21%	-17%	55%	84%	100%
	120 - 175	-596%	-20%	-12%	31%	89%	100%
Generator Sets	<120	-476%	-10%	25%	69%	91%	100%
	<175	-446%	-10%	5%	48%	90%	100%
Lav Truck	<175	-485%	-19%	-3%	56%	91%	100%
Lift	<120	-553%	-20%	13%	72%	89%	100%

Equipment	Horsepower	2025					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4803%	-32%	27%	-109%	37%	100%
Air Conditioner	<175	-450%	-19%	-346%	-331%	88%	100%
Baggage Tug	<120	-640%	-19%	17%	79%	89%	100%
Belt Loader	<120	-587%	-20%	16%	72%	90%	100%
Bobtail	<120	-548%	-19%	32%	72%	93%	100%
Cargo Loader	<120	-763%	-20%	-40%	56%	78%	100%
Catering Truck	<250	-1936%	-20%	-330%	-294%	72%	100%
Forklifts	<50	-106%	-20%	19%	-26%	89%	100%
	50 - 120	-703%	-21%	-69%	-48%	79%	100%
	120 - 175	-597%	-20%	-172%	-110%	83%	100%
Generator Sets	<120	-483%	-10%	13%	37%	90%	100%
	<175	-446%	-10%	-37%	-3%	90%	100%
Lav Truck	<175	-486%	-19%	-57%	5%	90%	100%
Lift	<120	-560%	-20%	-8%	37%	87%	100%

8.1.2 Use Electric and Hybrid Construction Equipment

Range of Effectiveness: 2.5 – 80% of GHG emissions from equipment that is electric or hybrid if used 100% of the time

Measure Description:

When construction equipment is powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment. When construction equipment is powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

$$\text{Baseline Emission} = EF \times Hp \times LF \times Hr \times C$$

Where:

Emission = MT CO_2e or MT Criteria Pollutant
EF = Emission factor for the relevant fuel horsepower tier (g/hp-hr). Obtained from OFFROAD2007. See accompanying tables
Hp = Horsepower of equipment.
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

Mitigation Method:

<u>Fully Electric Vehicle</u>

Construction vehicles will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated GHG Emission} = Utility \times Hp \times LF \times Hr \times C$$

Where:

GHG emissions = MT CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh)
Hp = Horsepower of equipment.
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

GHG Reduction %[106] $= 1 - \frac{\text{Utility} \times C}{EF \times 10^{-6}}$

Hybrid-Electric Vehicle

GHG Reduction % = Percent Reduction in Fuel Consumption

Emission Reduction Ranges and Variables:

Fully Electric Vehicle

GHG

Utility	Diesel	Compressed Natural Gas 4-strokes	Gasoline 2-strokes	Gasoline 4-strokes				
				<25 HP	25-50 HP	50-120 HP	120-175 HP	175-500 HP
LADW&P	26.3%	37.9%	2.5%	2.5%	46.5%	45.9%	44.4%	42.8%
PG&E	72.9%	77.1%	64.1%	64.1%	80.3%	80.1%	79.5%	78.9%
SCE	61.8%	67.9%	49.5%	49.5%	72.3%	72.0%	71.2%	70.4%
SDGE	53.5%	60.9%	38.5%	38.5%	66.3%	65.9%	64.9%	63.9%
SMUD	67.0%	72.2%	56.3%	56.3%	76.0%	75.8%	75.1%	74.3%

Criteria pollutant

Emissions will be 100% reduced for equipment running on electricity.

Hybrid-Electric Vehicle

GHG

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

[106] This assumes energy from engine losses are the same.

Discussion:

The CO_2 emission factor show in the accompanying tables obtained from OFFROAD2007 [1] shows the same emissions within each horsepower tier regardless of the scenario year or equipment model year. The contributions of CH_4 and N_2O to overall GHG emissions is likely small (< 1% of total CO_2e) from diesel construction equipment [2] and were therefore not included. Therefore, the CO_2e emission reduction is dependent on the electricity provider for the Project, horsepower and fuel of the construction equipment only.

On the other hand, the criteria pollutant emission factors from OFFROAD2007 vary for different scenario and equipment model years. The criteria pollutant emission factors presented in the accompanying tables correspond to those of new equipment in the respective scenario years, i.e., model year is the same as scenario year. Since older equipment have higher emission factors due to deterioration and less regulation, the emission reduction calculated from this methodology is likely to be an underestimate.

Assumptions:

Data based upon the following references:

[1] California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
[2] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
[3] California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

Electric construction equipment is available commercially from companies such as Peterson Pacific Corporation and Komptech USA, which specialize in the mechanical processing equipment like grinders and shredders [4,5]. The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD2007 model, which provides state-wide and regional emission factors for a variety of construction equipment that can be converted to grams per horsepower-hour [6]. Multiplying this factor by the number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours as the diesel-powered equipment, the electricity required to run a piece of electric construction equipment can be calculated by multiplying the operating hours by the amperage required to run the equipment and the voltage rating (obtained from manufacturer technical specifications) to obtain total kWh required. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric equipment. The

GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Construction equipment powered by hybrid-electric drives is also commercially available from companies such as Caterpillar [7]. For example, Caterpillar reports that during an 8-hour shift, its D7E hybrid dozer burns 19.5% fewer gallons of fuel than a conventional dozer while achieving a 10.3% increase in productivity. The D7E model burns 6.2 gallons per hour compared to a conventional dozer which burns 7.7 gallons per hour. The percent reduction in fuel use is directly proportional to the percent reduction in GHG emissions. Assuming complete combustion to CO_2 and a carbon content of 87%, the CO_2 emissions reductions can be calculated. Fuel usage and savings are dependent on the make and model of the construction equipment used. The Project Applicant should calculate project-specific savings and provide manufacturer specifications indicating fuel burned per hour.

Alternative Literature:

None

Notes:

[4] Peterson Pacific Corp. Product Brochure Downloads. Available online at: http://www.petersonpacific.com/content/MediaGallery_56_v. Accessed March 2010.
[5] Komptech USA. Products. Available online at: http://www.komptech.com/usa/products.htm. Accessed March 2010.
[6] CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.
[7] Caterpillar. D7E Efficiency. Accessed February 2010. Available online at: http://www.cat.com/D7E

Other Literature Reviewed:

None

Table C-2.1
Emissions Factors from Different Fuels

Fuel	HP	CO_2 Emission Factor (g/hp-hr)
		All Years
Compressed Natural Gas 4-stroke	All	674.66
Diesel	All	568.30
Gasoline 2-stroke	All	429.44
Gasoline 4-stroke	<25	429.44
	25-50	783.30
	50-120	774.50
	120-175	753.25
	175-500	732.00

Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.01	0.01
	50-120	0.07	0.01	0.01
	120-175	0.06	0.01	0.01
	175-250	0.06	0.01	0.01
	250-500	0.06	0.01	0.01
Diesel	<15	0.57	0.41	0.41
	15-25	0.54	0.48	0.48
	25-50	0.54	0.20	0.08
	50-120	0.38	0.16	0.08
	120-175	0.18	0.13	0.08
	175-250	0.12	0.08	0.06
	250-500	0.10	0.08	0.06
	500-750	0.12	0.08	0.06
	750-1000	0.57	0.08	0.06
	>1000	0.57	0.08	0.08
Gasoline 2-stroke	<2	6.70	5.52	5.52
	2-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79
Gasoline 4-stroke	<5	6.70	5.52	5.52
	5-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79

Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
	25-50	1.49	0.65	0.65
	50-120	0.91	0.24	0.24
	120-175	0.72	0.15	0.15
	175-250	0.72	0.15	0.15
	250-500	0.72	0.15	0.15

Fuel	HP	CO Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	300	300	300
	15-25	300	300	300
	25-50	7.02	7.02	7.02
	50-120	20	20	20
	120-175	16	16	16
	175-250	16	16	16
	250-500	16	16	16
Diesel	<15	3.47	3.47	3.47
	15-25	2.34	2.34	2.34
	25-50	3.27	2.86	2.72
	50-120	3.23	3.09	3.05
	120-175	2.70	2.70	2.70
	175-250	0.92	0.92	0.92
	250-500	0.92	0.92	0.92
	500-750	0.92	0.92	0.92
	750-1000	2.70	0.92	0.92
	>1000	2.70	0.92	0.92
Gasoline 2-stroke	<2	318	236	236
	2-15	274	225	225
	15-25	284	238	238
Gasoline 4-stroke	<5	318	236	236
	5-15	274	225	225
	15-25	284	238	238
	25-50	71	38	38
	50-120	38	8.76	8.76
	120-175	21	21	21
	175-250	21	21	21
	250-500	21	21	21

Fuel	HP	NOx Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	8.44	8.44	8.44
	15-25	8.44	8.44	8.44
	25-50	5.19	1.95	1.95
	50-120	4.57	1.58	1.58
	120-175	4.56	1.58	1.58
	175-250	4.56	1.58	1.58
	250-500	4.56	1.58	1.58
Diesel	<15	6.08	4.37	4.37
	15-25	5.79	4.57	4.57
	25-50	5.10	4.88	4.80
	50-120	5.64	5.01	2.53
	120-175	4.72	4.44	2.27
	175-250	4.58	2.45	1.36
	250-500	4.29	2.45	1.36
	500-750	4.51	2.45	1.36
	750-1000	8.17	4.08	2.36
	>1000	8.17	4.08	2.36
Gasoline 2-stroke	<2	2.32	2.70	2.70
	2-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
Gasoline 4-stroke	<5	2.32	2.70	2.70
	5-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
	25-50	4.52	1.33	1.33
	50-120	5.06	1.78	1.78
	120-175	4.98	1.94	1.94
	175-250	4.98	1.94	1.94
	250-500	4.98	1.94	1.94

Fuel	HP	PM Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.90	0.90	0.90
	15-25	0.90	0.90	0.90
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06
Diesel	<15	0.47	0.38	0.38
	15-25	0.38	0.38	0.38
	25-50	0.43	0.35	0.16
	50-120	0.39	0.24	0.01
	120-175	0.19	0.16	0.01
	175-250	0.11	0.11	0.01
	250-500	0.11	0.11	0.01
	500-750	0.11	0.11	0.01
	750-1000	0.38	0.11	0.06
	>1000	0.38	0.11	0.06
Gasoline 2-stroke	<2	0.74	0.74	0.74
	2-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
Gasoline 4-stroke	<5	0.74	0.74	0.74
	5-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06

8.1.3 Limit Construction Equipment Idling beyond Regulation Requirements

Range of Effectiveness: Varies with the amount of Project Idling occurring and the amount reduced.

Measure Description:

Heavy duty vehicles will idle during loading/unloading and during layovers or rest periods with the engine still on. Idling requires fuel use and results in emissions. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes. There are some exceptions to the regulation such as positioning or providing a power source for equipment or operations such as lift, crane, pump, drill, hoist or other auxiliary equipment. Reduction in idling time beyond required under the regulation would further reduce fuel consumption and thus emissions. The project applicant should develop an enforceable mechanism that monitors the idling time to ensure compliance with this mitigation measure.

Measure Applicability:

- Heavy Duty Commercial Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Idling time of vehicle

Baseline Method:

For all pollutants, the idling emission from each idling period is calculated as follows:

$$\text{Emission} = EF \times t \times C$$

Where:

Emission = grams of pollutant per idling period

EF = Idling emission factor for diesel-fueled heavy duty vehicles obtained from EMFAC (g/idling-hour).

t = Baseline idling period (minute). This is 5 minutes for all vehicles which do not have auxiliary equipment powered by the primary engine exempted from the regulation. For exempted vehicles, the Project applicant shall determine the baseline idling period.

C = Time conversion factor = 1/60

Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with mitigated idling period.

Emission Reduction Ranges and Variables:

Emission reduction is calculated as follows:

$$\text{Reduction} = 1 - \frac{t_M}{t_B}$$

Where:

t_M = mitigated idling period
t_B = baseline idling period

Discussion:

If a heavy duty truck is regulated under the CARB Idling Emission Reduction Program, and the Project Applicant has committed to enforce a reduced idling period to 3 minutes, then the emissions for all pollutants from idling emissions would be reduced by:

$$1 - \frac{3}{5} = 0.4 = 40\%$$

If the Project Applicant determines that the average idling period for a heavy duty vehicle with a hoist powered by the primary engine is 20 minutes, and has committed to enforce a reduced idling time to 15 minutes, then the emissions for all pollutants would be reduced by:

$$1 - \frac{15}{20} = 0.25 = 25\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
- CARB 2010. EMFAC2007 Model. Available at: http://www.arb.ca.gov/msei/onroad/latest_version.htm

Preferred Literature:

Idling of heavy duty commercial vehicles requires fuel use and results in emissions. Project Applicant can obtain the average idling emission factor for diesel-fueled heavy duty trucks in the county where the Project would be located from EMFAC. The total idling emissions can be determined by multiplying this emission factor by the total idling period. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes, with exceptions for some vehicles with auxiliary equipment powered by the primary engine [1]. The Project Applicant has to determine the appropriate baseline idling periods for such exempted vehicles. A plan should also be developed to ensure enforcement of the reduced idling period that the Project Applicant has committed to.

Alternative Literature:

None

Notes:

[1] California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm

Other Literature Reviewed:

None

8.1.4 Institute a Heavy-Duty Off-Road Vehicle Plan

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliances with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

8.1.5 Implement a Construction Vehicle Inventory Tracking System

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring engine run time meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliance with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

9.0 Miscellaneous

9.1 Miscellaneous

9.1.1 Establish a Carbon Sequestration Project

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:
The Project Applicant would establish a carbon sequestration project. This might include (a) geologic sequestration or carbon capture and storage techniques in which CO_2 from point sources such as power plants and fuel processing plants is captured and injected underground, (b) terrestrial sequestration in which ecosystems such as wetlands and forestlands are established or preserved to serve as CO_2 sinks, (c) novel techniques involving advanced chemical or biological pathways, or (d) technologies yet to be discovered. The Project Applicant would commit to a desired amount of carbon sequestration in MT per year. This amount would be subtracted from the overall baseline project emissions inventory. In order to take credit for this measure, the Project Applicant should be required to establish a reporting and verification mechanism to quantify the amount of carbon sequestered. Furthermore, the Project Applicant should be required to prove additionality.[107]

Measure Applicability:
- Overall baseline project GHG emissions inventory

Inputs:
- Amount of CO_2e sequestered (MT/year)

Baseline Method:
The Project Applicant should calculate the baseline project emissions inventory ($CO_2e_{baseline}$, the total baseline CO_2e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:
The amount of CO_2e sequestered is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is

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[107] Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.

Miscellaneous

MP# **LU-5**

Misc-1

Carbon Sequestration

GHG emission reduction $= \dfrac{CO_2e_{sequestered}}{CO_2e_{baseline}}$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from carbon sequestration project
$CO_2e_{sequestered}$	=	Amount of CO_2e sequestered (MT/year) Provided by Applicant
$CO_2e_{baseline}$	=	Total baseline CO_2e emissions (MT/year)

Assumptions:
Data based upon the following references:

- USDOE. Fossil Energy: Carbon Sequestration. Available online at: http://www.fossil.energy.gov/programs/sequestration/

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	None

Preferred Literature:
The DOE Fossil Energy – Carbon Sequestration website describes the four core carbon sequestration technologies: geologic, carbon capture and storage, terrestrial, and novel biological and chemical pathways. The DOE website discusses current challenges and research projects associated with each of the carbon sequestration technologies, as well as the trade-offs between local environmental impacts and global environmental benefits.

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.2 Establish Off-Site Mitigation

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:
The Project Applicant may decide to establish GHG reduction measures similar to any of the measures discussed in this report. These reductions would take place outside of the Project Site. In order to take credit for this measure, the Project Applicant should be required to establish a method for registering and verifying the GHG emissions reduction. Furthermore, the Project Applicant should be required to prove additionality.[108]

Measure Applicability:
- Overall baseline project GHG emissions inventory

Inputs:
- Amount of CO_2e reduced off-site (MT/year)

Baseline Method:
The Project Applicant should calculate the baseline project emissions inventory ($CO_2e_{baseline}$, the total baseline CO_2e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:
The amount of CO_2e reduced off-site is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{CO_2e_{\text{reduced off-site}}}{CO_2e_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from off-site mitigation
$CO_2e_{\text{reduced off-site}}$	=	Amount of CO_2e reduced off-site (MT/year) Provided by Applicant
CO_2e_{baseline}	=	Total baseline CO_2e emissions (MT/year)

[108] Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	To be determined by Applicant. Reductions in criteria pollutant emissions may be achieved if the off-site mitigation involves removing or retrofitting combustion sources or reducing electricity use.[109]

Preferred Literature:

None

[109] Note that the reduction in criteria pollutant emissions may not occur in the same air basin as the project.

9.1.3 Use Local and Sustainable Building Materials

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Using building materials which are sourced and processed locally (i.e. close to the project site, as opposed to in another state or country) reduces transportation distances and therefore reduces GHG emissions from fuel combustion. Using sustainable building materials, such as recycled concrete or sustainably harvested wood, also contributes to GHG emissions reductions due to the less carbon-intensive nature of the production and harvesting of these materials. Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, these mitigation efforts are realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:
- Life cycle emissions from building materials

Inputs:
The following information needs to be provided by the Project Applicant:
- Project location
- Material transport distance
- Material type
- Building assembly type and square footage

Preferred Literature:
Several software packages and web-based tools are available which can be used to quantify the life cycle emissions from building materials.

The Building for Environmental and Economic Sustainability (BEES) software developed by the National Institute of Standards and Technology (NIST) can calculate global warming potential (in terms of CO_2 emissions in grams per product) for a variety of building products, including a multitude of cement varieties, fabrics, tiles, glass, wood, and shelving materials. Required inputs are the type of building material (e.g. generic 100% Portland cement, generic 20% limestone cement), and transportation distance. The user can compare between different types of materials and associated transportation distances.

The BEES software and user manual is available for public download here: http://www.bfrl.nist.gov/oae/software/bees/bees.html

The Athena EcoCalculator for Assemblies software developed by the Athena Institute analyzes the environmental impacts of whole buildings in terms of global warming potential (in terms of CO_2e) from raw material extraction, final material manufacturing, transportation, on-site construction, maintenance, and demolition and disposal. Required inputs include the project location, assembly type (columns and beams, floor, exterior wall, interior wall, window, or roof), type of material, and square footage of material. The Athena EcoCalculator compares CO_2e emissions from the project-specific assembly to default assemblies of similar material and size. The Athena EcoCalculator is based on the more rigorous Athena Impact Estimator software, which requires detailed information about the building design including the number of columns and beams, supported span, wall height, and type of material used for all aspects. In contrast, the Athena EcoCalculator assumes default values for many of the architectural details.

A free public version of the Athena EcoCalculator is available for download here: http://www.athenasmi.org/tools/ecoCalculator/index.html

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.4 Require Best Management Practices in Agriculture and Animal Operations

9.1.5 Require Environmentally Responsible Purchasing

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Requiring environmentally responsible purchasing has the potential to have a net effect of reducing GHG emissions by reducing the life cycle emissions, operating emissions, and/or transportation emissions associated with a product. Examples of environmentally responsible purchases which reduce life cycle emissions include but are not limited to: purchasing products with sustainable packaging; purchasing post-consumer recycled copier paper, paper towels, and stationary; purchasing and stocking communal kitchens with reusable dishes and utensils; choosing sustainable cleaning supplies; and leasing equipment from manufacturers who will recycle the components at their "end of life." Examples of environmentally responsible purchases which reduce a Project's operating emissions include choosing ENERGY STAR appliances and Water Sense-certified water fixtures; choosing electronic appliances with built in sleep-mode timers; and purchasing "green power" (e.g. electricity generated from renewables or hydropower) from the utility. Choosing locally-made and distributed products reduces the transportation distances required to move the product from the distribution or manufacturing center to the Project, and therefore reduce GHG emissions associated with the transportation vehicles.

Since the magnitude of the energy and GHG reduction depends on the purchasing strategies implemented, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage homeowners, commercial space tenants, and builders to make sustainable purchases and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- Purchase of consumer and business goods and appliances

Assumptions:
Data based upon the following references:

- City of Chicago and ICLEI. Chicago Green Office Challenge: Waste. Available online at: http://www.chicagogreenofficechallenge.org/pages/waste/50.php
- Cool California.org. Small Business Money Saving Actions: Recycle and Cut Waste. Available online at: http://www.coolcalifornia.org/article/recycle-and-cut-waste

- Flex Your Power.org. Commercial Overview Energy Saving Tips: Office Equipment Tips. Available online at: http://www.fypower.org/com/tools/energy_tips_results.html?tips=office
- ENERGY STAR. 2007. Putting Energy into Profits: ENERGY STAR Guide for Small Businesses. Available online at: http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
The Chicago Green Office Challenge, Cool California.org, and Flex Your Power.org website resources provide many examples of office and small business purchasing strategies which reduce waste and energy use. The ENERGY STAR Guide provides more details about energy-efficient appliance choices and the option to purchase renewable or clean energy from the utility for a higher cost.

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.6 Implement an Innovative Strategy for GHG Mitigation

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. The GHG emissions reduction may be quantifiable. If not quantifiable, this mitigation measure should be implemented as a Best Management Practice.

Measure Description:
The Project Applicant may develop a novel strategy to reduce GHG emissions at the project site or off-site. This strategy may incorporate technologies which have yet to be developed at the time of the publication of this report. In order to take quantifiable credit for this measure, the Project Applicant must provide detailed and substantial evidence showing the quantification and verification of the GHG emissions reduction. If the GHG emissions reduction is not quantifiable, it should be implemented as a Best Management Practice.

Measure Applicability:
- To be determined by Project Applicant

Inputs:
- Amount of CO_2e reduced due to Innovative Strategy
- Baseline CO_2e for applicable inventory sector

Baseline Method:
The Project Applicant should calculate the baseline CO_2e emissions associated with the applicable GHG emissions inventory sector ($CO_2e_{baseline\text{-}sector}$, the baseline CO_2e emissions in MT per year for the applicable sector) using the methods described in the baseline methodology document. For example, if the Innovative Strategy achieves GHG reductions by reducing building energy use, $CO_2e_{baseline\text{-}sector}$ is the total CO_2e emissions associated with baseline building energy use.

Mitigation Method:
The amount of CO_2e reduced due to the Innovative Strategy is subtracted from applicable emissions inventory sector. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{CO_2e_{reduced\text{-}sector}}{CO_2e_{baseline\text{-}sector}}$$

Where:

GHG emission reduction	=	Percentage reduction in sector GHG emissions due to Innovative Strategy
$CO_2e_{reduced\text{-}sector}$	=	Amount of CO_2e reduced due to Innovative Strategy (MT/year) Provided by Applicant
$CO_2e_{baseline\text{-}sector}$	=	Baseline sector CO_2e emissions (MT/year)

If the GHG emissions reduction cannot be quantified and/or verified, check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	None

Preferred Literature:

None

10.0 General Plans

In addition to fact sheets and BMPs, this document includes measures that are more applicable for General Plans. The following measures have substantial evidence of reductions when implemented at a General Plan level rather than a project level.

10.1 General Plans

10.1.1 Fund Incentives for Energy Efficiency

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
By funding incentives for energy-efficient choices in equipment, fixtures in buildings, or energy sources, a Project Applicant can promote reductions in GHG emissions associated with fuel combustion and electricity use. The Project Applicant may choose to contribute to an existing municipal energy fund or establish a new energy fund for the Project. The Project Applicant should check with the local air district regarding participating in established programs. These energy funds may provide financial incentives or grants for any number of energy efficiency measures including but not limited to: retrofitting or designing new buildings, parking lots, streets, and public areas with energy-efficient lighting; retrofitting or designing new buildings with low-flow water fixtures and high-efficiency appliances; retrofitting or purchasing new low-emissions equipment; purchasing electric or hybrid vehicles; and investing in renewable energy systems such as photovoltaics or wind turbines. Recipients of energy fund grants could include neighborhood developers, home and commercial space builders, homeowners, and utilities. Energy funds allow recipients flexibility in choosing efficiency strategies while still achieving the desired effects of reduced energy use and associated GHG emissions.

Since the magnitude of the energy and GHG reduction depends on the strategies selected by the energy fund recipients, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage utilities, builders, residents, and commercial tenants to reduce their energy use and/or choose cleaner energy, and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- GHG emissions from energy use (fuel combustion and electricity use)

Assumptions:
Data based upon the following references:

- City of Ann Arbor. Energy Office: Energy Fund. Available online at: http://www.a2gov.org/government/publicservices/systems_planning/energy/Pages/EnergyFund.aspx
- Go Solar California. California Solar Initiative. Available online at: http://www.gosolarcalifornia.org/csi/index.html
- USDOE. Database of State Initiatives for Renewables and Efficiency: California. Available online at: http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=CA
- California Clean Energy Fund. About Us. Available online at: http://www.calcef.org/about.htm

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
The City of Ann Arbor's Energy Fund provides a good example of a municipal general energy fund which provides grants for a wide variety of energy efficiency and renewable energy investments. The California Solar Initiative and the Energy Efficient Appliance Rebate Program (found on the DOE Database of State Initiatives for Renewables and Efficiency) are examples of California state energy funds which incentivize specific types of purchases. The DOE database provides a listing of many more California municipal and local programs.

Alternative Literature:

None

Other Literature Reviewed:

- The Energy Foundation. Programs: Power. Available online at: http://www.ef.org/programs.cfm

10.1.2 Establish a Local Farmer's Market

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a local farmer's market has the potential to reduce greenhouse gas emissions by providing project residents with a more local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. If the food sold at the local farmer's market is produced organically, it can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the farmer's market, supermarket, and supermarket produce suppliers; the carbon intensity of food production practices; and the role of the farmer's market in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a local farmer's market can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In many cases, especially in urban areas, a local farmer's market will reduce emissions associated with the distribution of food from the field to the consumer, since the farms represented at the local farmer's market are theoretically closer to the consumer than the farms which produce most of the food found at supermarkets and grocery stores. However, California has a large number of farms and orchards and in some cases the farms represented at a local farmer's market may not be different than those represented at the neighborhood grocery store. If a consumer obtains produce from a local farmer's market when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the farmer's market and then to the grocery store (for example, to purchase food which the farmer's market cannot provide), the trip to the farmer's market is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT is added, and greenhouse gas emissions are actually increased. It is unclear how local farmer's markets affect the food purchasing behavior of consumers, and therefore the effect of a farmer's market on transportation greenhouse gas emissions is not quantifiable at this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development's operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). If food at a local farmer's market is produced organically, it is likely that less carbon-intensive practices were used than at the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels. Local farms which do not practice organic or sustainable farming may employ these more carbon-intensive practices. Thus, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None

10.1.3 Establish Community Gardens

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a community garden has the potential to reduce greenhouse gas emissions by providing project residents with a local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. Community gardens can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the community garden, supermarket, and supermarket produce suppliers; the carbon intensity of gardening and farming practices; and the role of a community garden in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a community garden can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In most cases a community garden will reduce emissions associated with the distribution of food from the field to the consumer, since with community gardens the food goes directly from the field to the consumer, while in grocery stores and supermarkets the path is more likely field to regional distribution center to store to consumer. If a consumer obtains produce from a community garden when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the community garden and then to the grocery store (for example, to purchase food which the community garden cannot provide), the trip to the community garden is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT is added, and greenhouse gas emissions are actually increased. Furthermore, if community gardens displace backyard gardens, they increase transportation emissions. It is unclear how community gardens affect the food purchasing behavior of consumers, and therefore the effect of a community garden on transportation greenhouse gas emissions is not quantifiable at this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development's operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). Community gardens are likely to produce food using less carbon-intensive practices than the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels; these practices are not likely to be used at community gardens. Although these qualitative conclusions can be drawn, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None

10.1.4 Plant Urban Shade Trees

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

Planting shade trees around buildings has been shown to effectively lower the electricity cooling demand of buildings by blocking incident sunlight and reducing heat gain through windows, walls, and roofs. Deciduous trees with large canopies are a desirable choice of shade tree because they provide shade in the warm months and shed their leaves in the winter months to allow sunlight to pass through and warm the building. By reducing cooling demand, shade trees help reduce electricity demand from the local utility and therefore reduce GHG emissions which would otherwise be emitted during the production of that electricity.

A study entitled "Calculating energy-saving potentials of heat-island reduction strategies" conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify reductions in electricity use from planting shade trees around residences, offices, and retail stores. The electricity reductions are based on the LBNL model which assumes 4 shade trees are planted around residences, 8 trees are planted around offices, and 10 trees are planted around retail stores. The LBNL model is also based on electricity use data for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980). Other assumptions, including the geometry of the modeled trees and sunlight transmittance, are detailed in Section 2.5 of the study. This mitigation measure describes how to estimate greenhouse gas emissions reductions from planting shade trees based on the LBNL data. Since the model is based on electricity data for Pre-1980 and 1980+ buildings[110] it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.[111]

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[110] This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.

[111] The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof
- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

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buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the “Shade tree savings” row and “1980+” column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{reduction} = SF \times ElecSavings \times Utility$$

Where

$GHG_{reduction}$ = Reduction in GHG emissions from planting shade trees (MT)

SF = Sqft of roof
Provided by Applicant

ElecSavings = Electricity savings (kWh / sqft roof)
From Tables 6 through 16 of LBNL study

Utility = Carbon intensity of local utility (MT CO_2e / kWh)
From Table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = GHG_{reduction} / GHG_{baseline}$$

Since the Utility term is a factor of both $GHG_{reduction}$ and $GHG_{baseline}$, the percent reduction in GHG emissions does not depend on the value of Utility.

CEQA# MM T-14
MP# COS-3.2

GP-4

CEQA# MM T-14
MP# COS-3.2

GP-4

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	The following emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. The reduction from planting shade trees around new buildings is expected to be smaller than the estimate below. Additionally, savings are expected to be smaller for new buildings due to the Title 24 standards. • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above[112]

Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

- CCAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

Section D.3 of the protocol describes a method to quantify the reductions in cooling and heating demand due to the planting of shade trees. Computer simulations incorporating

[112] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

building, climate, and shading effects were used to calculate the change in unit energy consumption (UEC) on a per tree basis. Total change in energy use is calculated by multiplying the change in UEC per try by the total number of trees. Buildings were modeled in three stocks with similar building characteristics: buildings constructed prior to 1950, buildings constructed between 1950 and 1980, and buildings constructed after 1980. As with the primary reference above, the data does not account for electricity efficiency improvements due to California's Title 24 standards.

Other Literature Reviewed:

- E. G. McPherson, J. R. Simpson. USDA Forest Service. 2003. Potential Energy Savings in Buildings by an Urban Tree Planting Programme in California. Journal of Urban Forestry & Urban Greening. Volume 2, p. 73-86.
- H. Akbari. Lawrence Berkeley National Laboratory. 2002. Shade Trees Reduce Building Energy Use and CO_2 Emissions from Power Plants. Journal of Environmental Pollution. Volume 116, p. 119-126.
- J. R. Simpson. Department of Environmental Horticulture at the University of California. 2002. Improved Estimates of Tree-Shade Effects on Residential Energy Use. Journal of Energy and Buildings. Volume 34, p. 1067-1076.

10.1.5 Implement Strategies to Reduce Urban Heat-Island Effect

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

The urban heat island effect is the phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements. This warming effect causes warmer locations, such as many cities in California, to require more energy for air conditioning and refrigeration than the surrounding rural areas. Higher energy requirements in turn result in higher CO_2 emissions from the generation of this energy.

Three strategies have been shown to have a positive impact on reducing localized temperatures and reducing the electricity demand for building cooling. These strategies are planting urban shade trees, installing reflective roofs, and using light-colored or high-albedo[113] pavements and surfaces. Planting shade trees around buildings and installing reflective roofs have both been found to result in direct electricity savings for buildings. The per building direct electricity savings from planting shade trees is discussed in a separate mitigation measure. Reflective roofs are covered under Title 24 Part 6 and the electricity savings is therefore incorporated in savings due to Title 24. The combination of the three strategies, however, has been shown to have a city-wide effect: a reduction in ambient air temperature. This reduction in air temperature results in buildings requiring less electricity for cooling, and is quantified as indirect savings in electricity use. The savings can be quantified on a per-building basis or on a city-wide basis.

A study entitled “Calculating energy-saving potentials of heat-island reduction strategies” conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify per-building reductions in electricity use from implementing these three strategies on a city-wide scale. In addition, the study reports modeled city-wide electricity savings. The electricity reductions are based on a LBNL model with certain assumptions about the number and orientation of shade trees

[113] The albedo ratio of a surface represents how strongly the surface reflects sunlight. Pavements with higher albedo ratios reflect more sunlight and therefore retain less heat.

and the albedo values of roofs and pavements. Per-building electricity savings are also based on for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980).

This mitigation measure describes how to estimate greenhouse gas emissions reductions from implementing heat-island effect reduction strategies as reported in the LBNL study. Since the LBNL model is based on electricity data for Pre-1980 and 1980+ buildings[114] it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.[115]

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.
- Limitation: it is assumed that the heat-island effect reduction strategies are implemented on a city-wide scale.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof

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[114] This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.

[115] The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the "Indirect Savings" row and "1980+" column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{reduction} = SF \times ElecSavings \times Utility$$

Where

$GHG_{reduction}$	=	Reduction in GHG emissions from implementing heat island effect reduction strategies on a city-wide scale (MT)
SF	=	Sqft of roof Provided by Applicant
ElecSavings	=	Electricity savings (kWh / sqft roof) From Tables 6 through 16 of LBNL study
Utility	=	Carbon intensity of local utility (MT CO_2e / kWh)

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MP# **LU-6.1**

GP-5

From Table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = GHG_{reduction} / GHG_{baseline}$$

Since the Utility term is a factor of both $GHG_{reduction}$ and $GHG_{baseline}$, the percent reduction in GHG emissions does not depend on the value of Utility.

City-Wide GHG reductions
The LBNL study estimates that city-wide reductions in electricity use (and associated GHG emissions) range from about 10-20%. This range is based on the percent indirect savings modeled for five pilot cities: Houston, Baton Rouge, Chicago, Sacramento, and Salt Lake City, as reported in Figure 2 of the LBNL study.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	The following per-building emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. Actual savings are expected to be lower for new buildings due to the Title 24 standards. • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above[116]

[116] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.
- S. Konopacki, H. Akbari. Lawrence Berkeley National Laboratory. 2000. Energy Savings Calculations for Heat Island Reduction Strategies in Baton Rouge, Sacramento, and Salt Lake City. LBNL 42890.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

None

Other Literature Reviewed:

Lawrence Berkeley National Laboratory. Heat Island Group: Benefits of Cooler Pavements. Available online at: http://eetd.lbl.gov/HeatIsland/Pavements/Overview/Pavements99-01.html. Accessed March 2010.

Lawrence Berkeley National Laboratory. Heat Island Group: The Cost of Hot Pavements. Available online at: http://heatisland.lbl.gov/Pavements/Cost.html. Accessed March 2010.

USEPA. Draft. Reducing Urban Heat Islands: Compendium of Strategies, Cool Pavements. Available online at: http://epa.gov/heatisland/resources/pdf/CoolPavesCompendium.pdf

Appendix A

List of Acronyms and Glossary of Terms

List of Acronyms

ACM	alternative calculation method
AF	acre feet
B20	biodiesel (20%)
BOD	biochemical oxygen demand
BMP	best management practice
C	carbon
CAFE	corporate average fuel economy
CAPCOA	California Air Pollution Control Officers Association
CAR	Climate Action Registry
CARB	California Air Resources Board
CCAR	California Climate Action Registry
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	California Commercial End-Use Survey
CGBSC	California Green Building Standards Code
CH_4	methane
CHP	combined heat and power
CIWMB	California Integrated Waste Management Board
CNG	compressed natural gas
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DE	destruction efficiency
DEIR	Draft Environmental Impact Report
DU	dwelling unit
EF	emission factor
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EMFAC	on-road vehicle emission factors model
ET_0	reference evapotranspiration
ETWU	estimated total water use
FCZ	forecasting climate zone
GHG	greenhouse gas
GP	General Plan
GRP	General Reporting Protocol
GWP	global warming potential
HA	hydrozone area
HHV	higher heating value
hp	horsepower
HVAC	heating, ventilating, and air conditioning
IE	irrigation efficiency
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
ITS	intelligent transportation systems
kBTU	thousand British thermal units
kW	kilowatt
kWh	kilowatt-hour
kWh/yr	kilowatt-hours/year
lbs	pounds

LA	landscape area
LADWP	Los Angeles Department of Water and Power
LCA	life cycle assessment
LDA	light-duty auto
LDT	light-duty truck
LED	light-emitting diode
LFM	landfill methane
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MAWA	maximum applied water allowance
MMBTU	million British thermal units
MSW	mixed solid waste
MTCE	metric tonnes carbon equivalent
N_2O	nitrous oxide
NOx	nitrogen oxides
NRDC	Natural Resources Defense Council
NREL	National Renewable Energy Laboratory
OLED	organic light-emitting diode
OFFROAD	off-road vehicle emission factors model
PF	plant factor
PG&E	Pacific Gas and Electric
PM	particulate matter
PUP	Power/Utility Protocol
RASS	Residential Appliance Saturation Survey
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDGE	San Diego Gas and Electric
SLA	special landscape area
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
scf	standard cubic feet
SHP	separate heat and power
SO_2	sulfur dioxide
sqft	square feet
TDM	transportation demand management
TDV	time dependent valuation
TOD	transit-oriented development
tonnes	metric tonnes; 1,000 kilograms
TRU	truck refrigeration unit
URBEMIS	Urban Emissions Model
US	United States
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
VCAPCD	Ventura County Air Pollution Control District
VTPI	Victoria Transport Policy Institute
VMT	vehicle miles traveled
VTR	vehicle trip reduction
WARM	Waste Reduction Model
WMO	World Meteorological Organization
yr	year

Glossary of Terms

Alternative Calculation Method
Software used to demonstrate compliance with the California Building Energy Efficiency Standards (Title 24). The software must comply with the requirements listed in the Alternative Calculation Method Approval Manual.

Additionality[a]
The reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the project. The project should not subsidize or take credit for emissions reductions which would have occurred regardless of the project.

Albedo[a]
The fraction of solar radiation reflected by a surface or object, often expressed as a ratio or fraction. Snow covered surfaces have a high albedo; the albedo of soils ranges from high to low; vegetation covered surfaces and oceans have a low albedo. The Earth's albedo varies mainly through varying cloudiness, snow, ice, leaf area, and land cover changes. Paved surfaces with high albedos reflect solar radiation and can help reduce the urban heat island effect.

Below Market Rate Housing
Housing rented at rates lower than the market rate. Below market rate housing is designed to assist lower-income families. When below market rate housing is provided near job centers or transit, it provides lower income families with desirable job/housing match or greater opportunities for commuting to work through public transit.

Biochemical Oxygen Demand
Represents the amount of oxygen that would be required to completely consume the organic matter contained in wastewater through aerobic decomposition processes. Under the same conditions, wastewater with higher biochemical oxygen demand (BOD) concentrations will generally yield more methane than wastewater with lower BOD concentrations. BOD_5 is a measure of BOD after five days of decomposition.

Biogenic Emissions[b]
Carbon dioxide emissions produced from combusting a variety of biofuels, such as biodiesel, ethanol, wood, wood waste and landfill gas.

Carbon Dioxide Equivalent
A measure for comparing carbon dioxide with other greenhouse gases. Tonnes carbon dioxide equivalent is calculated by multiplying the tonnes of a greenhouse gas by its associated global warming potential.

California Environmental Quality Act
A statute passed in 1970 that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

Carbon Neutral Power
A power generation system which has net zero carbon emissions. Examples of existing carbon neutral power systems are photovoltaics, wind turbines, and hydropower systems.

Carbon Sink
Any process or mechanism that removes carbon dioxide from the atmosphere. A forest is an example of a carbon sink, because it sequesters carbon dioxide from the atmosphere.

"Carrot"
The purpose of a carrot is to provide an incentive which encourages a particular action. Parking cash-out would be considered a "carrot" since the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo.

Combined Heat and Power
Also known as cogeneration. Combined heat and power is the generation of both heat and electricity from the same process, such as combustion of fuel, with the purpose of utilizing or selling both simultaneously. In combined heat and power systems, the thermal energy byproducts of a process are captured and used, where they would be wasted in a separate heat and power system. Examples of combined heat and power systems include gas turbines, reciprocating engines, and fuel cells.

Compact Infill
A Project which is located within or contiguous with the central city. Examples may include redevelopment areas, abandoned sites, or underutilized older buildings/sites.

Climate Zone
Geographic area of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) for use in the CEUS and RASS analyses. The designation of these FCZs was based in part on the utility service area.

Cordon Pricing
Tolls charged for entering a particular area (a "cordon"), such as a downtown.

Density
The amount of persons, jobs, or dwellings per unit of land area. This is an important metric for determining traffic-related parameters.

Destination Accessibility
A measure of the number of jobs or other attractions reachable within a given travel time. Destination accessibility tends to be highest at central locations and lowest at peripheral ones.

Efficacy
The capacity to produce a desired effect.

ENERGY STAR
A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy which sets national standards for energy efficient consumer products. ENERGY STAR certified products are guaranteed to meet the efficiency standards specified by the program.

Elasticity
The percentage change of one variable in response to a percentage change in another variable. Elasticity = percent change in variable A / percent change in variable B (where the

change in B leads to the change in A). For example, if the elasticity of VMT with respect to density is -0.12, this means a 100% increase in density leads to a 12% decrease in VMT.

Evapotranspiration[c]
The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

General Plan
A set of long-term goals and policies that guide local land use decisions. The 2003 *General Plan Guidelines* developed by the California Office of Planning and Research provides advice on how to write a general plan that expresses a community's long-term vision, fulfills statutory requirements, and contributes to creating a great community.

Global Warming Potential[b]
The ratio of radiative forcing that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time.

Graywater
Non-drinkable water that can be collected and reused onsite for irrigation, flushing toilets, and other purposes. This water has not been processed through a waste water treatment plant.

Greenhouse Gas
For the purposes of this report, greenhouse gases are the six gases identified in the Kyoto Protocol: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Headway
The amount of time (in minutes) that elapses between two public transit vehicles servicing a given route and given line. Headways for buses and rail are generally shorter during peak periods and longer during off-peak periods. Headway is the inverse of frequency (headway = 1/frequency), where frequency is the number of arrivals over a given time period (i.e. buses per hour).

Intelligent Transportation System
A broad range of communications-based information and electronics technologies integrated into transportation system infrastructure and vehicles to relieve congestion and improve travel safety.

Job Center
An area with a high degree and density of employment.

Kilowatt Hour
A unit of energy. In the U.S., the kilowatt hour is the unit of measure used by utilities to bill consumers for energy use.

Land Use Index
Measures the degree of land use mix of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses.

Lumen
A unit of luminous flux. A measure of the brilliance of a source of visible light, or the power of light perceived by the human eye.

Master Planned Community
Large communities developed specifically incorporating housing, office parks, recreational area, and commercial centers within the community. Master planned communities tend to encompass a large land area with the intent of being self-sustaining. Many master planned communities may have lakes, golf courses, and large parks.

Mixed Use
A development that incorporates more than one type of land use. For example, a small mixed use development may have buildings with ground-floor retail and housing on the floors above. A larger mixed use development will locate a variety of land uses within a short proximity of each other. This may include integrating office space, shopping, parks, and schools with residential development. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa).

Ordinance
A local law usually found in municipal code.

Parking Spillover
A term used to describe the effects of implementing a parking management strategy in a sub-area that has unintended consequences of impacting the surrounding areas. For example, assume parking meters are installed on all streets in a commercial/retail block with no other parking strategies implemented. Customers will no longer park in the metered spots and will instead “spillover” to the surrounding residential neighborhoods where parking is still unrestricted.

Photovoltaic[c]
A system that converts sunlight directly into electricity using cells made of silicon or other conductive materials (solar cells). When sunlight hits the cells, a chemical reaction occurs, resulting in the release of electricity.

Recycled Water
Non-drinkable water that can be reused for irrigation, flushing toilets, and other purposes. It has been processed through a wastewater treatment plant and often needs to be redistributed.

Ride Sharing
Any form of carpooling or vanpooling where additional passengers are carried on the trip. Ride-sharing can be casual and formed independently or be part of an employer program where assistance is provided to employees to match up commuters who live in close proximity of one another.

Renewable Energy[a]
Energy sources that are, within a short time frame relative to the Earth's natural cycles, sustainable, and include non-carbon technologies such as solar energy, hydropower, and wind, as well as carbon-neutral technologies such as biomass.

Self Selection
When an individual selects himself into a group.

Separate Heat and Power
The typical system for acquiring heat and power. Thermal energy and electricity are generated and used separately. For example, heat is generated from a boiler while electricity is acquired from the local utility. Separate heat and power systems are used as the baseline of comparison for combined heat and power systems.

Sequestration[a]
The process of increasing the carbon content of a carbon reservoir other than the atmosphere. Biological approaches to sequestration include direct removal of carbon dioxide from the atmosphere through afforestation, reforestation, and practices that enhance soil carbon in agriculture. Physical approaches include separation and disposal of carbon dioxide from flue gases or from processing fossil fuels to produce hydrogen- and carbon dioxide-rich fractions and longterm storage in underground in depleted oil and gas reservoirs, coal seams, and saline aquifers.

"Stick"
The purpose of a stick is to establish a penalty for a status quo action. Workplace parking pricing would be considered a "stick" since the employee is now monetarily penalized for driving to work.

Suburban
An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb).

Suburban Center
The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb.

Title 24
Title 24 Part 6 is also known as the California Building Energy Efficiency Standard, which regulates building energy efficiency standards. Regulated energy uses include space heating and cooling, ventilation, domestic hot water heating, and some hard-wired lighting. Title 24 determines compliance by comparing the modeled energy use of a 'proposed home' to that of a minimally Title 24 compliant 'standard home' of equal dimensions. Title 24 focuses on building energy efficiency per square foot; it places no limits upon the size of the house or the actual energy used per dwelling unit. The current Title 24 standards were published in 2008.

Transit-Oriented Development
A development located near and specifically designed around a rail or bus station. Proximity alone does not characterize a development as transit-oriented. The development and surrounding neighborhood should be designed for walking and bicycling and parking management strategies should be implemented. The development should be located within a short walking distance to a high-quality, high frequency, and reliable bus or rail service.

Transportation Demand Management
Any transportation strategy which has an intent to increase the transportation system efficiency and reduce demand on the system by discouraging single-occupancy vehicle travel and encouraging more efficient travel patterns, alternative modes of transportation such as walking, bicycling, public transit, and ridesharing. TDM measures should also shift travel patterns from peak to off-peak hours and shift travel from further to closer destinations.

Transit Ridership
The number of passengers who ride in a public transportation system, such as buses and subways.

Tree and Grid Network
Describes the layout of streets within and surrounding a project. Streets that are characterized as a tree network actually look like a tree and its branches. Streets are not laid out in any uniform pattern, intersection density is low, and the streets are less connected. In a grid network, streets are laid out in a perpendicular and parallel grid pattern. Streets tend to intersect more frequently, intersection density is higher, and the streets are more connected.

Urban
An area which is located within the central city with higher density of land uses than you would find in the suburbs. It may be characterized by multi-family housing and located near office and retail.

Urban Heat Island Effect
The phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements.

Vehicle Miles Traveled
The number of miles driven by vehicles. This is an important traffic parameter and the basis for most traffic-related greenhouse gas emissions calculations.

Vehicle Occupancy
The number of persons in a vehicle during a trip, including the driver and passengers.

Notes:

[a] Definition adapted from: IPCC. 2001. Third Assessment Report: Climate Change 2001 (TAR). Annex B: Glossary of Terms. Available online at: http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf

[b] Definition adapted from: CCAR. 2009. General Reporting Protocol, Version 3.1. Available online at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

[c] Definition adapted from: USEPA. 2010. Greening EPA Glossary. Available online at: http://www.epa.gov/oaintrnt/glossary.htm

Appendix B

Greenhouse Gas Mitigation Measures Task 0:
Standard Approach to Calculate Unmitigated Emissions

Greenhouse Gas Mitigation Measures Task 0: Standard Approach to Calculate Unmitigated Emissions

Prepared for:
California Pollution Control Officers Association (CAPCOA)

Prepared by:
ENVIRON International Corporation
San Francisco, California

And

Fehr & Peers
San Francisco & Walnut Creek, California

Date:
August 2010

Contents

1 Introduction

ENVIRON International Corporation (ENVIRON) and Fehr & Peers worked with the California Air Pollution Control Officers Association (CAPCOA) to quantify reductions associated with greenhouse gas (GHG) mitigation measures that can be applied to California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) analyses. The first part of this overall task defines a standard approach to calculate the baseline emissions before mitigation. This report contains the recommendations for methodologies and approaches to assess the baseline GHG emissions.

This report and its methodologies form the basis for the subsequent tasks associated with quantification of GHG mitigation measures. To the extent possible, default values are included with this report and in the mitigation measure Fact Sheets.

This report presents methods to be used to calculate short-term and one-time emissions sources as well as emissions that will occur annually after construction (operational emissions). The one-time emission sources include changes in carbon sequestration due to vegetation changes and emissions associated with construction. The annual operational emissions include the emissions associated with building energy use including natural gas and electricity, emissions associated with mobile sources, emissions associated with water use and wastewater treatment, emissions associated with area sources such as natural gas fired hearths , landscape maintenance equipment, swimming pools, and golf courses.

2 GHG Equivalent Emissions

The term "GHGs" includes gases that contribute to the greenhouse effect, such as carbon dioxide (CO_2,) methane (CH_4), and nitrous oxide (N_2O), as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfurhexafluoride (SF_6). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Accords (water is not included).[1] There are other GHGs that are not recognized by the Kyoto Accords, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water concentrations and specific human activities. Water appears to act in a positive feedback manner; higher temperatures lead to higher water vapor concentrations in the atmosphere, which in turn can cause more global warming.[2] California has recently recognized nitrogen trifluoride as another regulated greenhouse gas.

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[1] This Kyoto Protocol sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialized countries. The US has not approved the Kyoto treaty.

[2] From the IPCC Third Assessment Report: http://www.grida.no/climate/ipcc_tar/wg1/143.htm and http://www.grida.no/climate/ipcc_tar/wg1/268.htm

Residents and the employees and patrons of commercial and municipal buildings and services use electricity, heating, water, and are transported by motor vehicles. These activities directly or indirectly emit GHGs. The most significant GHG emissions resulting from such residential and commercial developments are emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). GHG emissions are typically measured in terms of MT of CO_2 equivalents (CO_2e), calculated as the product of the mass emitted of a given GHG and its specific global warming potential (GWP).

The effect that each of these gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a MT for MT basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 21 and 310, respectively according to the IPCC's Second Assessment Report (SAR).[3] In emissions inventories, GHG emissions are typically reported in terms of pounds (lbs) or MT[4] of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from developments and human activity in general. Since most regulatory agencies and protocols use the SAR GWP values as a basis, this assessment will also use SAR GWP values even though more recent values exist. However, SAR did not consider nitrogen trifluoride, however there are no sources of nitrogen trifluoride that would typically need to be quantified.

3 Units of measurement: MT of CO_2 and CO_2e

In many sections of this report, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category.

Emissions and reductions are calculated in terms of metric tons. As such, "MT" will be used to refer to metric tons (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds [lbs]).

4 Indirect GHG Emissions from Electricity Use

As noted above, indirect GHG emissions are created as a result of electricity use. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner. The project should use information specific for each local utility provider for different parts of

[3] GWP values from IPCC's Second Assessment Report (SAR, 1996) are still used by international convention and are used in this protocol, even though more recent (and slightly different) GWP values were developed in the IPCC's Fourth Assessment Report (FAR, 2007)

[4] In this report, "MT" will be used to refer to metric MT (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds).

California. Accordingly, indirect GHG emissions from electricity usage are calculated using the utility specific carbon-intensity factor based Power/Utility Protocol (PUP) report from California Climate Action Registry (CCAR)[5] for the 2006 baseline year. ENVIRON does not recommend using the 2004 PUP reports since this year was one of the first year's utilities reported emissions, as such, the data is likely less accurate than subsequent years since utilities had a chance to refine data collection methods for the later years. Furthermore, a large coal burning power plant in Mojave was going offline in 2005 which was factored into the Scoping Plan analysis. Therefore, ENVIRON suggests using the 2006 PUP reports since it likely represents a more accurate dataset year. This emission factor takes into account the baseline year's mix of energy sources used to generate electricity for a specific utility and the relative carbon intensities of these sources. The emission factor will be determined as a CO_2e incorporating the CO_2, CH_4, and N_2O emissions.

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

5 Short-Term Emissions

Short-term or one-time emissions from the development of a Project are associated with vegetation removal and re-vegetation on the Project site and construction-related activities.

5.1 Construction Activities

Construction activities occur during the early stage of a project. Construction activities include any demolition, site grading, building construction, and paving. These construction activities have several main sources of GHG emissions. Off-road construction equipment such as dozers, pavers, and backhoes are used on-site during construction. These pieces of equipment typically are diesel fueled although other fuels are occasionally used. Besides the off-road construction, there are on-road vehicles. These vehicles are used for worker commuting, delivering of material to the site, and hauling material away from the site. The methodology to calculate these sources of emissions is described in the next sections.

5.1.1 Estimating GHG Emissions from Off-Road Construction Equipment

This section describes how emissions from off-road equipment used during demolition, site grading, building construction and paving are calculated. This section can be used for any fuel

[5] California Climate Action Registry (CCAR) Database. PUP Report.

burning equipment such as diesel, gasoline, or compressed natural gas (CNG). For electric equipment please see the method in the next section.

First, the number and type of equipment that will be used in the construction, as well as the duration of the entire construction project, is needed. Absent other data, ENVIRON recommends that each piece of equipment will operate for 8 hours a day, five days a week throughout the construction duration. An equipment hour is defined as one hour of a piece of equipment being used. Specifications for each type of construction equipment (horsepower, load factor, and GHG emission factor) are provided by OFFROAD2007[6]. CO_2 and CH_4 emissions for each type of construction equipment are calculated as follows:

$$\text{Equipment Emissions [grams]} = \text{Total equipment hours} \times \text{emission factor [grams per brake horsepower-hour]} \times \text{equipment horsepower} \times \text{load factor}^{7}$$

The grams of CO_2 and CH_4 are multiplied by their respective GWP and then the two emissions are summed to derive the final CO_2e emissions from the piece of off-road equipment. Since OFFROAD2007 does not provide an emission factor for N_2O which is a minor subset of nitrogen oxides (NO_x) emissions and the contribution to the overall GHG emissions is likely small, it is therefore not included in calculations that used OFFROAD2007. These were accounted for with alternative fuels since they have a larger proportion of N_2O and CH_4.

5.1.2 Estimating GHG emissions from Electric Off-Road Construction Equipment

In order to estimate the indirect GHG emissions associated with electricity consumption of electrical powered equipment, the following inputs are required. First, the total operating hours of the electrical piece of equipment is needed. Secondly, the amount of kilowatts the equipment uses per time is needed. These two pieces are used along with the carbon intensity factor for the local utility provider as follows:

$$\text{Equipment Emissions} = \text{Total equipment hours} \times \text{average power draw (kW/hr)} \times \text{Utility EF } (\text{g } CO_2e \text{ per kWhr})$$

5.1.3 GHG Emissions from On-Road Vehicles Associated with Construction

Emissions from on-road vehicles associated with construction include workers commuting to the site, vendors delivering materials, and hauling away of materials. GHGs are emitted from these vehicles in two ways: running emissions, produced by driving the vehicle, and startup emissions, produced by turning the vehicle on. Idling emissions will not be considered since

[6] OFFROAD2007 is a model developed by the Air Resources Board which contains emission factors for off-road equipment. It is available at : http://www.arb.ca.gov/msei/offroad/offroad.htm

[7] Load factor is the percentage of the maximum horsepower rating at which the equipment normally operates.

regulations exist which limit idling[8] and they would represent a small contribution to the GHG emissions. The majority of these on-road vehicle emissions are running emissions.

Running emissions are calculated using the same method for all trip types. The total Vehicle Miles Traveled (VMT) for the trip type category is estimated, and then multiplied by the representative GHG emission factors for the vehicles expected to be driven. The total VMT for a given trip type is calculated as follows:

$$VMT \quad = \quad Number\ of\ round\ trips \quad x \quad average\ round\ trip\ length\ (miles)$$

The number of trips should be based on project specific information. Default values associated with each land use type can be obtained construction cost estimators or default values in emission estimator programs. Average round trip length should be based on project specific information or county specific default values. After total VMT is calculated, GHG emissions for on-road vehicles associated with construction can be calculated from the following equation:

$$CO_2\ emissions \quad = \quad VMT \quad x \quad EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = running emission factor for vehicle fleet for trip type

The CO_2 calculation involves the following assumptions:

a. Vehicle Fleet Defaults:

    a. Workers commute half with light duty trucks (LDTs) and half commute in light duty autos (LDAs). Half of the LDTs are type 1 and the other half type 2.

    b. Vendors are all heavy-heavy duty vehicles.

    c. Hauling is all heavy-heavy duty vehicles.

b. The emission factor depends upon the speed of the vehicle. A default value of 35 miles per hour will be used.

c. EMFAC emission factors from the construction year will be used for $EF_{running}$.

[8] The Air Resources Board adopted in 2004 and modified in 2005 an Air Toxic Control Measure that limits idling in diesel vehicles to 5-minutes. http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm

The emissions associated with CH_4 and N_2O are calculated in a similar manner or assumed to represent 5% of the total CO_2e emissions. They are then converted to CO_2e by multiplying by their respective global warming potential.

Startup emissions are CO_2 emitted from starting a vehicle. For the various trips during all phases, the startup emissions are calculated using the following assumptions:

a. The same vehicle fleet assumptions as used in running emissions.

b. Two engine startups per day with a 12 hour wait before each startup.[9]

The USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.[10] To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO_2 emissions by 0.95.

5.2 Vegetation Change

ENVIRON suggests following the IPCC protocol for vegetation since it has default values that work well with the information typically available for development projects. This method is similar to the CCAR Forest Protocol[11] and the Center for Urban Forest Research Tree Carbon Calculator[12], but it has more general default values available that will generally applicable to all areas of California without requiring detailed site-specific information[13].

5.2.1 Quantifying the One-Time Release by Changes in Carbon Sequestration Capacity

The one-time release of GHGs due to permanent changes in carbon sequestration capacity is calculated using the following four steps:[14]

1. *Identify and quantify the change in area of various land types due to the development (i.e. alluvial scrub, non-native grassland, agricultural, etc.).* These area changes include not only the area of land that will be converted to buildings, but also areas disrupted by the construction of utility corridors, water tank sites, and associated borrow and grading areas.

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[9] The emission factor grows with the length of time the engine is off before each ignition.

[10] USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle.* Office of Transportation and Air Quality. February.

[11] CCAR. 2007. Forest Sector Protocol Version 2.1. September. Available at: http://www.climateregistry.org/resources/docs/protocols/industry/forest/forest_sector_protocol_version_2.1_sept2007.pdf

[12] Available at: http://www.fs.fed.us/ccrc/topics/urban-forests/ctcc/

[13] The CCAR Forest Protocol and Urban Forest Research Tree Carbon Calculator are not used since their main focus is annual emissions for carbon offset considerations. As such they are designed to work with very specific details of the vegetation that is not available at a CEQA level of analysis.

[14] This section follows the IPCC guidelines, but has been adapted for ease of use for these types of Projects.

Areas temporarily disturbed that will eventually recover to become vegetated will not be counted as vegetation removed as there is no net change in vegetation or land use.[15]

2. *Estimate the biomass associated with each land type.* For the purposes of this report, ENVIRON suggests using the available general vegetation types found in the IPCC publication Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines).[16]

   California vegetation is heavily dominated by scrub and chaparral vegetation which may not be accurately characterized by default forest land properties. Consequently, ecological zones and biomass based subdivisions identified in the IPCC Guidelines were used to sub-categorize the vegetation as scrub dominated. These subcategories should be used to determine the CO_2 emissions resulting from land use impacts.

3. *Calculate CO_2 emissions from the net change of vegetation.* When vegetation is removed, it may undergo biodegradation,[17] or it may be combusted. Either pathway results in the carbon (C) present in the plants being combined with oxygen (O_2) to form CO_2. To estimate the mass of carbon present in the biomass, biomass weight is multiplied by the mass carbon fraction, 0.5.[18] The mass of carbon is multiplied by 3.67[19] to calculate the final mass of CO_2, assuming all of this carbon is converted into CO_2.

4. Calculate the overall change in sequestered CO_2. – For all types of land that change from one type of land to another,[20] initial and final values of sequestered CO_2 are calculated using the equation below.

   Overall Change in Sequestered CO_2 [MT CO_2]

$$= \sum_i (SeqCO_2)_i \times (area)_i - \sum_j (SeqCO_2)_j \times (area)_j$$

   Where:

$SeqCO_2$	=	mass of sequestered CO_2 per unit area [MT CO_2/acre]
area	=	area of land for specific land use type [acre]
i	=	index for final land use type
j	=	index for initial land use type

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[15] This assumption facilitates the calculation as a yearly growth rate and CO_2 removal rate does not have to be calculated. As long as the disturbed land will indeed return to its original state, this assumption is valid for time periods over 20 years.

[16] Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

[17] Cleared vegetation may also be deposited in a landfill or compost area, where some anaerobic degradation which will generate CH_4 may take place. However, for the purposes of this section, we are assuming that only aerobic biodegradation will take place which will result in CO_2 emissions only.

[18] The fraction of the biomass weight that is carbon. Here, a carbon fraction of 0.5 is used for all vegetation types from CCAR Forest Sector Protocol.

[19] The ratio of the molecular mass of CO_2 to the molecular mass of carbon is 44/12 or 3.67.

[20] For example from forestland to grassland, or from cropland to permanently developed.

5.2.2 Calculating CO_2 Sequestration by Trees

Planting individual trees will sequester CO_2. Changing vegetation as described above results in a one-time carbon-stock change. Planting trees is also considered to result in a one-time carbon-stock change. Default annual CO_2 sequestration rates on a per tree basis, based on values provided by the IPCC are used[21]. An average of 0.035 MT CO_2 per year per tree can be used for trees planted, if the tree type is not known.

Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years. Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. In this report, the IPCC default value of 20 years is recommended. For large tree sequestration projects, the Project may consider using the Forest or Urban tree planting protocols developed by Climate Action Registry (CAR). These protocols have slightly different assumptions regarding steady state, tree growth, and replacement of trees..

5.3 Built Environment

The amount of energy used, and the associated GHG emissions emitted per square foot of available space vary with the type of building. For example, food stores are far more energy intensive than warehouses, which have little climate-conditioned space. Therefore, this analysis is specific to the type of building.

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; when this occurs within a building (such as by natural gas consumption) this is a direct emission source[22] associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 part 6 governs energy consumed by the built environment, mechanical systems, and some fixed lighting. This includes the space heating, space cooling, water heating, and ventilation systems. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). The following two steps are performed to quantify the energy use due to buildings:

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[21] The Center for Urban Forest Research Tree Carbon Calculator is not suggested since it requires knowledge on specific tree species to estimate carbon sequestered. This information is typically not available during the preparation of CEQA documents.

[22] California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf, Chapter 8

1. Calculate energy use from systems covered by Title 24[23] (HVAC system, water heating system, and the lighting system).
2. Calculate energy use from office equipment, plug-in lighting, and other sources not covered by Title 24.

The resulting energy use quantities are then converted to GHG emissions by multiplying by the appropriate emission factors obtained by incorporating information on local electricity providers for electricity, and by natural gas emission factors for natural gas combustion.

ENVIRON recommends using default values for Title 24 and non-Title 24 energy use for various building types. These will take into account the building size and climate zone. There are several sources of information that can be used to obtain building energy intensity. Each is described briefly below.

The *California Commercial Energy Use Survey* (CEUS) data is provided by the California Energy Commission (CEC). It is based on a survey conducted in 2002 for existing commercial buildings in various climate zones. Electricity and natural gas use per square foot for each end use in each building type and climate zone is extracted from the CEUS data. Since the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 regulated energy intensity for each building type.

Commercial Buildings Energy Consumption Survey (CBECS) is a survey of non-residential buildings that was conducted in 2003 by the Energy Information Administration (EIA). Electricity and natural gas use per square foot can be extracted from this data. The energy use estimates are assumed to represent 2001 Title 24 compliant buildings. Using CBECS, the percent of electricity and natural gas used for each end use can be calculated. It is then straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type. Similar surveys exist for manufacturing and residential energy use.

The *Residential Appliance Saturation Survey* (RASS) refers to the California Energy Commission Consultant Report entitled "California Statewide Residential Appliance Saturday Study". Data from RASS is used to calculate the total electricity and natural gas use for residential buildings on a per dwelling unit. The RASS study estimates the unit energy consumption (UEC) values for individual households surveyed and also provides the saturation number for each type of end use. The saturation number indicates the proportion of households that have a demand for each type of end-use category. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Alternative Calculation Method (ACM) software is available that makes estimates of the energy consumption by a model Title 24 compliant building. These programs provide

[23] Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. http://www.energy.ca.gov/title24/

annual energy use for the heating, ventilation, and air conditioning (HVAC) system in each building; therefore, estimates from ACM software represent Title 24-regulated energy use. These do not calculate the non-Title 24 energy use for the buildings.

The Department of Energy produced the *Building America Research Benchmark Definition* (BARBD) technical manual, which presents empirical equations for electricity and natural gas usage. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Literature surveys may also be used for building and land use types not well represented by the above sources.

ENVIRON suggests using the CEUS and RASS datasets for these calculations since the data is available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. CEC has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity use due to updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Based on the electricity intensity, CO_2e intensity values (CO_2e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Electricity intensity data is multiplied by an electricity emission factor to generate CO_2e intensity values. The total CO_2e emissions from each building type are calculated by multiplying the CO_2e intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO_2e emissions from all building types gives the total CO_2e emissions from electricity use in Title 24 and non-Title 24 sources in buildings.

Based on the natural gas intensity, CO_2e intensity values (CO_2e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Natural gas intensity data is multiplied by a natural gas emission factor to generate CO_2e intensity values. The total CO_2e emissions from each building type are calculated by multiplying the CO_2 intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO_2e emissions from all building types gives the total CO_2e emissions from natural gas use in Title 24 and non-Title 24 sources in buildings.

5.3.1 Natural Gas Boilers

GHG emissions from the combustion of natural gas are calculated as the product of natural gas consumption, natural gas heat content, and carbon-intensity factor. The Project Applicant has to determine the natural gas consumption, while the heat content and carbon-intensity factor can obtained from the CCAR General Reporting Protocol.

5.4 Area Sources

Area sources are local combustion of fuel. The area sources covered in this section include natural gas fireplaces/stoves and landscape maintenance equipment. Natural gas usage from the primary building heating is not included in this category since it is already included with building energy use. Each of these area sources is discussed further.

5.4.1 Natural Gas Fireplaces/Stoves

GHG emissions associated with natural gas fired fireplaces are calculated using emission factors from CCAR. The average BTU per hour for fireplaces in homes needs to be specified. Default values for annual fireplace usage varies for each County. Natural gas is assumed to have 1,020 BTU per standard cubic foot[24].

5.4.2 Landscape Maintenance

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, roto tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps.

Similar to construction off-road equipment, emission factors are based on the OFFROAD2007 model. These are combined with the hours of operation for each equipment piece as well as the horsepower and load factors. The GHG emissions will be calculated based on the emission factors for the equipment and fuel reported from OFFROAD2007 and the appropriate GWP. Default usages (hours of operation) should be determined for the landscape equipment based on the Project needs.

5.5 Water

Delivering and treating water for use at the project site requires energy. This embodied energy associated with the distribution of water to the end user is associated with the electricity to pump and treat the water. GHG emissions due to water use are related to the energy used to convey, treat and distribute water. Thus, these emissions are indirect emissions from the production of electricity to power these systems.

The amount of electricity required to treat and supply water depends on the volume of water involved. Three processes are necessary to supply water to users: (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users.

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[24] USEPA. 1998. AP-42 Emission Factors. Chapter 1.4 Natural Gas Combustion.

Therefore, to quantify the GHG emissions associated with the distribution of water to an end user, the carbon intensity of electricity is used along with the amount of electricity used in pumping and treating the water. Since consumption of water varies greatly for each land use type, default values need to be determined with several listed in the mitigation measure fact sheets. Since buildings may have different percentages of water associated with indoor and outdoor water usage, the water usage is quantified separately. In addition since mitigation measures associated with water use may be directed separately toward indoor and outdoor water usage, this will be beneficial for this task.

5.5.1 Indoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO_2e emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.[25] The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected indoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from indoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water is estimated in the CEC report. Based on the estimated indoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from indoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing indoor water gives the total emissions due to indoor water use.

5.5.2 Outdoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO_2 emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.[26] The

[25] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF,

CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

[26] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF,

CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

energy needed to supply and convey the water will be used to pump this water from the sources and distribute it throughout the development. The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected outdoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from outdoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water (see recycled water for non-potable water) is estimated in the CEC report. Based on the estimated outdoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from outdoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing outdoor water gives the total emissions due to outdoor water use.

5.5.2.1 Landscape Watering – Turf Grass

The amount of outdoor water used in the landscape watering of turf grass is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance[27] and the CDWR 2000 report "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III."[28] Using this methodology, the amount of water required to support the baseline turf water demand ($Water_{baseline}$) is calculated as follows:

$$ETC = Kc \times ET_0$$

Where:

ETC	=	Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration[29] (inches water/day)
KC	=	Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless). Species-specific; provided in CDWR 2000
ET_0	=	Reference Evapotransporation, the amount of water lost by a reference crop (inches water/day) Region-specific; provided in Appendix A of CDWR 2009

[27] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[28] California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[29] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

Then:

$$\text{Water}_{\text{baseline}} = \text{ETC x Areabaseline X 0.62 x 365}$$

Where:

$\text{Water}_{\text{baseline}}$	=	Volume of water required to support the baseline turf (gallons/year)
$\text{Area}_{\text{baseline}}$	=	Area of existing or standard turf (square feet)
0.62	=	conversion factor (gallons/squarefoot.inches water)
365	=	conversion factor (days/year)

Based on the estimated outdoor water demand for watering turf grass, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering turf grass in lawns may be calculated.

5.5.2.2 Landscape Watering – General

The amount of outdoor water used in the landscape watering of landscapes and lawns is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance.[30] Using this methodology, the amount of water required to support the baseline lawn water demand ($\text{Water}_{\text{baseline}}$) is defined as the Maximum Applied Water Allowance (MAWA) and is calculated as follows:

$$\text{Water}_{\text{baseline}} = \text{MAWA} = \text{ET}_0 \text{ x } 0.62 \text{ x } [(0.7 \text{ x LA}) + (0.3 \text{ x SLA})]$$

Where:

$\text{Water}_{\text{baseline}}$	=	Volume of water required to support the baseline lawn (gallons/year)
MAWA	=	Maximum Applied Water Allowance (gallons/year)
ET_0	=	Annual Reference Evapotranspiration[31] from Appendix A of CDWR 2009 (inches per year)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area[32] includes Special Landscape Area[33] (square feet)

[30] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[31] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

[32] § 491 Definitions in CDWR 2009: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed fro non-development (e.g., open spaces and existing native vegetation)."

[33] § 491 Definitions in CDWR 2009: "Special Landscape Area (SLA) means an area of the landscape dedicated

0.62	=	Conversion factor (to gallons per square foot)
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	=	the additional ETAF for Special Landscape Area

Based on the estimated outdoor water demand for watering lawns, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering lawns may be calculated.

5.5.3 Recycled Water

After use, wastewater is treated and reused as reclaimed water. Any reclaimed water produced is generally redistributed to users via pumping. An estimate of the non-potable water demand to be met through the distribution of recycled water is needed. Estimates of the amount of energy needed to redistribute and, if necessary, treat reclaimed water is 400 kW-hr per acre foot.[34] Based on the estimated demand for reclaimed water, the estimated electricity demand and the utility-specific carbon-intensity factor, non-potable reclaimed water redistribution emissions are calculated.

5.5.4 Process

Industrial land uses can use a large amount of water for their processes. The water used for this will not be quantified since there is not sufficient water use data for this type of land use for the development of a default value. Water use is highly dependent on the specific industry..

5.6 Wastewater

Emissions associated with wastewater treatment include indirect emissions necessary to power the treatment process and direct emissions from degradation of organic material in the wastewater.

5.6.1 Direct Emissions

Direct emissions from wastewater treatment include emissions of CH_4 and biogenic CO_2. The method described by the Local Government Operations Protocol developed by the California Air Resources Board is suggested with default values assigned since detailed plant specific data will typically not be available.[35] The assumed daily 5-day carbonaceous biological oxygen

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solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

[34] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF.

[35] California Air Resources Board. 2008. *Local Government Operations Protocol - for the quantification and reporting of greenhouse gas emissions inventories*. Version 1.0. September 2008. Developed in partnership by California Air Resources Board, California Climate Action Registry, ICLEI - Local Governments for Sustainability, The Climate Registry

demand (BOD_5) of 200 mg/L-wastewater is multiplied by the protocol defaults for maximum CH_4-producing capacity (0.6 kg-CH_4/kg-BOD_5) and other default values to obtain the direct CH_4 emission. The amount of digester gas produced per volume of wastewater, and amount of N_2O per volume of wastewater needs to be determined. These values are then multiplied by the Global Warming Potential factor[36] of 21 for CH_4 or 310 for the GWP of N_2O that would be generated otherwise to obtain the annual CO_2 equivalent emissions.

5.6.2 Indirect Emissions

Indirect GHG emissions result from the electricity necessary to power the wastewater treatment process. The electricity required to operate a wastewater treatment plant is estimated to be 1,911 kW-hr per million gallons.[37] Based on the expected amount of wastewater requiring treatment, which will be assumed to be equal to the indoor potable water demand absent other data, the energy intensity factor and the utility-specific carbon-intensity factor, indirect emissions due to wastewater treatment are calculated.

5.7 Public Lighting

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Lighting sources considered in this source category include streetlights, traffic lights, and parking lot lights. The annual electricity use may be estimated using the number of heads, the power requirements of each head, and the assumption that they operate for 12 hours a day on average for 365 days per year or 24 hours for traffic lights. The emission factor for public lighting is the utility-specific carbon-intensity factor. Multiplying the electricity usage by the emission factor gives an estimate of annual CO_2e emissions from public lighting.

5.8 Municipal Vehicles

GHG emissions from municipal vehicles are due to direct emissions from the burning of fossil fuels. Municipal vehicles considered in this source category include vehicles such as police cars, fire trucks, and garbage trucks. Data from reports by Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, California[38] show that the CO_2 emissions from municipal

[36] Intergovernmental Panel on Climate Change. IPCC Second Assessment - Climate Change 1995.

[37] CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

[38] City of Medford. 2001. Climate Action Plan. October. http://www.massclimateaction.org/pdf/MedfordPlan2001.pdf

City of Northampton. 2006. Greenhouse Gas Emissions Inventory. Cities for Climate Protection Campaign. June. http://www.northamptonma.gov/uploads/listWidget/3208/NorthamptonInventoryClimateProtection.pdf

City of Santa Rosa. Cities for Climate Protection: Santa Rosa. http://ci.santa-rosa.ca.us/City_Hall/City_Manager/CCPFinalReport.pdf

Skoog., C. 2001. Greenhouse Gas Inventory and Forecast Report. City of Duluth Facilities Management and The International Council for Local Environmental Initiatives. October.http://www.ci.duluth.mn.us/city/information/ccp/GHGEmissions.pdf vehicles would be approximately[39] 0.05 MT per capita per year. Using these studies and the expected population, emissions from municipal vehicles may be calculated.

5.9 On-Road Mobile Sources

This section estimates GHG emissions from on-road mobile sources. The on-road mobile source emissions considered a project will be from the typical daily operation of motor vehicles by project residents and non-residents. The GHG emissions based upon all vehicle miles traveled associated with residential and non-residential trips regardless of internal or external destinations or purpose of trip are estimated. Traffic patterns, trip rates, and trip lengths are based upon the methods discussed below.

The CCAR GRP[40] recommends estimating GHG emissions from mobile sources at an individual vehicle level, assuming knowledge of the fuel consumption rate for each vehicle as well as the miles traveled per car. Since these parameters are not known for a future development, the CCAR guidance can not be used as recommended.

Estimating Trip Rates

The majority of transportation impact analysis conducted for CEQA documents in California apply trip generation rates provided by the Institute of Transportation Engineers (ITE) in their regularly updated report *Trip Generation*. The report is based on traffic counts data collected over four decades at built developments throughout the United States. This data is typically based on single-use developments, in suburban locations with ample free parking and with minimal transit service and demand management strategies in place. As a result, the ITE trip generation rates represent upper bound trip generation rates for an individual land use type. This represents a good basis against which to measure the trip-reducing effects of any one or more of the mitigation strategies that will be quantified in subsequent tasks. Therefore, we recommend ITE trip rates as the baseline condition against which the effectiveness of CAPCOA's mitigation measures is applied.

There are some CEQA traffic studies that use data other than ITE trip generation rates. Below we briefly discuss the possible use of these alternative datasets. These traffic studies typically use trip generation data from one of the following sources:

SANDAG Traffic Generators. In the San Diego region, most studies use data from the SANDAG *Traffic Generators* report. This report is similar to the ITE *Trip Generation* in that it uses primarily suburban, single use developments, except that this dataset is based on traffic counts conducted in the San Diego region rather than throughout the United States. In studies where the SANDAG data is used, CAPCOA reviewers should apply the trip reduction estimates presented in subsequent tasks directly to the SANDAG trip generation rates.

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[39] In an effort to be conservative, the largest per capita number from these four reports was used.

[40] California Climate Action Registry (CCAR). 2009. *General Reporting Protocol*. Version 3.1. January.

Travel Forecast Models. For some large development projects or general plans, the local or regional travel model is used to estimate the number of trips generated as well as trip lengths and vehicle speeds at which the individual trips occur. These models account for whether the trip segment occurs on a freeway or local streets as well as the degree of congestion. The values for trip generation rates and trip lengths using ITE and average trip lengths can be to assess the model estimates of vehicle trip generation and VMT. These comparisons should recognize that the travel models explicitly account for various factors that reduce trip-making and VMT, including the demographic characteristics of the site occupants, location and accessibility of the development site relative to other destinations in the region, the mix of land uses within the site and its surrounding area, and possibly the availability of effective transit service. When performing a comparison using the ITE trip rates and average trip lengths, the reviewer should take into consideration that these factors have already been accounted for in the modeling. Therefore, we recommend applying ITE trip rates and lengths along with the adjustments recommended elsewhere in this document (accounting for site location, design and demographics) as a means of reality-checking transportation model results.

Traffic counts at comparable developments. Some traffic assessments elect to conduct traffic counts at existing developments that are similar to the proposed development. When reviewing impact assessments produced using such information, the reviewer should take into account the extent to which the surveyed development(s) already contain trip generation and trip length reducing measures. Care needs to be used to avoid double-counting reductions.

Estimating VMT from Mobile Sources

Data on average trip lengths are used to translate trip generation rates into vehicle miles of travel (VMT). These trip lengths should be obtained from published sources of average trip lengths for different types of trip types (i.e., commute trips, shopping trips, and others) for each region within the state. Vehicle miles traveled (VMT) are calculated by multiplying ITE trip rates by the typical trip lengths.

Some mechanisms that reduce trip generation rates and trip lengths below these standard ITE-trip rates and current average trip lengths might be considered to be intrinsic parts of the development proposal rather than mitigation measures, such as project location (e.g., infill or transit oriented development [TOD]), density, mix of uses, and urban design. These are not considered part of the baseline condition, but are recognized and quantified as project design features (PDFs). This approach has the following advantages: 1) it creates a consistent basis of analysis for all development projects regardless of location and self-mitigating features already included in the project proposal, and 2) it highlights all elements of a project that reduce trip generation rates and vehicle miles traveled.

Other Factors Influencing Mobile Source GHG Emissions

Beyond trip generation, trip length and VMT, other factors that affect GHG emissions include traffic flow, vehicle fuel consumption rates, and fuel type.

Traffic speed and efficiency profiles are largely influenced by: a) the project location and degree of prevailing congestion in its vicinity, b) the degree to which the project implements traffic level-of-service mitigation measures often triggered by CEQA review, and c) actions taken by local, regional governments and Caltrans to reduce corridor or area-wide congestion.

The simplified mitigation assessment methods developed for this study use several categories of emissions factors per VMT that account for a) the generalized project location (core infill, inner ring suburbs, outer suburbs, rural), and b) and region-specific fleet and emissions rate if available.

While it is beyond the scope of this document to provide CAPCOA the ability to perform traffic speed and efficiency analysis, the study report advises CAPCOA on the type of analysis to expect to see in CEQA documents on development projects. CEQA impact and mitigation assessment methods should continue to perform air quality analysis using tools such as EMFAC that reference prevailing traffic speed profiles, especially for infill development and congested corridors, while applying appropriate credit for congestion reducing measures included in the project mitigation requirements, funded capital improvements plans, and fiscally constrained Regional Transportation Plans (RTPs.)

5.9.1 Estimating GHG Emissions from Mobile Sources

The CO_2 emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running and starting emissions from EMFAC2007 as follows:

$$CO_2\ emissions \quad = \quad VMT \quad x \quad EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

The CO_2e calculation involves the following assumptions:

- The emission factor depends upon the speed of the vehicle.
- EMFAC emission factors from the baseline year will be used for $EF_{running}$ based on County specific fleet mix for different trip types and adjusted to account for applicable regulations that are not currently incorporated yet into EMFAC.

Startup emissions are CO_2 emitted from starting a vehicle. Startup emissions are calculated using the following assumptions:

- The number of starts is equal to the number of trips made annually.
- The breakdown in vehicles is EMFAC fleet mix for County specific fleet mix.
- The emission factor for startup is calculated based on a weighted average of time between starts for each trip type (commute trips versus all other types).

Fleet distribution types will be based on EMFAC2007 or the most recent EMFAC version available. For mobile sources, the USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.[41] To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO_2 emissions by 0.95.

Emission factors for alternative fuel can be obtained from the CCAR General Reporting Protocol. For comparison with alternative fuel, N_2O and CH_4 emissions should be calculated separately as their emissions from alternative fuel are generally higher than from gasoline or diesel.

Low-emission-vehicle programs, such as neighborhood electric vehicles (NEV) or car sharing programs, will only be considered in accounting for GHG reductions if included in project-specific design or mitigation measures.

5.10 GHG Emissions from Specialized Land Uses

Below are methods to quantify GHG emissions from some additional land use categories that may be commonly found in development projects. These include golf courses and swimming pools. The methods proposed to determine GHG emissions associated with these sources is discussed in the following sections. The GHG emissions will typically fall into other categories such as landscape maintenance, water usage, and buildings, but since the data sources are different, they are explicitly described.

5.10.1 Golf Courses

Emission flux resulting from the construction of the golf course is not discussed, nor is the sequestration of CO_2 into the turf, trees, or lakes of the golf course. Operational CO_2 emissions were calculated for three areas: irrigation, maintenance (mowing), and on-site buildings' energy use. All three components are discussed in this section.

5.10.2 Calculating CO_2 Emissions from Irrigation of the Golf Course

The release of GHGs due to irrigation practices was calculated in two steps:

1. Identify the quantity of water needed.

2. Calculate the emissions associated with pumping the water.

1. *Identify the quantity of water needed.* Standard water use for an 18-hole golf course ranges from 250 to 450 acre-ft yearly. A survey of golf course superintendents conducted in the summer of 2003 by the Northern and Southern California Golf Associations revealed an annual average California usage of 345 acre-ft.[42] Numerous factors will affect the actual water usage

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[41] USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle.* Office of Transportation and Air Quality. February.

[42] Northern California Golf Association. Improving California Golf Course Water Efficiency, pg 14. http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf

of a specific golf course, and it is likely to vary by year. ENVIRON recommends using the average usage of 345 acre-ft per year annually.

2. Calculate the associated emissions. Using the information identified above, ENVIRON calculates total emissions from irrigation of an 18-hole golf course as follows:

Estimate total dynamic head: This is the combination of lift (300 feet) and desired pressure. Standard athletic field sprinklers require a base pressure of approximately 65 psi.[43]

$$\begin{array}{lcl} 60\ psi\ \ x\ \ 2.31\ ft/psi^{44} & = & 139\ ft \\ \underline{+\ \ lift} & \underline{=} & \underline{300\ ft} \\ Total\ dynamic\ head & = & 439\ ft \end{array}$$

Identify fuel unit and multiply by head: Possible pumping fuels include electricity, natural gas, diesel, and propane. In these calculations, ENVIRON assumes that all pumps will use electricity. Based on the literature, ENVIRON recommends using a pumping energy use of 1.551 kW-hr/acre-ft/ft.[45]

$$1.551\ kW\text{-}hr/acre\text{-}ft/ft \quad x \quad 439\ ft \quad = \quad 681\ kW\text{-}hr/acre\text{-}foot$$

Multiply energy demand by emission factor and convert to MT: The energy demand per acre-ft calculated above is multiplied by the emission factor for the electricity generation source and converted to MT.

$$\frac{681kW\text{-}hr/acre\text{-}ft\ x\ 0.666\ lbs\ CO_2/kW\text{-}hr}{2204.62\ lbs/ton} = 0.21\ MT\ CO_2/acre\text{-}ft$$

The anticipated annual water demand will be multiplied by these values and then combined this with the calculated emission factor yields total annual emissions from irrigation of the golf course. Other outdoor land uses that require irrigation can follow a similar procedure.

5.10.3 Calculating CO_2 Emissions from Maintenance of the Golf Course

Maintenance emissions include the emissions resulting from the mowing of turf grass. The release of GHGs due to mowing was calculated in three steps:

1. Identify the area of turf and frequency of mowing.
2. Identify the efficiency of a typical mower.

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[43] Full Coverage Irrigation. Partial List of Customers Using FCI Nozzles. http://www.fcinozzles.com/clients.asp.

[44] Conversion factor: 1 psi = 2.31 feet of head. Kele & Associates Technical Reference: Liquid Level Measurement. http://www.kele.com/tech/monitor/Pressure/LiqLevMs.pdf

[45] Kansas State University Irrigation Management Series. Comparing Irrigation Energy Costs. Table 4. http://www.oznet.ksu.edu/library/ageng2/mf2360.pdf

3. Calculate the emissions associated with mowing.

1. *Identify the area of turf and frequency of mowing*: An Arizona State economic analysis of golf courses reports that on average 2/3 of the land within a golf course is maintained.[46] ENVIRON suggests assuming that the course will be mowed twice weekly, although high maintenance areas such as greens will be mowed more frequently.[47] ENVIRON recommends a growing season of 52 weeks/year.[48]

2. *Identify the efficiency of a typical mower*. Typical mower calculations are based on the specifications for a lightweight fairway mower (model 3235C) reported by John Deere's Golf & Turf division.[49] A typical mower will use one tank (18 gallons) of diesel per day (assumed to be 8 hours). Given the size specifications of the mower and assuming an average speed of 5.5 mph, such a mower can cover 44 acres on 18 gallons of diesel.

3. *Calculate the emissions associated with mowing*. Using the information collected above and a CO_2 emission factor for diesel combustion[50], ENVIRON calculates the emission factor for mowing the golf course:

$$\frac{2 \text{ mowings/}}{\text{week}} \times \frac{52 \text{ weeks/}}{\text{year}} \times \frac{18 \text{ gallons diesel/}}{44 \text{ acre-mowing}} \times \frac{22.4 \text{ lbs } CO_2\text{/ gallon diesel}}{2204 \text{ lbs/ton}} = 0.43 \text{ MT } CO_2\text{/ acre-year}$$

5.10.4 Calculating CO_2 Emissions from Building Energy Use at the Golf Course

Any of the non-residential building energy use data sources described in the Buildings section may be used to estimate energy intensity at the golf course.

5.11 Pools

Recreation centers may include various pools, spas, and restroom buildings; ENVIRON assumes that pools are the main consumers of energy in recreation centers. This section describes the methods used to estimate the GHGs associated with pools in recreation centers.

The energy used to heat and maintain a swimming pool depends on several factors, including (but not limited to): whether the pool is indoors or outdoors, size of the pool (surface area and depth), water temperature, and energy efficiency of pool pump and water heater, and whether

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46 Total acreage divided by total acreage maintained. Arizona State University, Dr. Troy Schmitz. Economic Impacts and Environmental Aspects of the Arizona Golf Course Industry. http://agb.poly.asu.edu/workingpapers/0501.pdf.

47 Based on Best Practices video. http://buckeyeturf.osu.edu/podcast/?p=51

48 Based on 95% of Southern California Survey respondents report an irrigation season greater than 9-10 months. http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf

49 John Deere Product Specifications. 3235C Lightweight Fairway Mower. http://www.deere.com/en_US/ProductCatalog/GT/series/gt_lwfm_c_series.html

50 EIA. Fuel and Energy Source Codes and Emission Coefficients. http://www.eia.doe.gov/oiaf/1605/factors.html

solar heating is used. By making assumptions for these parameters and using known or predicted values for energy use, ENVIRON estimates the electricity and natural gas use of an outdoor pool.

5.11.1 Recreation Center Characterization

In the calculations described below, ENVIRON assumes that the proposed pools will be outdoor pools with dimensions 50 meters by 22.9 meters (a typical, competition-size pool). ENVIRON bases electricity calculations on a pool that ran its standard water filter for 24 hours per day, 365 days per year. As there is little data publicly available on the energy use of commercial swimming pools, ENVIRON extrapolates energy consumption from information obtained from two sources: 1) Data on electricity used by pool pumps from Pacific Gas and Electric (PG&E),[51] and 2) Data on the annual cost to heat a commercial pool located in Carlsbad, CA.[52]

5.11.2 Electricity Use of Pools

A PG&E study on energy efficiency of a pool pump at the Lyons Pool in Oakland, CA, found an annual electricity use of 110,400 kilowatt hours per year (kWh per yr).[53] The study pool is smaller than the assumed size of the proposed pool (actual size of the Lyons Pool is 35 yards by 16 yards). Accordingly, ENVIRON scales the electricity use to reflect the larger size of the proposed pool.

5.11.3 Natural Gas Use of Pools

The estimated annual cost of heating a standard competition-size pool is $184,400 (or 72% of the total cost of pool operations).[54] ENVIRON used the average PG&E commercial rate for natural gas of $0.95 per therm to convert this cost into annual natural gas use (hundred cubic feet per year [ccf/year]).[55] The commercial rate averages the variable cost due to energy usage and time of year. This corresponds to approximately 184,400 ccf per year.[56]

This value is comparable to that obtained from the pool industry.[57] The estimated cost of heating a residential pool using a natural gas heater is about one dollar per square foot of water

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[51] PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

[52] Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

[53] PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

[54] Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

[55] Pacific Gas and Electric (PG&E). 2007. Gas Rate Finder. Vol 36-G, No. 9. September. http://www.pge.com/tariffs/GRF0907.pdf

[56] At the commercial rate given 1 ccf costs $1.

[57] SolarCraft Services Inc. 2007. Phone conversation with Chris Bumas on September 18, 2007. Novato, CA http://www.solarcraft.com/

surface area per month ($/sqft-month) in residential therms.[58] Applying this value to a competition-size pool yields an annual natural gas use of 147,600 ccf/year.

5.11.4 Conversion of Electricity and Natural Gas Use to Greenhouse Gas Emissions

ENVIRON used utility-specific electricity and natural gas emission factors to calculate the total CO_2 emissions for each pool. A summary of the calculations is shown below:

$$Emissions\ from\ Electricity\left(\frac{Tonnes\ CO_2/yr}{1{,}000\,sqft}\right) =$$
$$\frac{Energy\ Use\,(ccf/yr) \times Emission\ Factor\,(lbs\ CO_2e/ccf) \times Conversion\ Factor\,(tonne/2205\,lbs)}{Surface\ Area\ of\ Pool\,(1{,}000\,sqft)}$$

$$Emissions\ from\ Natural\ Gas\left(\frac{Tonnes\ CO_2/yr}{1{,}000\,sqft}\right) =$$
$$\frac{Energy\ Use\,(ccf/yr) \times Emission\ Factor\,(lbs\ CO_2e/ccf) \times Conversion\ Factor\,(tonne/2205\,lbs)}{Surface\ Area\ of\ Pool\,(1{,}000\,sqft)}$$

[58] The residential price for one therm of natural gas.

Appendix C

Transportation Appendices

Appendix C.1

Transportation Calculations

Appendix C.1 – Transportation Calculations

Table C-1 provides further detail into the calculations of percent reduction in vehicle miles traveled (VMT) for each of the fact sheets (that have references to the appendix). Many of the strategies in the table below do not provide the full equations for percent reduction in vehicle miles traveled. Only the equations or variables which require further detail are outlined here. The table also provides detail on any assumptions which are made to perform the calculations and the basis of such assumptions. An additional section below Table C-1 provides a detailed discussion of the calculations made for the transit accessibility strategy.

Table C-1
Transportation Calculations

Strategy	T#	Equation	Variable	Value	Source/Notes
Increase Density (Land Use/Location)	A2	A = Percentage increase in housing units per acre = (number of housing units per acre – number of housing units per acre for typical ITE development) / (number of housing units per acre for typical ITE development)	number of housing units per acre for typical ITE development	7.6 = blended average density of residential development in the US in 2003	A.C. Nelson. "Leadership in a New Era." *Journal of the American Planning Association,* Vol. 72, Issue 4, 2006, pp. 393-407 – as cited in *Growing Cooler*
		A = Percentage increase in jobs per job acre = (number of jobs per job acre – number of jobs per job acre for typical ITE development) / (number of jobs per job acre for typical ITE development)	number of jobs per job acre for typical ITE development	20 = average jobs per job acre	Year 2005 Land Use, Sacramento County Travel Demand Model, 2008
Improve Design of Development (Land Use/Location)	A3	A = Percentage increase in intersections versus a typical ITE suburban development = (intersections per square mile of project – intersections per square mile of typical ITE suburban development) / (intersections per square mile of typical ITE suburban development)	intersections per square mile of typical ITE suburban development	36 = ITE site average intersection density	Based on Fehr & Peers methodology for analysis in the report: *Proposed Trip Generation, Distribution, and Transit Mode Split Forecasts for the Bayview Waterfront Project Transportation Study*, Fehr & Peers, 2009

Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Increase Diversity (Mixed Use) (Land Use/Location)	A5	A = Percentage increase in land use index versus single use development = (project land use index – single land use index) / single land use index	single land use index	0.15 = - [1*(ln 1) + 0.01*(ln 0.01)+…+0.01*(ln 0.01)]/ ln(6)	--
Increase Destination Accessibility (Land Use/Location)	A6	A = Percentage decrease in distance to downtown or major job center = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)	distance to downtown/job center for typical ITE development	12 miles (average work trip length from NHTS)	2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends, p.15 (Table 5)
Increase Transit Accessibility (Land Use/Location)	A7	A = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development	% transit mode share for typical ITE development	1.3%	NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurvey WkdayRpt.pdf, p.150 (Suburban – SCAG, SANDAG, Fresno County.)
		B = Adjustment from transit mode share to VMT = 1 / average vehicle occupancy * conversion from VT to VMT = 0.67	Divide by average vehicle occupancy to translate to VT	1 / average vehicle occupancy = 1 / 1.5 = 0.67	NHTS, http://www.dot.ca.gov /hq/tsip/tab/documents /travelsurveys/2000 _Household_Survey.pdf, p.iii
			conversion from VT to VMT	1	Assume all trip lengths are equal (vehicle trips to VMT) [1]

[1] To convert to vehicle miles traveled, we assume that all vehicle trips will average out to typical trip length (“assume all trip lengths are equal”). Thus, we can assume that a percentage reduction in vehicle trips will equal the same percentage reduction in vehicle miles traveled.

Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Unbundle Parking Cost from Property Cost (Parking Pricing/Policy)	C3	A = Adjustment from Vehicle Ownership to VMT = average trips per 2 vehicles * 1 vehicle per average trips =(9.8 trips/ 2 vehicles) * (1 vehicle / 5.7 trips) = 0.85	Average trips per X vehicles	Households with 2 vehicles take 9.8 trips while households with 1 vehicle take 5.7 trips per day	i.e. A reduction of 1 vehicle leads to an 0.85 reduction in vehicle trips http://www.dot.ca.gov/hq /tsip/tab/documents/travel surveys/2000_Household _Survey.pdf, table 8.7
Expand Transit Network (Transit System Improvements)	D2	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Enhance Transit Service Frequency/Speed (Transit System Improvements)	D3	E = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Implement Bus Rapid Transit (Transit System Improvements)	D4	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Implement Required Trip Reduction Programs (Trip Reduction Programs)	E2	C = Adjustment from vehicle mode share to commute VMT	--	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) [i]
Provide a Transit Fare Subsidy (Trip Reduction Programs)	E3	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) [i]
Implement Commute Trip Reduction Marketing (Trip Reduction Programs)	E7	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) [i]

Table C-1
Transportation Calculations

Strategy	T#	Equation	Variable	Value	Source/Notes
Provide Employer-Sponsored Vanpool/Shuttle (Trip Reduction Programs)	E8	C = Adjustment from vanpool mode share to commute VMT	--	0.67	see Increase Transit Accessibility
Implement Bike-Sharing Programs (Trip Reduction Programs)	E10	% VMT Reduction = A * B * C = 2% * 7% * 20% = 0.03%	--	--	--
		A = 2% = Net new bicycle mode share = (existing mode share * % increase in bicycle mode share) – existing mode share	Existing mode share	Estimate at 1%	Pucher et al., 2010
			% increase in bicycle mode share	135 – 300%	Pucher et al., 2010, Table 4 (see fact sheet for calculations)
		B = % of new bicycle trips shifting from vehicles (from literature)	--	6-7%	Pucher et al., 2010 and Bike-Share in NYC, 2009, Table 4, p.45
		C = adjustments to convert from vehicle mode share to VMT * adjustment for shorter than average trip lengths = 1*20%	adjustments to convert from vehicle mode share to VMT	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) [i]
			adjustment for shorter than average trip lengths	1.94/9.9 = 20%	Adjustment to reflect ratio of bike trip length to average trip length (this strategy will only replace the shorter vehicle trips that can be reasonably replaced by a bicycle). [1.94 miles (average bike trip length from Moving Cooler Appendices B-28 referencing NHTS) / 9.9 miles (average household trip length from NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx)]

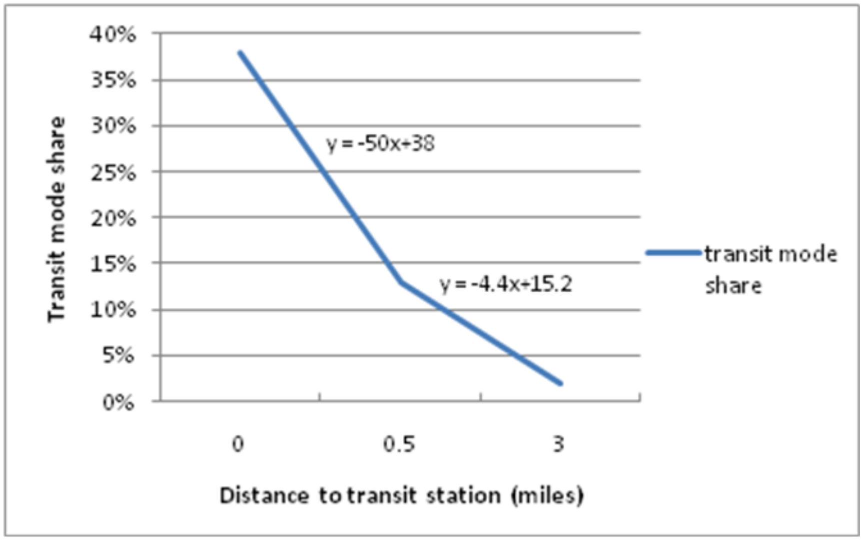
Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Provide End of Trip Facilities (Trip Reduction Programs)	E11	*utilizing the same equation in bike sharing program section, set A = 1.3% = (7.1% - 5.8%) % VMT Reduction = A * B * C = 1.3% * 7% * 20% = 0.02%	--	--	--
Establish Schoolpool (Trip Reduction Programs)	E13	B = Adjustments to convert from participation to daily VMT to annual school VMT = [(avg # of families per carpool - 1) / avg # of families per carpool] *% of school days	avg # of families per carpool	2.5	TDM Case Studies, DRCOG, p.13
			% of school days	75% = 39 school weeks/ 52 weeks	TDM Case Studies, DRCOG, p.13
Provide School Buses (Trip Reduction Programs)	E14	B = Adjustments to convert from participation to daily VMT to annual school VMT = % of school days	% of school days	75% = 39 school weeks/ 52 weeks	TDM Case Studies, DRCOG, p.13
Cordon Pricing (Road Pricing Management)	F2	A = % increase in pricing for passenger vehicles to cross cordon	--	100 – 500%	*Moving Cooler* uses peak hour price per mile instead of crossing price. The percentage change can still be calculated to provide a general estimate for a high range % change. Assuming a baseline of $0.10, calculated percentage increase to $0.49 - $0.65 (*Moving Cooler*) and adjusted with rounding
		C = % of VMT Impacted by Cordon Pricing and Mode Shift Adjustments = %VMT impacted by congestion pricing * Mode shift adjustment = 8.8% (peak period) and 21% (all day)	--	--	--

Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
		Peak period = 25% * 35% = 8%	%VMT impacted by congestion pricing	25%	20% of trips are work trips (NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx) and round up assuming other trips travel during peak periods
			Mode shift adjustment	35% = 20% + 30%/2	Of the estimated trips affected to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 ppl per HOV), and 20% are trip reductions/shift to transit, walk or bike
		Static all day price (London) = 60% * 35% = 21%	% VMT impacted by congestion pricing	60%	Conservatively assume 60% of trips fall in the peak periods and mid-day
			Mode shift adjustment	35%= 20% + 30%/2	Of the estimated reduced trips due to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 people per HOV), and 20% are trip reductions/shift to transit, walk or bike

Increase Transit Accessibility (Land Use/Location)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38

0.5 to 3 miles	-4.4*x + 15.2
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010	



Data was taken from Table 5-25 of Lund et al, 2004. The table provided transit commute mode shares for those living with ½ mile of a rail station for 5 sites surveyed within California. Removing the extreme low and high percentages, this provided a range of transit commute mode share of 13% to 38%. A simple linear extrapolation was conducted to provide a relationship for distance to transit (between 0 and ½ mile) to transit mode share, via the equation: transit mode share = -50 * distance to transit + 38. The table also provided transit mode shares for those living from ½ to 3 miles from a station, a range from 2% to 13%. Using the same methodology, a relationship for distance to transit (between ½ mile and 3 miles) to transit mode share is provided via the equation: transit mode share = -4.4x + 15.2.

Appendix C.2

Trip Adjustment Factors

Appendix C.2 – Trip Adjustment Factors

The trip adjustment factors are not explicitly used for calculations of reduction in vehicle miles traveled (VMT) but serve as an added resource point for users of this document. For example, we report all commute trip reduction (CTR) program strategies as a percentage reduction in commute VMT. If the user would like to translate this to project level VMT (assuming the project is NOT an office park), and the user does not have statistics about the project area readily available, then the trip adjustment factors table can be utilized.

Example: Assume the user is providing a 15% reduction in commute VMT for a implementation of a ride share program. To calculate an estimated reduction in project level VMT, the user can multiple 15% by 20% (NHTS average % of work trips) and again multiply by 12.0 / 9.9 (average work trip length/average trip length) to adjust for both the portion of trips which are work related and that work trips tend to be longer than average trips.

TABLE C-2. TRIP ADJUSTMENT FACTORS

	NHTS[1]	Sacramento Region[2]	San Diego Region [3]	Rural (Kings County, CA) [4]
Average Work Trip Length (vehicle)	12.0	10.4	8.4	-
Average Trip Length (vehicle)	9.9	6.8	6.9	8.7
Average % of Work Trips	20%	20%	-	12%
Average % of School Trips	9.8%	-	-	-
Average Length of School Trips (Vehicle)	6.0	-	4.2	-
Average Vehicle Occupancy (All Trips)	1.5	1.4	1.5	-

Source:
1. 2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends
2. SACMET model, Fehr & Peers, 2010.
3. SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002)
4. NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx

Appendix C.3

Induced Travel Memo

FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: February 3, 2010

To: CAPCOA Team

From: Tien-Tien Chan, Jerry Walters, and Meghan Mitman

Subject: Induced Travel Material

SF10-0475

Induced travel is a term used to describe how travel demand responds to roadway capacity expansion and roadway improvements. Consistent with the theory of supply and demand, the general topic of research concerning induced travel is that reducing the cost of travel (i.e., reduced travel time due to a new road improvement) will increase the amount of travel. In other words, road improvements alone can prompt traffic increases. To what degree and under what circumstances these increases occur is a matter of debate and the key subject of most induced travel research. We have attached the following documents which represent research on induced travel effects:

- *Comparative Evaluations on the Elasticity of Travel Demand* – study conducted for the Utah DOT which included national literature review of induced travel studies
- *Are Induced-Travel Studies Inducing Bad Investments?* – article by Cervero in Access Magazine: Transportation Research at the University of California
- *Road Expansion, Urban Growth, Growth, and Induced Travel: A Path Analysis* – APA Journal paper by Cervero, also discusses the impacts of induced growth and induced investments

The reader should be aware that conditions may vary considerably and the extent of induced travel depends on a variety of factors, including: the degree of prior congestion in the corridor, its duration over hours of the day, its extent over lane miles of the corridor, the degree to which un-served traffic diverts to local streets and the degree of congestion on those routes, the availability of alternate modes within the corridor, whether corridor is radial and oriented toward downtown with high parking cost and limited availability or circumferential, planned level of growth in the corridor, whether the corridor is interstate or interregional, whether it is a truck route, and other factors.

GHG reduction strategies such as transportation system management (e.g. signal coordination, adaptive signal control) may also have the potential for inducing travel. For such strategies, if the estimated improvement exceeds 10% benefit in travel time reduction, we recommend conducting project specific analysis on induced travel prior to establishing GHG reduction benefits.

Appendix D

Building Mitigation Measure Quantification Methods

This Appendix summarizes the steps and assumptions used in two of the mitigation strategies – exceed Title 24 energy efficiency standards (BE-1) and installing energy efficient appliances (BE-4).

Background

GHGs are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, ventilation, and hard-wired lighting. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

The Title 24 standards have been updated twice (in 2005 and 2008)[1] since some of these data used to estimate energy use were compiled. California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity and natural gas use due to the two most recent updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined in this survey, the use of survey data with updates for Title 24 will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Another mitigation measure to reduce a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production is to use energy-efficient appliances. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, only energy-efficient refrigerators have been evaluated for grocery stores.

1 California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: http://www.energy.ca.gov/ceus/

Methodology

Datasets

The Residential Appliance Saturation Survey (RASS)[2] and California Commercial Energy Use Survey (CEUS)[3] datasets were used to estimate the energy intensities of residential and non-residential buildings, respectively, since the data is available for several land use categories in different climate zones in California. The RASS dataset further differentiates the energy use intensities between single-family, multi-family and townhome residences.

The Energy Star and Other Climate Protection Partnerships 2008 Annual Report[4] and subsequent Annual Reports were reviewed for typical reductions for energy-efficient appliances. ENERGY STAR residential refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. ENERGY STAR commercial refrigerators use 35% less electricity than standard appliances.

Calculations

Exceeding Title 24 Energy Efficiency Standards (BE-1)

RASS and CEUS datasets were used to obtain the energy intensities of different end use categories for different building types in different climate zones. Energy intensities from CEUS are given per square foot per year and used as presented. RASS presents Unit Energy Consumption (UEC) per dwelling unit per year and saturation values; the energy intensities used in this analysis are products of the UEC and saturation values.

Data for some climate zones is not presented in the CEUS and RASS studies. However, data from adjacent climate zones is assumed to be representative and substituted as follows:

For non-residential building types:
Climate Zone 11 used Climate Zone 9 data.
Climate Zone 12 used Climate Zone 9 data.
Climate Zone 14 used Climate Zone 1 data.
Climate Zone 15 used Climate Zone 10 data.

For residential building types:
Climate Zone 6 used Climate Zone 2 data.
Climate Zone 14 used Climate Zone 1 data.
Climate Zone 15 used Climate Zone 10 data.

RASS and CEUS data are based on 2002 consumption data. Because older buildings tend to be less energy efficient, and the majority of the buildings in the survey were likely constructed

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2 California Statewide Residential Appliance Saturation Study Reporting Center. Available at: http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx
3 California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: http://www.energy.ca.gov/ceus/
4 United States Environmental Protection Agency 2009. ENERGY STAR and Other Climate Protection Partnerships: 2008 Annual Report. Available at: http://www.epa.gov/cpd/pdf/2008AnnualReportFinal.pdf

before 2001, the RASS and CEUS data likely overestimate energy use for a 2001 Title 24-compliant building.

To account for updates since the 2001 Title 24 standards, percentage reductions for each end use category taken directly from the CEC's "Impact Analysis for 2005 Energy Efficiency Standards" and "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings" reports were applied to the CEUS and RASS datasets for improvements from 2001 to 2005, and 2005 to 2008, respectively (see Tables D-1 and D-2). For the CEUS data, exterior lighting was assumed to be covered by Title 24 lighting and therefore has the full percentage reductions taken. Interior lighting was assumed to be 50% Title 24 and 50% non-Title 24 uses. Therefore only half of the reduction for lighting was applied. The resulting 2008 numbers were then used as baseline energy intensities for this mitigation strategy. The total baseline energy intensities are calculated as follows:

$$\text{Baseline} = \sum\left[\mathrm{T24}_{2001} \times \left(1 - \mathrm{R}_{2001\text{-}2005}\right) \times \left(1 - \mathrm{R}_{2005\text{-}2008}\right)\right] + \sum \mathrm{NT24}$$

Where:

Baseline	=	Total baseline energy intensities of building category
$T24_{2001}$	=	Energy intensities of Title 24 regulated end use from RASS or CEUS
$R_{2001\text{-}2005}$	=	Reduction from 2001 to 2005
$R_{2005\text{-}2008}$	=	Reduction from 2005 to 2008
NT24	=	Non-Title 24 regulated end use energy intensities

Table D-1

Reduction in Title 24 Regulated End Use for Non-Residential Buildings

Energy Source	End Use	Reduction from 2001 to 2005	Reduction from 2005 to 2008
Electricity	Heating	4.9%	37.2%
	Ventilation	5.0%	1.5%
	Refrigeration	0.0%	0.0%
	Process	0.0%	0.0%
	Office Equipment	0.0%	0.0%
	Motors	0.0%	0.0%
	Miscellaneous	0.0%	0.0%
	Interior Lighting	4.9%	5.9%
	Water Heating	0.0%	0.0%
	Cooking	0.0%	0.0%
	Air Compressors	0.0%	0.0%
	Cooling	6.7%	8.3%
	Exterior Lighting	9.8%	11.7%
Natural Gas	Cooking	0.0%	0.0%
	Cooling	10.4%	9.3%
	Heating	3.1%	15.9%
	Water Heating	0.0%	0.0%
	Process	0.0%	0.0%
	Miscellaneous	0.0%	0.0%

Table D-2
Reduction in Title 24 Regulated End Use for Residential Buildings

Energy Source	End Use (As presented in RASS Dataset)	Reduction from 2001 to 2005			Reduction from 2005 to 2008		
		Multi-family	Single family	Town home	Multi-family	Single family	Town home
Electricity	Conv. Electric heat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	HP Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Aux Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Furnace Fan	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Central A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Room A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Evap Cooling	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Water Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Solar Water Heater	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Clothes Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dish Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	First Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Second Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Freezer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Outdoor Lighting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Electric Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Microwave	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Home Office	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	PC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Water Bed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Well Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Natural Gas	Primary Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Auxiliary Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Conv. Gas Water Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Solar Water Heat w/Gas Backup	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The same approach was used to quantify GHGs emission reduction from exceeding Title 24 energy efficiency standards by 1%. The 1% reduction was applied to only energy use intensities for Title 24 regulated end use categories. For the CEUS data, the reduction was not applied to any portion of interior lighting. The reduced energy use intensities were added to the unadjusted energy use intensities for non-Title 24 regulated end use categories to obtain the total energy use intensities for exceeding Title 24 energy efficiency standards by 1% for each building category. These were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{\sum\left[T24_{2001} \times \left(1 - R_{2001\text{-}2005}\right) \times \left(1 - R_{2005\text{-}2008}\right) \times 99\%\right] + \sum NT24}{\text{Baseline}}$$

Where:

Baseline	=	Total baseline energy intensities of building category
$T24_{2001}$	=	Energy intensities of Title 24 regulated end use from RASS or CEUS
$R_{2001\text{-}2005}$	=	Reduction from 2001 to 2005
$R_{2005\text{-}2008}$	=	Reduction from 2005 to 2008
NT24	=	Non-Title 24 regulated end use energy intensities

Installing Energy Efficient Appliances

The same baseline line energy use intensities from the Exceeding Title 24 Energy Efficiency Standards mitigation were used for this mitigation strategy. For all appliances except ceiling fan, the reductions as presented in the ENERGY STAR 2008 annual report were applied to the energy use intensities of the corresponding energy end use categories. All other end use categories were kept unadjusted. The percentage reductions were calculated as follows:

$$\text{Percentage Reduction} = 1 - \frac{\text{Appliance Intensity} \times \left(1 - ESR\right) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

Baseline	=	Total baseline energy intensities of building category
Appliance Intensity	=	2008 baseline energy intensity of appliance in consideration
ESR	=	Reduction from ENERGY STAR appliance
Other End Use	=	2008 baseline energy intensity of all other end uses

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the “Miscellaneous” category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from the National Renewable Energy Laboratory (NREL) Building American Research Benchmark Definition (BARBD)[5] was used. BARBD reported that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it was assumed that each multi-family, single-family, and townhome residence has one ceiling fan. Therefore, the 50% reduction from ENERGY STAR for ceiling fan was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category. In other words, 42.05 kWh was subtracted from the electricity end use intensities of the "Miscellaneous RASS" category in evaluating the GHGs emission reduction from installing energy efficient ceiling fans.

The total energy use intensities with reduction from each appliance in consideration were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{(\text{Misc} - 42.05) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

Baseline = Total baseline energy intensities of building category
Misc = 2008 energy intensity in Miscellaneous category for electricity
Other End Use = 2008 baseline energy intensity of all other end uses

5 NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

Appendix E

Carbon, Water and CO_2 Sequestration Intensity Factors

Table E-1: Carbon Intensity

Utility	CO_2 intensity (lb/MWh)[1]								
	2000	2001	2002	2003	2004	2005	2006	2007	Suggested Value[2]
Anaheim Public Utilities						1,399.80	1,416.74	1,543.28	1,416.74
Austin Energy						1,127.37	1,077.97	1,117.37	1,077.97
City and County of San Francisco						76.28			76.28
City of Palo Alto Public Utilities						320.94	39.02	426.82	39.02
Glendale Water & Power						1,065.00			1,065.00
Los Angeles Department of Water & Power	1,407.44	1,403.39	1,348.48	1,360.07	1,360.60	1,303.58	1,238.52	1,227.89	1,238.52
Pacific Gas & Electric Company					566.2	489.16	455.81	635.67	455.81
PacifiCorp					1,811.00	1,812.22	1,747.30	1,775.28	1,747.30
Pasadena Water & Power						1,409.65	1664.14		1,664.14
Platte River Power Authority						1,970.93	1,955.66	1,847.88	1,955.66
Riverside Public Utilities						1,333.45	1,346.15	1,325.65	1,346.15
Roseville Electric							565.52	793.8	565.52
Sacramento Municipal Utility District					769	616.07	555.26	714.31	555.26
Salt River Project							1,546.28	1,469.90	1,546.28
San Diego Gas & Electric					613.75	546.46	780.79	806.27	780.79
Seattle City Light								17.77	17.77
Sierra Pacific Resources								1,442.78	1,442.78
Southern California Edison					678.88	665.72	641.26	630.89	641.26
Turlock Irrigation District							682.48	807	682.48

Notes:

1. Based on Table G6 of Local Government Operation Protocol version 1.1
2. The suggested values are based on 2006. If no 2006 value was available, 2005 was used followed by 2007.

Table E-2: Water Intensity

	Indoor Water Uses		Outdoor Water Uses	
	Northern California	Southern California	Northern California	Southern California
	kWh/MG			
Water Supply and Conveyance	2,117	9,727	2,117	9,727
Water Treatment	111	111	111	111
Water Distribution	1,272	1,272	1,272	1,272
Wastewater Treatment	1,911	1,911	0	0
Regional Total	5,411	13,022	3,500	11,111

Note: Based on Table ES-1 from CEC. 2006. Refining Estimates of Water-Related Energy Use in California, CEC-500-2006-118.

Table E-3: Default CO_2 Sequestration Accumulation

Land Use	Sub-Category	Default annual CO_2 accumulation per acre[1] (tonnes CO_2/year)
Forest Land	Scrub	14.3
	Trees	
Cropland		111
Grassland	--	6.2
Wetlands	--	4.31

Note: Based on Tables 4.3, 4.7 and 6.4 from IPCC. 2006. Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines). Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

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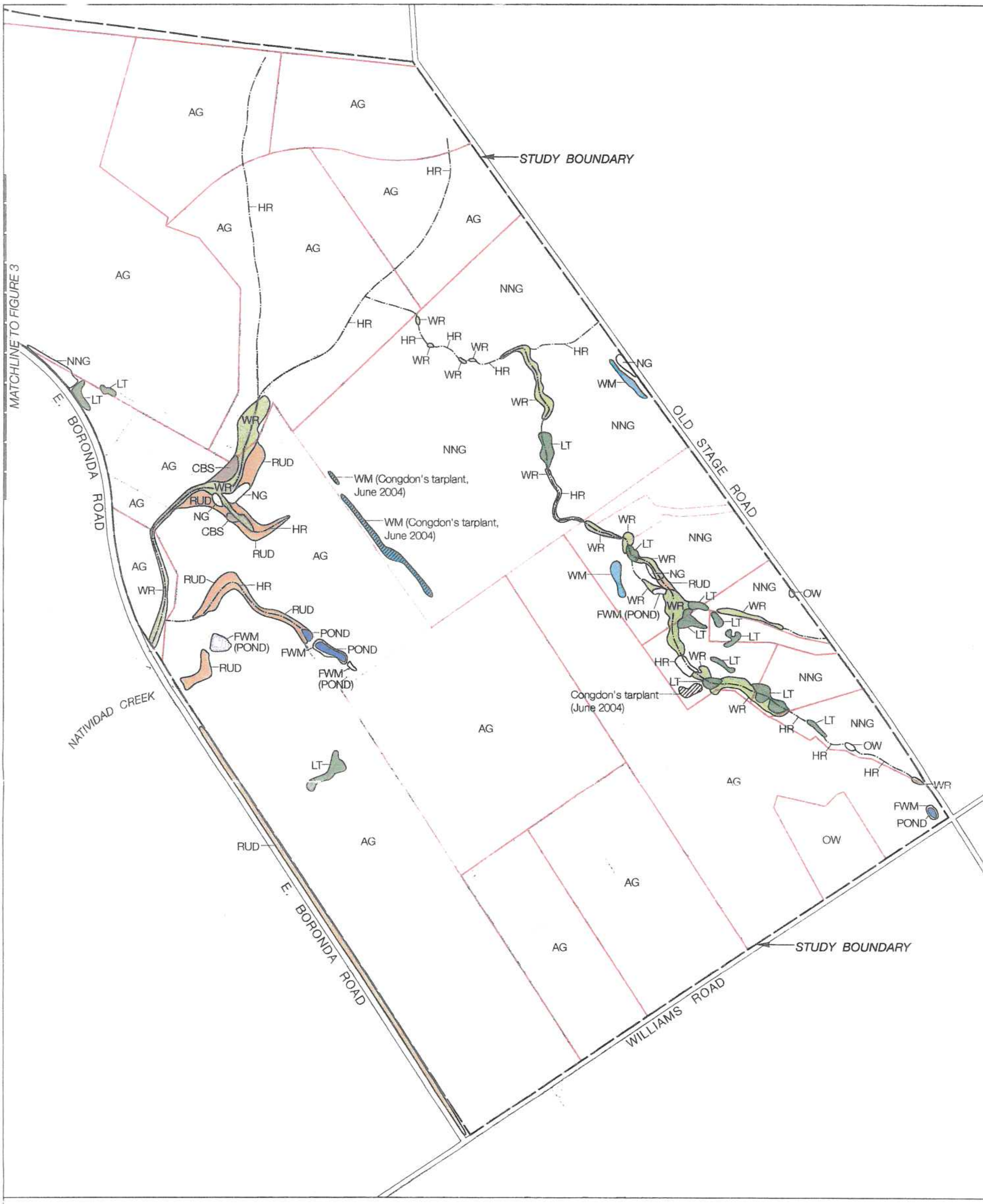
APPENDIX D –BIOLOGICAL RESOURCES REPORT



PLANT COMMUNITY TYPES

AG	Agricultural Fields	FWM	Freshwater Marsh
NNG	Non-native Grassland	HR	Herbaceous Riparian
NG	Native Grassland	OW	Oak Woodland
CBS	Coyote Brush Scrub	LT	Landscape Trees (eucalyptus and others)
WR	Willow Riparian Woodland	WM	Wet Meadow
RUD	Ruderal Grassland	POND	Pond with Open Water

Parcel Lines within Study Area

Drainage Centerline

SPECIAL STATUS PLANT SPECIES

Congdon's Tarplant, observed June 2004

NORTH

SCALE: 1" = 1,000'

0 1,000' 2,000'

Biotic Resources Group

2551 S. Rodeo Gulch # 12 • Soquel, California 95073

(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR

Existing Plant Community Types and Special Status Plant Species

Figure 2

1/05

315-02

Biotic Resources Group

2551 S. Rodeo Gulch # 12 • Soquel, California 95073

(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR

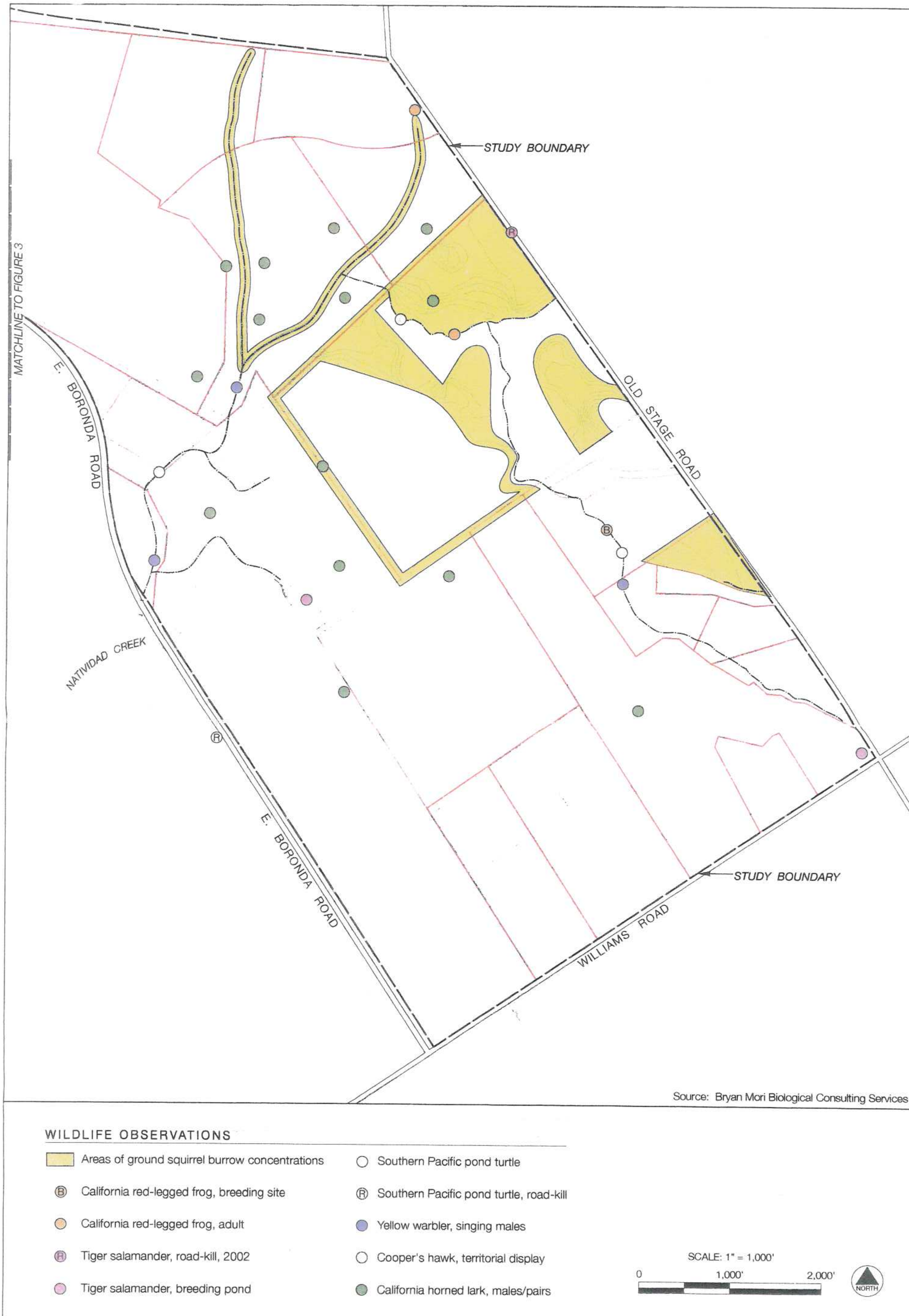
Existing Plant Community Types and

Special Status Plant Species

Figure 3

1/05

315-02



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Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of Ground Squirrel Burrow Concentrations

Figure 4
1/05
315-02

Source: Bryan Mori Biological Consulting Services

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Special-Status Wildlife Observations and Areas of Ground Squirrel Burrow Concentrations

Figure 5
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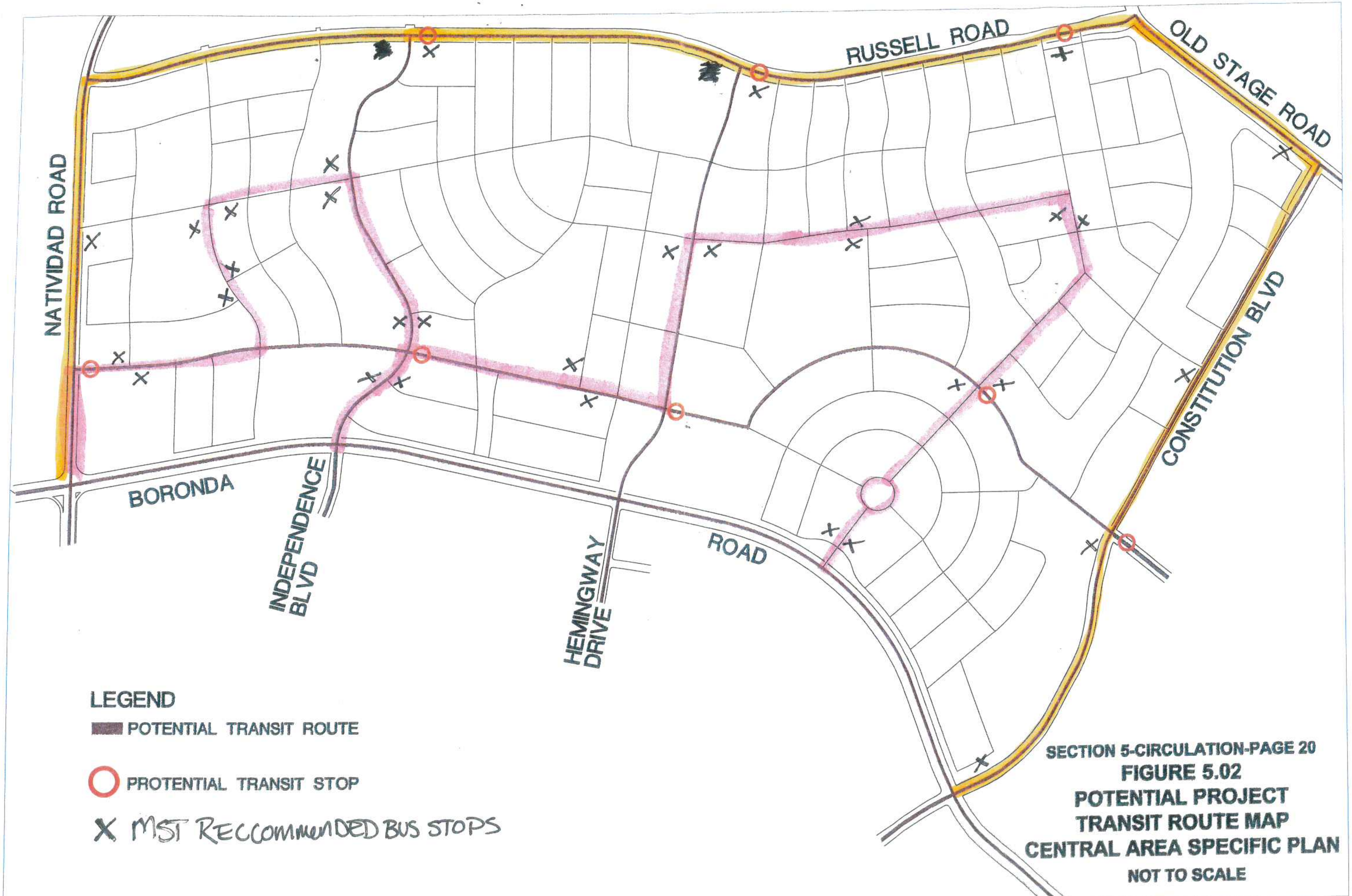

RUSSELL ROAD
OLD STAGE ROAD
NATIVIDAD ROAD
CONSTITUTION BLVD
BORONDA
ROAD
INDEPENDENCE BLVD
HEMINGWAY DRIVE
LEGEND
POTENTIAL TRANSIT ROUTE
PROTENTIAL TRANSIT STOP
X MST RECCOMMENDED BUS STOPS
SECTION 5-CIRCULATION-PAGE 20
FIGURE 5.02
POTENTIAL PROJECT
TRANSIT ROUTE MAP
CENTRAL AREA SPECIFIC PLAN
NOT TO SCALE

Salinas Annexation Project
Salinas, California

Existing Biological Resources Report

Congdon's Tarplant (*Centromadia parryi ssp. congdonii*)

Revised, January 31, 2005

Biotic Resources Group

Biotic Assessments • Resource Management • Permitting

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Biotic Assessments ◆ Resource Management ◆ Permitting

Salinas Annexation Project
Salinas, California

Existing Biological Resources Report

Report Prepared for:

Cotton/Bridges/Associates
A Division of P&D Consultants
Attn: John Bridges, Senior Vice President

Report Prepared by:

Kathleen Lyons, Plant Ecologist
Biotic Resources Group

With

Bryan Mori, Wildlife Biologist
Bryan Mori Biological Consulting Services

Revised, January 31, 2005

1.0 INTRODUCTION

The Salinas Annexation Project Area (Project) area is located east of the City of Salinas in Monterey County, California. The Project area is located north of Williams Road, between Boronda Road, Old Stage Road and San Juan Grade Road (Figure 1). The Project area encompasses approximately 2,400 acres, the majority of which is currently in row crop agriculture. Some areas support greenhouses and one area, along Old Stage Road, is undeveloped grassland that is grazed by cattle and horses. The Project area is under consideration for annexation by the City of Salinas and subsequent residential and commercial development. Three specific plans, addressing the west, central and east areas, are currently being developed for the 2,400-acre Project area.

An assessment of the biological resources within the Project area was conducted between March and November 2004 by Kathleen Lyons (plant ecologist) and Bryan Mori (wildlife biologist). The focus of the assessment was to identify the existing biological resources, including sensitive species and/or habitat, within the Project area. This information will be used at a future date to evaluate the proposed Project as per CEQA requirements.

Specific tasks conducted for the Existing Biological Resources Report include:

- Characterizing the major plant communities within Project area;
- Identifying potential sensitive biotic resources, including plant and wildlife species of concern, within the proposed Project area pursuant to existing City of Salinas General Plan policies and other applicable policies/regulations of State and Federal agencies.

2.0 METHODOLOGY

The biotic resources of the 2,400-acre Project area were assessed through field observations between March and November 2004. The assessment covered all areas within the 2,400-acre Project area, except for parcels where access was not obtained; these include the Christiansen, Gabilan Knights, Calleros and Carlos parcels. To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2004) and California Department of Fish and Game's (CDFG) Rarefind 3 database (CDFG, 2004a) for the U.S.G.S. Natividad quadrangle and adjacent quadrangles: Salinas, Hollister, Prunedale, Marina, Seaside, Spreckels, Chualar, San Juan Bautista and Salinas. Previous biological reports for portions of the proposed annexation area were also reviewed. This report summarizes the findings of the biotic assessment and special status plant and animal surveys.

2.1 Botanical Resource Assessment

The major plant communities within the Project area, based on the classification system maintained by California Department of Fish and Game (CDFG, 2003a) (and amended to reflect site conditions) were identified during field visits and a review of aerial photographs. The distribution of the major plant community types within the Project area, depicted onto a topographic base map, is presented in Figures 2 and 3. Figure 2 depicts the location of special status plant species. Kathleen Lyons, plant ecologist with Biotic Resources Group, and a field assistant conducted floristic surveys of the Project area over seven days in 2004: 26 and 31 March, 14 and 30 April, 17

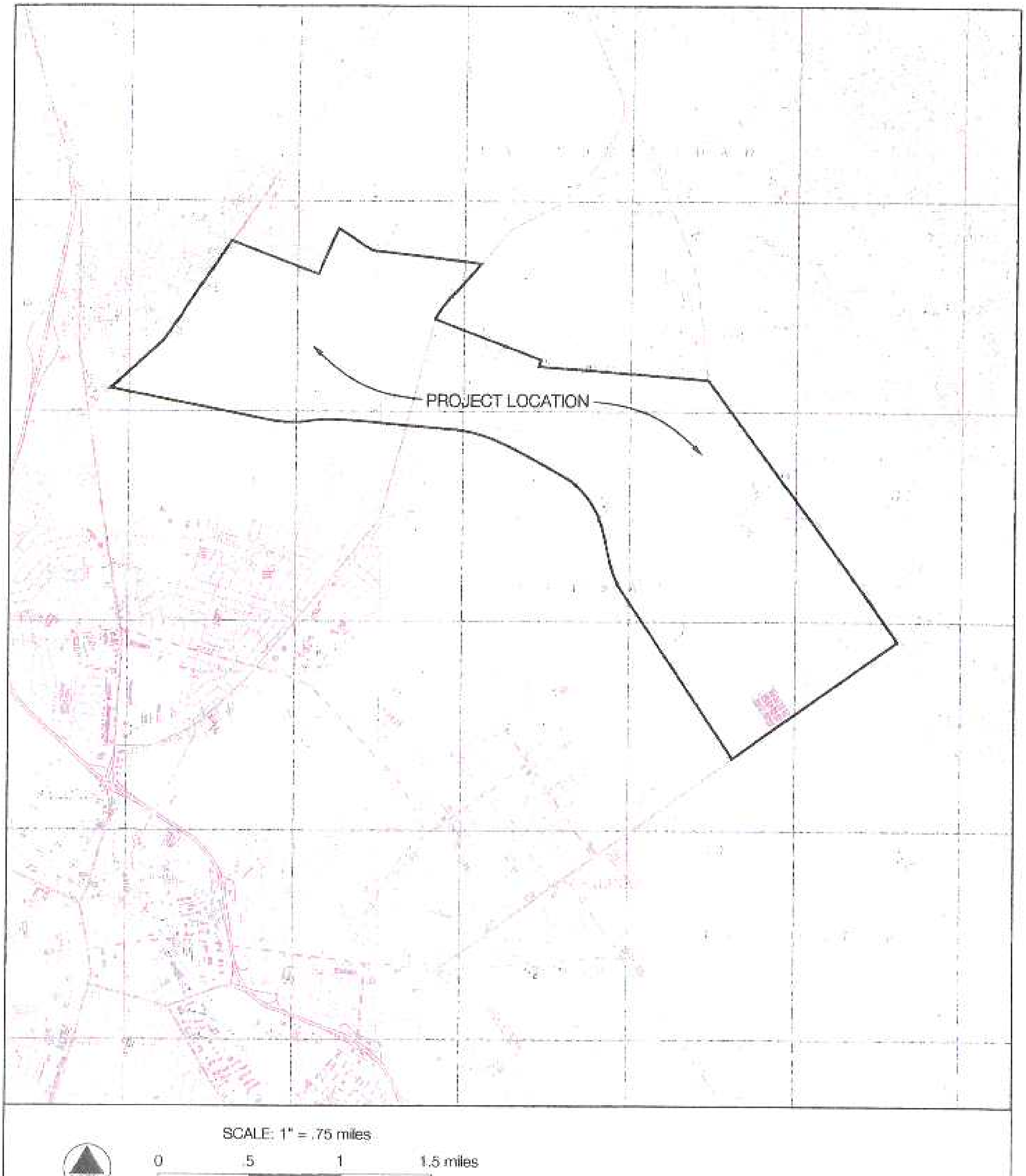
May, 17 June, and 26 July, which covers the blooming period of the special status plant species with potential to occur in the area. The field surveys consisted of walking the non-row crop portions of the Project area, recording plant species and identifying plant community types. Plant species observed during the survey are listed in Appendix A. Plant nomenclature is according to *Jepson Manual* (Hickman, 1993) and *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews, 1997).

2.2 Wildlife Resource Assessment

The wildlife habitat assessment was performed for nearly all areas of the 2,400-acre study site, except for parcels where access was not obtained (i.e., Christiansen, Gabilan Knights, Calleros and Carlos parcels). Where possible, habitat conditions on these parcels were assessed through observations made from adjacent areas. The wildlife assessment included protocol-level surveys for California tiger salamander (*Ambystoma californiense*) and burrowing owl (*Athene cunicularia*) (see below), based on habitat conditions observed during a preliminary site visit of the study area, and prior knowledge of the project region (Bryan Mori Biological Consulting Services and Biotic Resources Group, 2003). In the course of conducting the focused surveys, a habitat assessment for other special-status species also was performed. Habitats and all wildlife species observed were recorded in a field notebook. A list of wildlife species observed is presented in Appendix B. In addition to the field studies, a review of relevant literature and CNDDB records for the Natividad, Prunedale and Salinas Quads (CDFG 2004a) was performed, along with consultations with other biologists, to obtain information on wildlife occurrences in the project area. Wildlife resources are depicted on Figures 4 and 5.

2.2.1 California Tiger Salamander (CTS) Assessment and Survey. The CTS assessment was performed, following the protocol - *Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003* (USFWS and CDFG, 2003). The protocol includes a habitat assessment, spring surveys for two consecutive years, and an intervening winter drift fence study *if* the initial spring surveys result in negative findings. For the purposes of this study, surveys for CTS were limited to spring larval sampling in 2004, due to the uncertainty of the federal listing status of CTS during the course of this study.

2.2.1.1 Habitat Assessment. The existing habitat conditions of the Project area and within 1.24 miles of the site were initially evaluated during a preliminary reconnaissance of the 2,400-acre Project area on 10 February 2004. The 2,400–acre area was cursorily evaluated by driving the perimeter of the site, as well as through interpretation of the USGS Natividad quadrangle and a 1"= 500' scale aerial map. Additional information also was derived from observations during focused surveys performed in 2002-03 for Creekbridge Homes on a 600-acre site located within the current study area (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The CNDDB was accessed for information on CTS locations within 3.1 miles of the project site. Other sources for CTS records included relevant biological assessments and consultation with other biologists. A preliminary habitat assessment incorporating the above information was provided to the USFWS and CDFG as part of a notification letter-report to conduct spring aquatic sampling on the project site for this study, per protocol requirements (Bryan Mori Biological Consulting Services, letter dated 30 March 2004).



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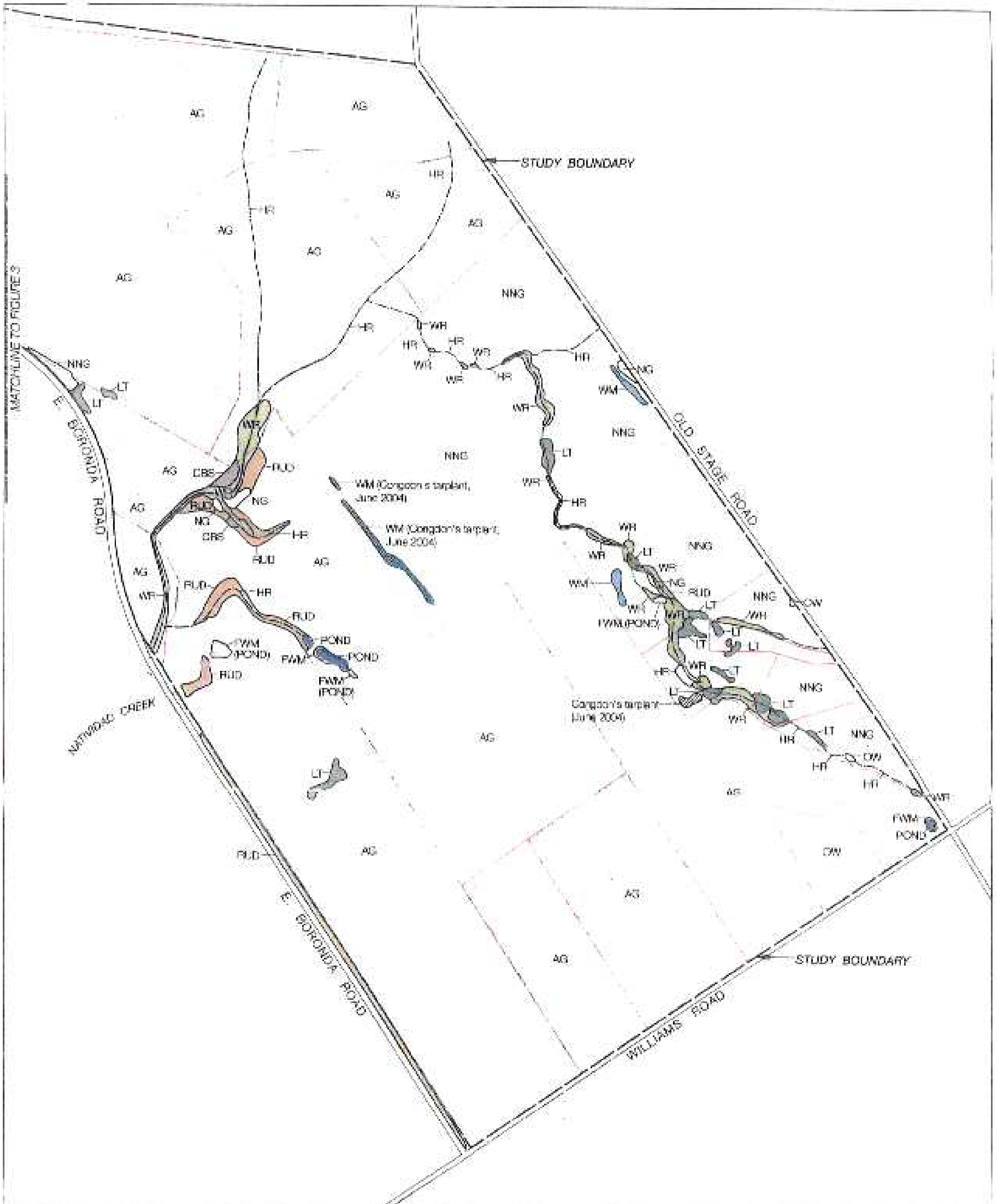
Salinas Annexation Project EIR
Location Map

Figure 1
1/05
315-02



PLANT COMMUNITY TYPES

AG	Agricultural Fields	FWM	Freshwater Marsh
NNG	Non-native Grassland	HR	Herbaceous Riparian
NG	Native Grassland	OW	Oak Woodland
CBS	Coyote Brush Scrub	LT	Landscape Trees (eucalyptus and others)
WR	Willow Riparian Woodland	WM	Wet Meadow
RUD	Ruderal Grassland	POND	Pond with Open Water

Parcel Lines within Study Area

Drainage Centerline

SPECIAL STATUS PLANT SPECIES

Congdon's Tarplant, observed June 2004

SCALE: 1" = 1,000'

0 1,000' 2,000'

NORTH

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Salinas Annexation Project EIR
Existing Plant Community Types and
Special Status Plant Species

Figure 2
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Salinas Annexation Project EIR
Existing Plant Community Types and
Special Status Plant Species

Figure 3
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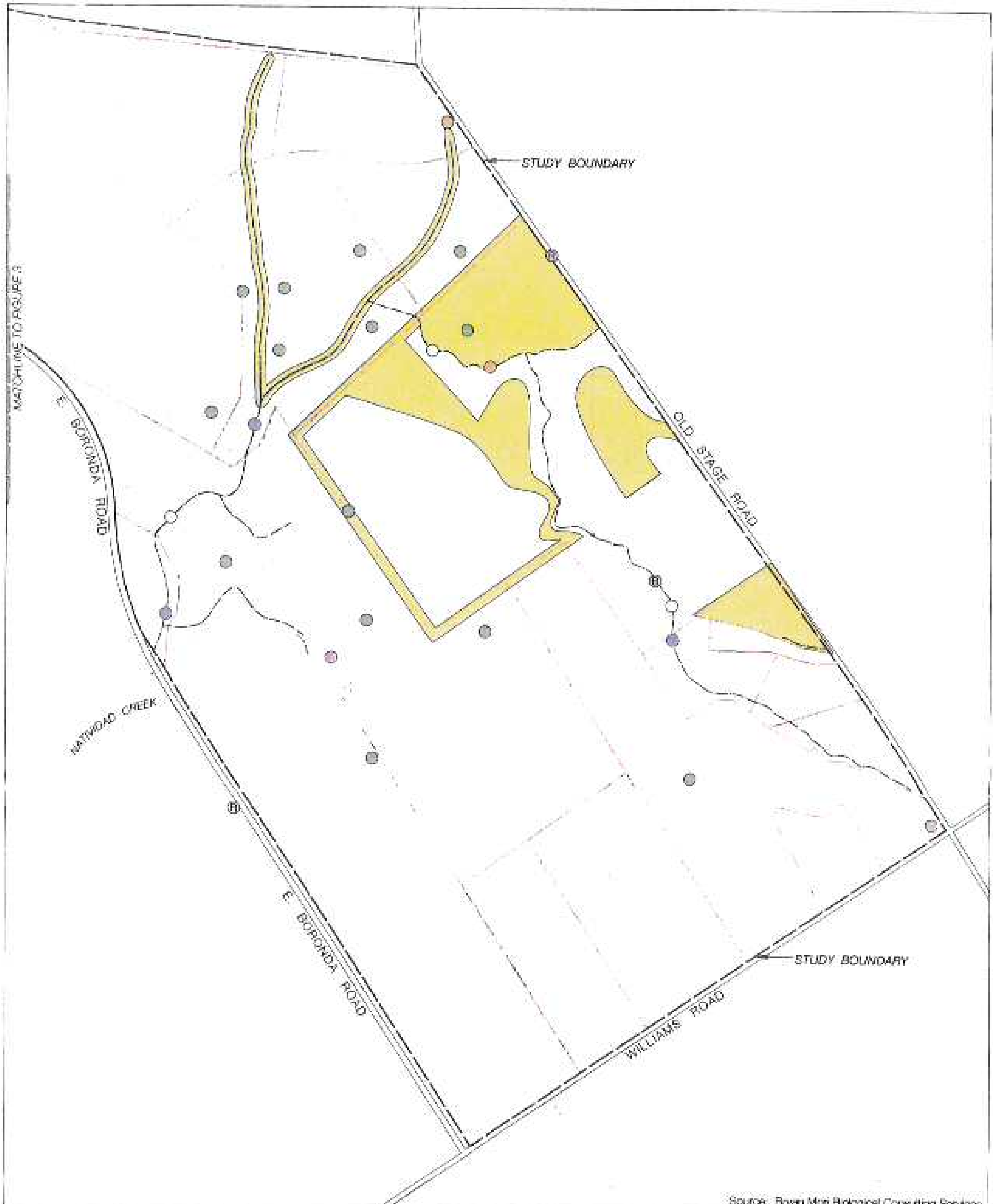

Source: Bryan Mori Biological Consulting Services

WILDLIFE OBSERVATIONS

- Areas of ground squirrel burrow concentrations
- Ⓑ California red-legged frog, breeding site
- California red-legged frog, adult
- Ⓡ Tiger salamander, road-kill, 2002
- Tiger salamander, breeding pond
- Southern Pacific pond turtle
- Ⓡ Southern Pacific pond turtle, road-kill
- Yellow warbler, singing males
- Cooper's hawk, territorial display
- California horned lark, males/pairs

SCALE: 1" = 1,000'

0 1,000' 2,000'

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Figure 4
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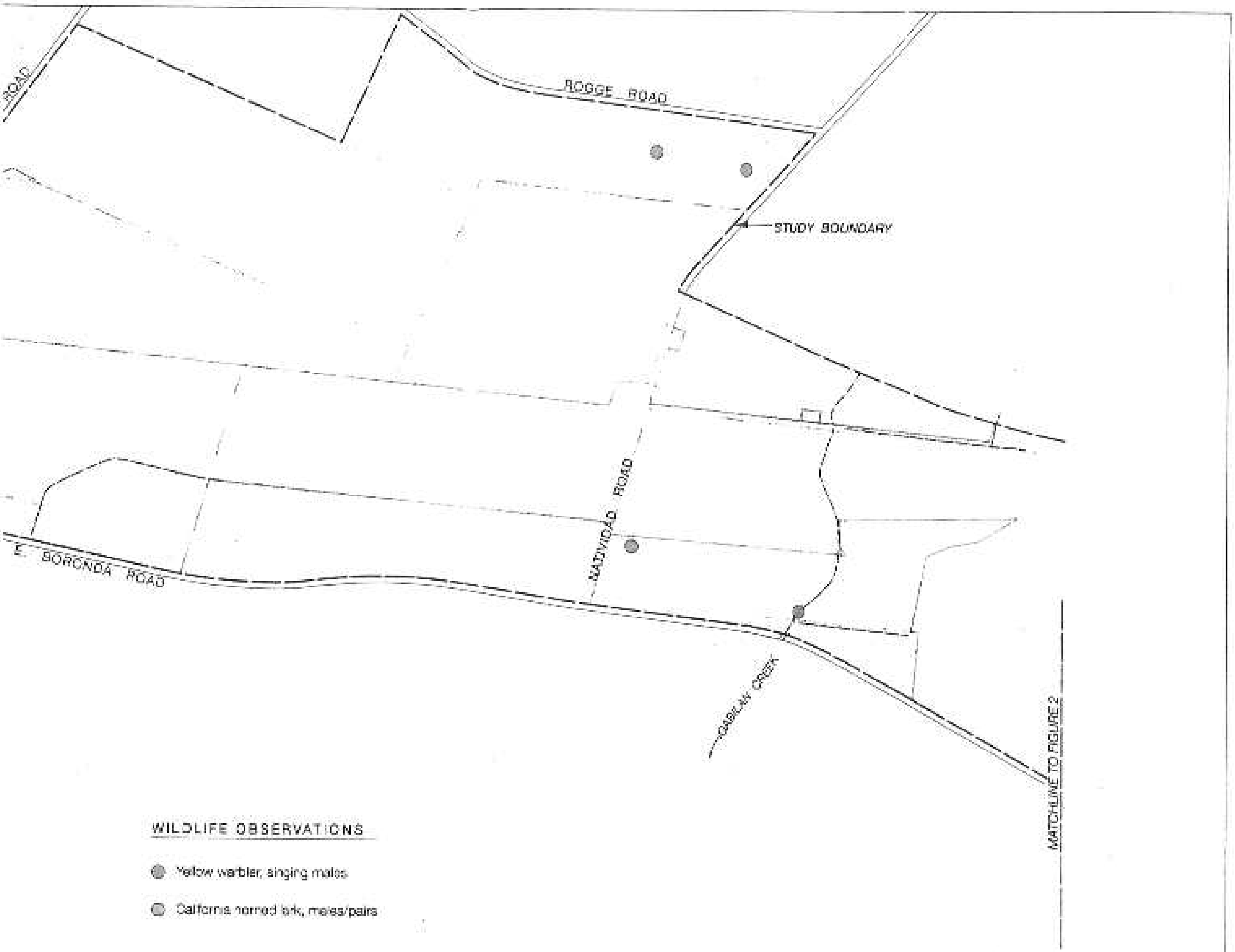

Source: Bryan Mori Biological Consulting Services

Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of
Ground Squirrel Burrow Concentrations

Figure 5
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2.2.1.2 Spring Aquatic Surveys. Initially, CTS aquatic surveys were performed on a limited portion of the study site in spring of 2002 and 2003, as part of a separate biological constraints analysis performed on the 600-acre Creekbridge Homes site, referenced above. The 2002-03 CTS study was conducted following the protocol in affect at that time - *Inland Fisheries Informational Leaflet No. 44, Survey Protocol for California Tiger Salamander (Ambystoma californiense)* (CDFG 1997). Two agricultural ponds and portions of Natividad Creek and an unnamed drainage were sampled, using a combination of dipnets, seine and minnow traps, but no larvae were observed over the two spring seasons. However, an adult, road-kill tiger salamander was observed adjacent to the site on Old Stage Road during the intervening winter upland survey (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The aquatic sites sampled in 2002-03 were not sampled during the course of this study, due to the negative results obtained and because the two ponds were removed by the property owner shortly after the 2002 spring sampling.

For this study, two agricultural ponds (Ponds 1 and 2) and portions of an unnamed tributary drainage to Natividad Creek were surveyed for CTS larvae (Figure 4). Under the current protocol, three spring larval surveys are required at each aquatic site, with one survey performed each month from March through May, however, surveys should cease when the presence of larvae is confirmed. Ponds 1 and 2 were sampled on 7 April and 19 May 2004, while the drainage was sampled on 8 and 26 April, and 12 May 2004. A March survey of the aquatic sites was not performed due to the late start of the study. Consequently, two surveys were scheduled in April to increase sampling effort. Ponds 1 and 2 were sampled twice due to the early confirmation of tiger salamander larvae; the presence of tiger salamander larvae was established at these ponds on 7 April, and an additional survey was performed on 19 May in association with Ben Fitzpatrick (UC Davis) to collect tissue samples for DNA analysis, in order to determine the taxonomic status of the tiger salamanders present. A combination of dipnets and seines were used for sampling at all aquatic sites. At each sampling site, the habitat was photographed, and general habitat characteristics observed and species collected were recorded in a field notebook. The details of the CTS surveys are presented as a separate document that was submitted to the USFWS, per protocol (Bryan Mori Biological Consulting Services 2005).

2.2.2 Burrowing Owl Assessment. The burrowing owl assessment was performed following the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (California Burrowing Owl Consortium 1993). The assessment involved reconnaissance surveys to identify potential habitat and focused nesting season surveys of potential habitat. The habitat assessment was conducted over six days from 7 April to 12 May 2004. The entire site was driven and/or traversed on foot to locate areas of ground squirrel burrow concentrations and optimal foraging habitat; burrow concentration areas are depicted on Figure 4. Surveys for nesting burrowing owls were focused on areas supporting burrow concentrations, which were mostly located in remnant grassland patches on the Andrus and First Baptist Church parcels (Figure 4). The nesting surveys were conducted on 22, 26, 28, and 29 April and 19, 20, 24 and 27 May 2004 from approximately 45 minutes before sunrise until two hours after sunrise. All bird species observed during the surveys were recorded in a field notebook.

3.0 EXISTING BIOTIC RESOURCES

The study site encompasses 2,400 acres and is located immediately adjacent to the northeastern limits of the City of Salinas, California (Figure 1). The project site is dominated by row-crop agriculture, but other habitats are present within the agricultural matrix and include remnant patches of annual grassland and oak woodlands, ruderal (weedy) fields, eucalyptus groves, riparian vegetation along Gabilan Creek, Natividad Creek and unnamed tributaries, and aquatic habitat in irrigation ponds. In addition to agriculture, other land uses within the project site include cattle grazing, horse pastures, rural residential development, a school and a church.

Eleven plant community types were documented within the 2,400-acre Project area. The distribution of vegetation by general habitat type is depicted on Figures 2 and 3, Existing Plant Community Types. These vegetation types can be further distinguished into plant associations. The plant associations, as recognized by CDFG, that most closely resemble site conditions within the Project Area are listed below in Table 1. Vegetation Types within Salinas Annexation Project Area.

Table 1. Vegetation Types within Salinas Annexation Project Area

CNDDB Code	General Plant Community Type (As mapped on Figure 2)	Plant Association
Developed/Cultivated Areas		
-	Agricultural Fields	None
Grassland		
41.150.00*	Native Grassland*	Purple Needlegrass *(Nassella pulchra)*
42.026.00	Non-native Grassland	Ripgut Brome – Soft Chess *(Bromus diandrus – Bromus hordeaceus)*
45.300.00	Wet Meadow	Meadow Barley – Rabbitsfoot Grass – Spikerush *(Hordeum branchyantherum- Polypogon monspeliensis – Eleocharis macrostacyha)*
-	Ruderal	Poison Hemlock – Wild Radish *(Conium maculatum – Raphanus sativa)*
Scrub		
32.060.09	Coyote Brush Scrub	Coyote Brush/Annual Grasses *(Baccharis pilularis – Bromus* spp.)
Riparian and Ponds		
61.201.00*	Willow Riparian*	Arroyo Willow – Shining Willow *(Salix lasiolepis – Salix lucida)*
61.000.00	Herbaceous Riparian	Watercress- curly dock -nutgrass *(Rorrippa nasturtium-aquaticum - Rumex crispus- Cyperus eragrostis)*,
52.101.00*	Freshwater Marsh*	California Bulrush - Water Smartweed *(Scirpus californicus - Polygonum persicaria)*
Woodland		
71.060.09	Oak Woodland	Coast Live Oak/Grass *(Quercus agrifolia/ Bromus spp.)*
-	Landscape Tree Groves	Eucalyptus – Monterey Pine *(Eucalyptus* sp. – *Pinus radiata)*

* Plant associations considered rare and worthy of consideration by CNDDB, May 2002

The study area is expected to support a wide variety of wildlife, including various special-status species, due to the combination of the following factors: 1) the large size of the study area (2,400 acres); 2) the presence of remnant patches of habitat with high wildlife value on the study site; 3) the general lack of permanent development; and 4) the continuity/close proximity of the study site to relatively undeveloped landscapes east of Old Stage Road. The following text provides a general discussion of the principal habitats in the study area, their botanical resources and their value to native wildlife.

3.1 Agricultural Fields

The majority of the 2,400-acre Project area is in intensive row-crop production. During the course of the study, agricultural activities were occurring, with periodic changes in crops and tilled land area. Figures 2 and 3 depict the areas in active agriculture (i.e., row-crops, tilled fields or greenhouses) as of July 2004. Typical crops include strawberries and lettuce.

3.1.1 Wildlife Resources of Agricultural Fields

Wildlife use of agricultural fields is largely limited to opportunistic foraging by blackbirds, ground squirrels and hares, due to frequent disturbances from farming activities. However, the habitat values will vary depending on the frequency of disturbances and crop type. For example, fallow fields may temporarily support a level of use similar to that of grasslands, when allowed to produce ruderal vegetation, and perennial crops, such as strawberry fields, may even support nesting by killdeer (*Charadrius vociferus*) and horned larks, which prefer the bare areas between the rows.

3.2 Grasslands

Four grassland types were observed within the 2,400-acre Project area: native grassland, non-native grassland, wet meadow and ruderal grassland. As depicted on Figure 2, non-native grassland, a grassland type dominated by annual, non-native plant species, is the dominant grassland type, with the largest area occurring southwest of a portion of Old Stage Road. Patches of native grassland, a grassland type dominated by native plant species, was found in scattered locations in this area, as depicted on Figure 2. The Project area also supports depressions that are considered wet meadow. Ruderal (weedy) grassland areas were found in previously disturbed areas, primarily alongside the various drainage channels within the Project area.

3.2.1 Non-native Grassland. This grassland type is characterized by the dominance of annual, non-native grasses. Within the Project area, this grassland type is most prevalent southwest of Old Stage Road on the Wayland and Andruss properties (Figure 2). The grassland is dominated by ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rattail fescue (*Vulpia myuros*), and foxtail barley (*Hordeum leporinum*). Other grasses include Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena* sp.), and quaking grass (*Briza minor*). Non-native forbs are prevalent in the grassland, including windmill pink (*Silene gallica*), bindweed (*Convolvulus arvensis*), bur clover (*Medicago polymorpha*), white-stemmed filaree (*Erodium moshatum*), sheep sorrel (*Rumex acetosella*), rough cat's ear (*Hypochoeris radicata*), hop clover (*Trifolium campestre*), rose clover (*Trifolium hirtum*), red-stemmed filaree (*Erodium cicutarium*), long-beaked filaree (*Erodium botrys*), shepard's purse (*Capsella bursa-pastoris*), scarlet pimpernel (*Anagallis arvensis*), bristly ox-tongue (*Picris echioides*), and smooth cat's ear (*Hypochoeris glabra*). Native forbs observed within the grassland include California poppy (*Eshscholzia californica*), red maids (*Calandrinia ciliata*), Lindley's annual lupine (*Lupinus bicolor*), pink owl's clover (*Castilleja exserta*), green fiddleneck (*Amsinkia vernicosa*), hill morning glory (*Calystegia subcaulis*), coast tarweed

(*Hemizonia corymbosa)*, slender tarweed (*Madia gracilis)*, western rush (*Juncus occidentalis)*, and common fiddleneck (*Amsinkia menziesii var. intermedia)*. The character of the annual grassland is depicted on Figure 6.

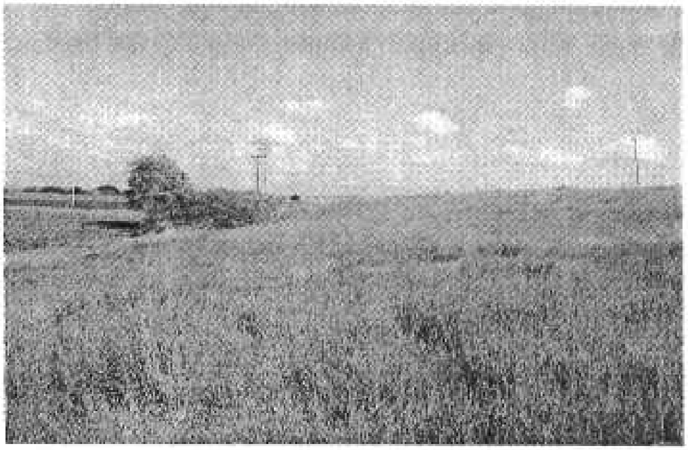

Figure 6. Annual Grassland within Project Area, April 2004.

Individuals of Congdon's tarplant (*Centromadia parryi ssp. congdonii)*, a rare plant species, were observed within the grasslands of the Project area. As depicted on Figure 2, three patches of the tarplant were documented from the project site. One of the patches is located in a previously disturbed upland area. At this location, the tarplant was observed growing amid wild mustard (*Brassica* sp.), and non-native grasses. Approximately 500 individuals of Congdon's tarplant were observed in this area (see Section 4.2 for more information on this species).

3.2.2 Native Grassland. This plant community type is characterized by the dominance by native grasses and forbs. Within the project area, areas of this vegetation type are limited to two small remnant patches on sloping, non-agricultural lands. One patch is located adjacent to Old Stage Road; the second patch is on a hillside south of Natividad Creek (Figure 2). The native grassland areas are noticeable by the growth purple needlegrass (*Nassella pulchra)*, blue wild rye (*Elymus glaucus)*, narrow-leaved mule ears (*Wyethia angustifolia)*, golden brodiaea (*Triteleia ixioides)*, annual lupine (*Lupinus nanus)*, blue-eyed grass (*Sisyrinchium bellum)*, soap plant (*Chlorogalum pomeridianum)*, California brome (*Bromus carinatus)*, and sun cups (*Camissonia ovata)*. The grassland near Natividad Creek also supports a dense patch of California oatgrass (*Danthonia californica)*. The character of the two native grassland areas is depicted in Figures 7 and 8.

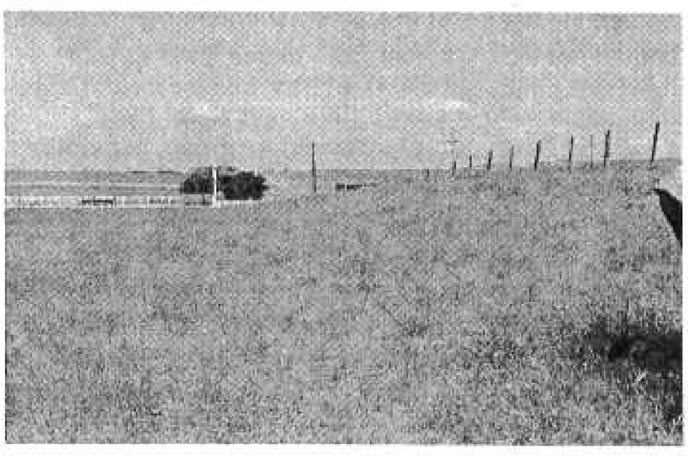

Figure 7. View of native grassland west of Old Stage Road, April 2004, showing growth of purple needlegrass.

Figure 8. Native grassland area on slope south of Natividad Creek, April 2004, with mule's ears, California oatgrass, purple needlegrass and blue wild rye.

3.2.3 Wet Meadow. The Project area supports scattered wet meadow areas. The wet meadows inhabit depressions and small swales within the grassland where winter rainfall and surface runoff collects. The wet meadow areas were observed to support plants tolerant of seasonally high soil moisture, including rabbitsfoot grass, meadow barley *(Hordeum branchyantherum)*, heliotrope *(Heliotropium curassavicum)*, curly dock, Italian ryegrass, bitter dock *(Rumex obtusifolius)* and western rush. Spikerush *(Eleocharis macrostatya)* was observed in a wetland swale west of Old Stage Road. The character of wet meadow grassland is depicted in Figure 9.

Individuals of Congdon's tarplant, a rare plant species, were observed within slight depressions within the grasslands of the Project area. As depicted on Figure 2, three patches of the tarplant were documented from the Project area. Two of the patches were observed in slight depressions in otherwise non-native grassland. The depression topography, coupled by observations of previously saturated soils, suggest these areas meet the definition of wet meadow areas. In addition to individuals of Congdon's tarplant, the areas were dominated by Italian ryegrass, curly dock, and western rush. Other plant species include foxtail barley and quaking grass. Approximately 1,500 individuals of Congdon's tarplant were observed in these two areas. (See Section 4.2 for more information on this species).

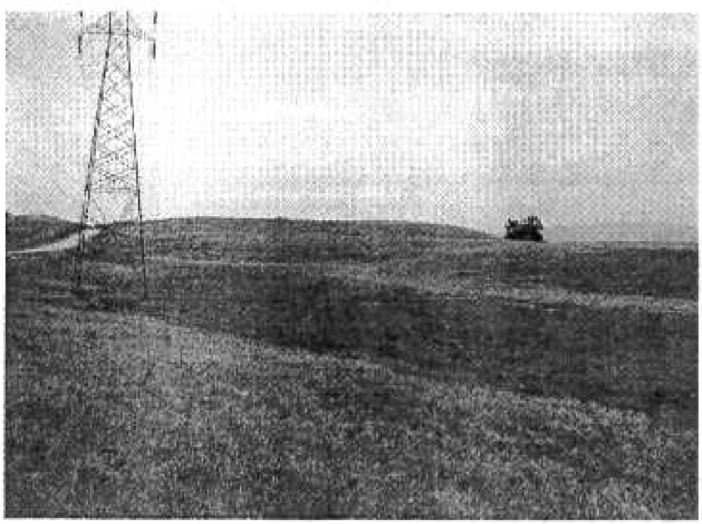

Figure 9. View of wet meadow grassland within swale west of Old Stage Road, April 2004.

3.2.4 Ruderal Grassland. The Project area supports many areas that are periodically disturbed by adjacent agricultural activities, such as clearing, mowing or placement of farm equipment. Herbaceous and semi-woody plants typical of disturbed conditions dominate these areas, such as strips of land between agricultural roads and riparian woodland along Gabilan and Natividad Creeks. These "ruderal" areas are comprised of non-native plant species such as poison hemlock (*Conium maculatum)*, sow thistle (*Sonchus asper)*, fennel (*Foeniculum vulgare)*, wild radish (*Raphanus sativa)*, wild mustard (*Brassica* sp.), bull mallow (*Malva neglecta)*, knotweed (*Polygonum aviculare)*, English plantain (*Plantago lanceolata)*, Italian thistle (*Carduus pycnocephala)*, peppergrass (*Lepidium densiflorum)*, yellow sweet clover (*Melilotus indica)*, and bur clover (*Medicago polymorpha)*. The character of ruderal grassland is depicted in Figure 10.

3.2.5 Wildlife Resources of Grasslands. Noteworthy patches of grassland habitat are largely confined to the Andrus and Wayland parcels along the eastern edge of the study area. In general, since the 1800s, grasslands in North America have been profoundly altered due to agricultural activities and urban development, with the conversion of grasslands for urban and agricultural uses proportionately exceeding that of any other habitat type (Vickery *et al* 1999; CDFG 2003). As a result, many grassland ecosystems are now considered at risk; for example, only 10% of the Central Valley's grasslands remain from the pre-European settlement period (CDFG 2003). Because of the alarming rate of conversion, many grassland–dependent wildlife species have experienced population declines (CDFG 2003). In fact, grasslands birds have declined more steeply than any other wildlife habitat guild (Vickery *et al* 1999; CDFG 2003).

Grasslands are used by a wide variety of wildlife species; the grasses and herbs provide habitat for rodents, rabbits and hares, and ground foraging and nesting birds. In turn, these species form the prey base for large predators. However, the grassland habitat values in the study area are likely moderated due to the fragmented nature of the remaining habitat patches and management activities, such as disking. Representative species include ornate shrew (*Sorex ornatus*), pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalottis*), California meadow vole (*Peromyscus maniculatus*), California ground squirrel (*Spermophilus beechyii*), black-tailed hare (*Lepus californicus*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), horned lark (*Eremophila actia alpestris*), western meadowlark (*Sturnella neglecta*), savanna sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*) and gopher snake (*Pituophis catenifer*).

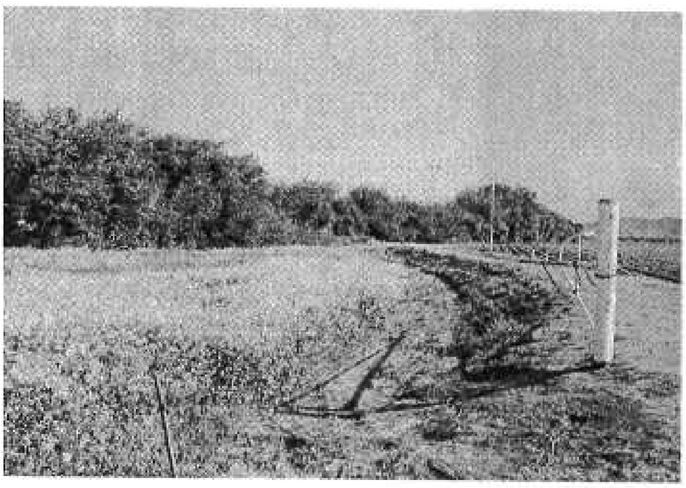

Figure 10. View of ruderal grassland plant community between agricultural road and Gabilan Creek, April 2004. This area is dominated by wild radish and poison hemlock.

3.3 Coyote Brush Scrub

The Project area supports two patches of coyote brush scrub. This scrub type occurs on slopes north and south of Natividad Creek, as depicted on Figure 2. The dominant shrub species is coyote brush (*Baccharis pilularis*). Herbaceous plant species are common between the shrubs, many of which are similar to that observed in the adjacent non-native and ruderal grasslands. Common herbaceous species in the scrub include mugwort (*Artemisia douglasiana*), ripgut brome, poison hemlock, wild mustard, poison oak (*Toxicodendron diversilobum*), and bristly ox-tongue.

3.3.1 Wildlife Resources of Coyote Brush Scrub. Due to the limited distribution of coyote brush scrub in the Project area, this plant community functions to enhance wildlife use of the larger grassland matrix by providing supplemental cover, nest and perch sites for grassland species, rather than support species typically associated with dense, broad stands of scrub. Many of the wildlife species discussed in the Grassland section, above, especially birds, are expected to utilize this resource.

3.4 Riparian Areas and Irrigation Ponds

The Project area supports reaches of Gabilan and Natividad Creeks, two perennial waterways. In addition, the project area contains several unnamed perennial and intermittent tributaries to these two creeks. The main stem and one tributary of Natividad Creek support riparian woodland. The other tributaries support herbaceous riparian vegetation, as depicted on Figure 2. Figure 3 depicts the distribution of riparian woodland along the mainstem of Gabilan Creek, which supports a willow-dominated riparian woodland. The Project area also supports several agricultural ponds. Most are off-channel irrigation ponds, however there are three in-channel ponds along the two tributaries to Natividad Creek.

3.4.1 Riparian Woodland. The mainstem of Natividad and Gabilan Creeks, as well as the easternmost tributary to Natividad Creek, are dominated by willow riparian vegetation. Typical vegetation includes arroyo willow (*Salix lasiolepis.*), shining willow (*Salix lucida)*, and blue elderberry (*Sambucus mexicana)*. There are scattered occurrences of western sycamore (*Platanus racemosa)* and coast live oak (*Quercus agrifolia)* along these drainages as well. The understory vegetation is dense with California blackberry (*Rubus ursinus)*, poison oak, and stinging nettle (*Urtica dioica)*. Adjacent to the low-flow channel of the creek are areas dominated by freshwater marsh vegetation, as discussed in Section 3.4.3.

3.4.2 Herbaceous Riparian. The Project area supports several drainage channels, many of which traverse through agricultural fields. As depicted in Figure 11, these drainages have been modified by agricultural activities (i.e., periodic clearing and/or herbicide application). Some of the drainage channels, as depicted in Figure 12 support vegetation, however, it is limited to herbaceous species within the bottom and lower edges of the channel. Tributaries to Natividad Creek were observed to support patches of willow (*Salix* sp.), however, most channels were limited to herbaceous species of watercress (*Rorrippa nasturtium-aquaticum)*, nutgrass (*Cyperus eragrostis)*, curly dock (*Rumex crispus)*, spikerush (*Eleocharis* sp.), cocklebur (*Xanthium strumarium)*, Italian ryegrass (*Lolium multiflorum)*, Bermuda grass (*Cynodon dactylon)*, rabbitsfoot grass (*Polypogon monspeliensis)* and scattered patches of California bulrush (*Scirpus californicus)* and cattail (*Typha sp.)*.

Figure 11. View of westernmost tributary to Natividad Creek, showing minimal vegetation, April 2004.

Figure 12. View of herbaceous riparian along easternmost tributary to Natividad Creek, June 2004.

3.4.2 Freshwater Marsh. Areas of freshwater marsh occur within both Gabilan and Natividad Creeks. Plant species typical of wet conditions were observed growing on sediment deposits within the creeks. Typical plant species include water smartweed (*Polygonum persicaria)*, rabbitsfoot grass, willow herb (*Epilobium ciliatum)*, watercress, curly dock, small-flowered buttercup (*Ranunculus parviflorus)*, willow dock (*Rumex salicifolius)*, swamp knotweed (*Polygonum amphibium var. emersum)*, water parsley (*Oenanthe sarmentosa)*, red-rooted cyperus (*Cyperus erthrorhizos)*, nutgrass, and small patches of cattail. The in-stream habitat type is depicted in Figure 13. Freshwater marsh vegetation also occurs along the margins of some irrigation ponds within the Project area. California bulrush was observed along the edge of several ponds. Associated species included lady's thumb (*Polygonum persicaria)*, lamb's quarter (*Chenopodium album)*, great water speedwell (*Veronica anagallis-aquatica)*, nutgrass, curly dock, willow herb, and peppergrass.

Figure 13. View of freshwater marsh within the Gabilan Creek, April 2004.

3.4.3 Wildlife Resources of Riparian Habitat . In general, wildlife values of riparian habitats are considered among the highest of all plant communities in the west, supporting a greater abundance and diversity of wildlife than any other plant community (Thomas *et al* 1979). In California, over 225 species of amphibians, reptiles, birds and mammals occur in riparian habitats (California Partners in Flight 2000). For birds, riparian habitats may also be the most important type in California, especially for nesting Neotropical migrants and as stopover sites for migrants to replenish fat reserves (Moore and Simons 1989; California Partners in Flight 2000). Healthy riparian systems provide surface water and a variety of niches for wildlife, due to the abundance of vegetation and complex habitat structure. Additionally, deciduous riparian woodlands harbor an abundance of insect prey for avian consumption, since the leaves lack compounds to protect against herbivorous insects (Kreuper 1992). The importance of riparian habitat is underscored by its limited statewide distribution, making up less than 0.5% of the total land area (California Partners in Flight 2000). For these reasons, riparian habitats are protected resources of the State.

Riparian habitat values in the study are considered low to moderate due to agriculture-related disturbances. Areas of low habitat value include the upper-half of Natividad Creek and the east tributary to Natividad Creek, where the channels have been modified into v-shaped agricultural drainages ditches and vegetation on the banks is regularly managed. Areas of moderate habitat value are typified by willow woodlands largely confined to the immediate banks along Gabilan Creek, lower Natividad Creek (below the confluence), and an unnamed tributary to Natividad Creek. Along Gabilan Creek, the riparian corridor is continuous, dense and relatively broad with mature willows. Natividad Creek supports riparian habitat only along the lower reach, just below the confluence with an unnamed tributary, where the willow riparian is discontinuous and narrow, except for a small, but broad patch at the confluence. In both cases, row crop agriculture borders the creeks. Willow riparian is also present along an unnamed drainage paralleling Old Stage Road, where it occurs in patchy, discontinuous stands with occasional eucalyptus groves in the overstory. Land uses bordering this drainage include a mix of cattle grazing, rural residential development and row crop agriculture.

Representative species of riparian habitats in the study area include Pacific treefrog (*Hyla regilla*), California red-legged frog (*Rana aurora draytonii*), bullfrog (*Rana catesbeiana*), western toad (*Bufo boreas*), southern Pacific pond turtle (*Actinemys marmorata pallida*), Allen's hummingbird (*Selasphorus sasin*), Pacific-slope flycatcher (*Empidonax difficilis*), Swainson's thrush (*Catharus ustulatus*), Wilson's warbler (*Wilsonia pusilla*), black-headed grosbeak (*Pheucticus melanocephalus*), song sparrow (*Melospiza melodia*) and muskrat (*Procyon lotor*).

3.4.5 Wildlife Resources of Irrigation Ponds. The aerial base map shows eleven agricultural irrigation ponds widely-distributed throughout the study site. However, of these, only two (Ponds 1 and 2) supported aquatic habitat during this study (Figure 4). Of the remaining ponds, two were dry and seven were no longer present (i.e. removed).

Pond 1 is located at the corner of Old Stage Road and Williams Road and is approximately 140' long and 75' wide. The pond is bermed above grade and water levels appear to be maintained through ground water pumping. Pond 2 is located near East Boronda Road, approximately 6,000' northwest of Pond 1. Pond 2 is located within an intermittent drainage and is approximately 375' long and 80' wide at full capacity. The pond is created by an artificial berm and water levels are maintained by agricultural runoff and pumping during the dry season.

Irrigation ponds can be significant sources of surface water for wildlife, supplementing naturally occurring water sources and distributing surface water over a broader area, perhaps even to those areas which would not support standing water otherwise. Irrigation ponds can be focal points of wildlife use as many species require water for drinking, bathing, reproduction and cover. Ponds are especially important for aquatic species that use them for breeding. Typical species inhabiting ponds include bullfrog, Pacific treefrog, western toad, southern Pacific pond turtle , Santa Cruz garter snake (*Thamnophis atratus*), great egret (*Ardea alba*) and mallard (*Anas platyrhynchos*). Habitat values will vary between ponds, depending on their hydrologic regime, extent of vegetation and presence of non-native predatory fishes.

3.5 Woodlands and Tree Groves

3.5.1 Oak Woodland. The Project area supports an oak grove near the intersection of Williams and Old Sage Road. The grove is comprised of large-sized, mature coast live oak trees. The understory is comprised of plant species typical of ruderal (weedy) grassland. Plant species observed within the understory include foxtail barley, ripgut brome, bur clover, common fiddleneck, bull mallow, wild oat, wild mustard, horehound (*Marrubium vulgare)*, wild radish, willow herb, poison hemlock, milk thistle (*Silybum marianum)*, prickly sow thistle, and shepard's purse. The woodland also supports scattered blue elderberry shrubs.

3.5.2 Landscape Tree Groves. There are several groves of planted landscape/residential trees located within the Project area. The majority of the trees are eucalyptus (*Eucalyptus sp.)*, Monterey pine (*Pinus radiata)*, Monterey cypress (*Cupressus macrocarpa)* and walnut (*Juglans hindsii).*

3.5.3 Wildlife Resources of Oak Woodlands. In general, oak woodlands are considered critical habitats for the conservation of many bird and mammal species (U.S. Forest Service 1999; Block *et al* 1990). Over 300 vertebrate species are known to use oak trees. Noteworthy features of oak habitats include acorns, snags and cavity-bearing trees. As a seasonal food, acorns play an important role in the survival of many species of wildlife in fall, and since a mature oak can produce thousands of acorns during a favorable year (Tietje 1990; Giusti and Tinnin 1993). Mature oak trees frequently bear snag limbs and natural cavities as a result of limb scars. Snags are important resources for such uses as nesting, roosting, foraging, caching and wintering (Davis 1983), but especially critical to primary cavity-nesters such as woodpeckers, which prefer dead trees and limbs for excavation of roost and nest sites (Thomas *et al* 1979). Snags and branches bearing natural cavities also are critical for secondary cavity-nesting birds (e.g., chickadees, titmice, nuthatches, etc.), and as den or roost sites for small mammals. Due to the inherent high wildlife value of oaks, oak habitats are protected resources of the State.

Oak woodland habitat is largely limited to an approximately 11-acre patch located near the junction of Old Stage Road and Williams Road. This stand mostly consists of large, mature live oaks, with multiple cavities and snag limbs. However, the habitat values of the oak woodland are diminished due to the fragmented and isolated nature of the stand, understory management (i.e., disking), and ground squirrel control (e.g., bait stations).

Representative cavity-nesting wildlife of the oak woodland on the site include Nuttall's woodpecker (*Picoides nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), oak titmouse (*Baeopholus inornatus*), chestnut-backed chickadee (*Poecile rufescens*), violet-green swallow (*Tachycineta thalassina*) house wren (*Troglodytes aedon*) and western bluebird (*Sialia mexicana*). Acorns likely constitute a significant portion of the diet of California quail (*Callipepla californica*), western scrub-jay (*Aphelocoma californica*) and black-tailed deer (*Odocoileus hemionus columbarius*). Additionally, snags and cavity-bearing oaks may provide cover, roost and/or nest sites for species such as raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), dusky-footed woodrat (*Neotoma fuscipes*) and pallid bat (*Antrozous pallidus*).

3.5.4 Wildlife Resources Of Landscape Tree Groves. Where eucalyptus trees are present, they supplement existing habitats with roosting and nesting sites for a variety of birds. This resource is especially noteworthy in areas lacking trees, such as within the study area. Eucalyptus groves are scattered within the unnamed drainage paralleling Old Stage Road and occur elsewhere in the vicinity of ranch dwellings. Due to their tall heights and dense crown cover, eucalyptus trees offer excellent nesting, roosting and perching sites for raptors such as turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*). A variety of woodland songbirds, including pacific-slope flycatcher (*Empidonax difficilis*), Cassin's kingbird (*Tyrannus vociferans*), western kingbird (*T. verticalis*), chestnut-backed chickadee (*Poecile rufescens*), Bullock's oriole (*Icterus bullockii*), Brewer's blackbird (*Euphagus cyanocephalus*), purple finch (*Carpodacus purpureus*), house finch (*C. mexicana*) and Lawrence's goldfinch(*Carduelis lawrencei*) nest in eucalyptus groves. Flowering trees also provide important nectar sources for Anna's hummingbird (*Calypte anna*) and Allen's hummingbird (*Selasphorus sasin*). Bird species abundance and diversity is probably highest during fall and in winter, when migrants and wintering birds, such as cedar waxwings (*Bombycilla cedrorum*), yellow-rumped warbler (*Dendroica coronata*), Townsend's warbler (*D. townsendii*) and orange-crowned warbler (*Vermivora celata*) supplement the resident population.

4.0 SENSITIVE BIOTIC RESOURCES

4.1 Sensitive Habitats

Sensitive habitats are defined by local, state, or federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Within the Project area, the riparian, wet meadow, freshwater marsh and native grassland habitats are considered rare by CNDDB (CNDDB, May 2002). Although a formal delineation of wetlands was not conducted as part of this study, the herbaceous riparian, freshwater marsh and wet meadow areas may meet the definition of wetlands under U.S. Army Corps of Engineers criteria. This is due to the observed dominance of wetland plant species and the corresponding topography that suggests sufficient seasonal ponding and/or surface soil saturation during the growing season to provide hydric conditions.

4.2 Special-Status Plant Species

Plant species of concern include those listed by either the federal or state resource agencies as well as those identified as rare by CNPS. A list of such plant species with the potential to occur in the Project area is presented on Table 2, List of Special-Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area. Of the 26 plant species evaluated for presence within the Project area, only one species, Congdon's tarplant, was observed. The Project area does, however, provide suitable habitat for three other species, yet none of these species were observed during surveys in spring or summer 2004, as listed on Table 2.

4.2.1 Congdon's Tarplant (*Centromadia parryi ssp. congdonii*). This species is recognized as rare by the California Native Plant Society (List 1B). The species is also considered rare by the California Department of Fish and Game (CDFG), however the species is not currently listed as endangered or threatened under the California Endangered Species Act. The species is considered a Species of Concern by the U.S. Fish and Wildlife Service, however it is not currently listed as endangered or threatened under the Endangered Species Act.

This species is known from the greater Monterey Bay region, with several occurrences recorded from the Salinas area. The occurrence of this species in the Project area has been previously recorded in the CNDDB as occurrence #7. In 1998, the species was reported to inhabit 586 acres of annual grassland east of Old Stage Road, supporting approximately 214,000 plants (CNDDB, 2004). Occurrences in the close vicinity of the Project area include a colony west of the Project area along Natividad Creek (occurrence #58, 88 plants in 2002), occurrence #36, located along Old Stage Road north of Natividad Road, and occurrence #37 along Old Stage Road, southeast of Zabala Road. Congdon's tarplant grows in annual grasslands, typically in areas with high seasonal moisture. The blooming period is typically from June to October.

In 2004, the Salinas Annexation Project area supported approximately 2.1 acres of occupied Congdon's tarplant in three patches; this distribution is depicted on Figure 2. This area of occupied habitat was based on the presence of aboveground plants. Approximately 2,000 individuals were observed in these three patches, based on field observations in June 2004. In 1998, the species was reported from 586 acres, supporting approximately 214,000 plants (CNDDB, 2004). As Congdon's tarplant is an annual species its population can vary from year to year, depending upon weather conditions (e.g., rainfall, temperature) as well as human and natural disturbances within the species habitat. In 2004, the population supported significantly fewer plants than observed in 1998. Seeds are expected to persist in the soil seedbank and may germinate under more favorable conditions. The species and its habitat, as observed in 2004, is depicted in Figure 14. The distribution of the species, based upon the observation of aboveground plants, is depicted on Figure 2.

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
Hickman's Onion (*Allium hickmanii*)	List 1B	None	None	Closed cone coniferous forests, chaparral, coastal bluff scrub	Recorded from south of Marina (Ft. Ord) Project area does not provide suitable habitat, species was not observed in spring 2004.
Monterey manzanita (*Arctostaphylos montereyensis*)	List 1B	None	None	Chaparral, coastal scrub	Recorded from Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Hooker's manzanita (*Arctostaphylos hookeri ssp. hookeri*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub	Recorded from Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Dune manzanita (*Arctostaphylos montereyensis*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Ft. Ord, near Marina, Toro Regional Park Project area does not provide suitable habitat, species was not observed in spring 2004.
Pajaro manzanita (*Arctostaphylos pajaroensis*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Prunedale Area Project area does not provide suitable habitat, species was not observed in spring 2004.
Alkali milk-vetch (*Astragalus tener var. tener*)	List 1B	None	None	Alkali wetlands	Historic occurrence 1 mile northeast of Salinas; other occurrences from Hollister (San Benito County); herbarium collections from 1889 Suitable habitat potentially present; however species not observed in spring 2004.
San Joaquin saltbush (*Atriplex joaquiniana*)	List 1B	None	None	Coastal scrub; riparian scrub	Recorded from Hollister area Project area does not provide suitable habitat, species was not observed in spring 2004.
Congdon's tarplant (*Centromadia parryi ssp. congdonii*)	List 1B	None	None	Seasonal wetlands in annual grasslands	Recorded from Project area, east of Old Stage Road and other areas in greater project vicinity. Observed within Project area in early summer 2004; approximately 2,000 individuals.
Monterey spineflower (*Chorizanthe pungens var. pungens*)	List 1B	None	Threatened	Coastal dunes, chaparral, coastal scrub (in loose sandy soils)	Recorded from Ft. Ord, Marina and Seaside Areas Project area does not provide suitable habitat, species was not observed in spring 2004.
Robust spineflower (*Chorizanthe robusta var. robusta*)	List 1B	None	Endangered	Cismontane woodland, coastal dunes, coastal scrub	Recorded from Salinas Valley, west of Spreckels, Marina and Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
					spring 2004.
Jolon clarkia *(Clarkia jolonensis)*	List 1B	None	None	Cismontane woodland, coastal dunes, coastal scrub	Historic records (1912 and 1928) from Del Monte, Seaside area Project area does not provide suitable habitat, species was not observed in spring 2004.
Seaside bird's beak *(Cordylanthus rigidus littoralis)*	List 1B	Endangered	None	Closed cone coniferous forest, chaparral, cismontane woodland, coastal scrub/dunes	Recorded from sand hills of Seaside at Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Hutchinson's larkspur *(Delphinium hutchinsoniae)*	List 1B	None	None	Cismontane woodland, coastal scrub	Recorded from Spreckels area Project area does not provide suitable habitat, species was not observed in spring 2004.
Eastwoods ericameria *(Ericameria fasciculate)*	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Seaside, Ft. Ord, Marina and Carmel Valley areas Project area does not provide suitable habitat, species was not observed in spring 2004.
Coast wallflower *(Erysimum ammophilum)*	List 1B	None	Species of Concern	Maritime chaparral, coastal dunes, coastal scrub	Recorded from south of Ft. Ord, south of Marina along Highway 1 and E of Reservation Road, Marina State Beach Project area does not provide suitable habitat, species was not observed in spring 2004.
Yadon's wallflower *(Erysimum menziesii ssp. yadonii)*	List 1B	Endangered	Endangered	Coastal dunes	Recorded from dunes west of Marina, S of Salinas River, W of Lapis Siding Project area does not provide suitable habitat, species was not observed in spring 2004.
Fragrant fritillary *(Fritillaria liliacea)*	List 1B	None	None	Grasslands	Recorded from south of Aromas Suitable habitat potentially present; however species not observed in spring 2004.
Sand gilia *(Gilia tenuiflora ssp. arenaria)*	List 1B	Threatened	Endangered	Coastal dunes, coastal scrub, maritime chaparral	Recorded from Marina State Beach, Ft. Ord, E of Del Monte and Reservation Rd., NW of Hwy 1and Reservation Rd., Project area does not provide suitable habitat, species was not observed in spring 2004.
Santa Cruz tarplant *(Holocarpha macradenia)*	List 1B	Endangered	Threatened	Grassland	Known form northern Monterey County, off Elkhorn Road Suitable habitat within Project area; however species not observed in spring or summer 2004.
Kellogg's horkelia *(Horkelia cuneata ssp.*	List 1B	None	Species of Concern	Closed cone coniferous forests, chaparral, coastal scrub, old	Recorded from 1 mi. N of Marina (1940) and Ft. Ord S of Marina

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
sericea)			Concern	dunes	Suitable habitat within Project area; however species not observed in spring or summer 2004.
Contra Costa goldfields *(Lasthenia conjugens)*	List 1B	None	Endangered	Mesic grassland	Known form Ft. Ord, southwest of Salinas Suitable habitat within Project area; however species not observed in spring or summer 2004.
Marsh microseris *(Microseris paludosa)*	List 1B	None	None	Mesic grassland	Historic occurrences from Seaside area Suitable habitat within Project area; however species not observed in spring or summer 2004.
Yadon's rein orchid *(Piperia yadonii)*	List 1B	None	Endangered	Closed cone coniferous forests, chaparral, coastal bluff scrub	Recorded from south of Marina (Ft. Ord), Marina, Prunedale Project area does not provide suitable habitat, species was not observed in spring 2004.
Santa Cruz clover *(Trifolium buckwestiorum)*	List 1B	None	None	Mesic grassland	Recorded from Laguna Seca, Tarpy Flats and Ft. Ord Suitable habitat within Project area; however species not observed in spring or summer 2004.
Saline clover *(Trifolium depauperatum var. hydrophylum)*	List 1B	None	None	Alkali wetlands	Historic occurrence near Moss Landing; other occurrences from Soda Lake (Santa Cruz County) and Hwy 25 (San Benito County) Suitable habitat within Project area; however species not observed in spring 2004.
Pacific Grove clover *(Trifolium polyodon)*	List 1B	Rare	None	Mesic grassland	Recorded from Carmel Valley area Suitable habitat within Project area; however species not observed in spring 2004.

<u>CNPS Status:</u>

List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDFG Code. **List 4:** Plants of limited distribution; a watch list.

Figure 14. Congdon's tarplant (*Centromadia parryii ssp. congdonii*) growing within slight depression in Project area, June 17, 2004.

4.3 Special-Status Wildlife Species

In the context of this study, special-status species include animals with State or Federal endangered or threatened status, Federal and State proposed or candidate species for listing, State "fully protected" species and California species of special concern. Thirteen special-status species have been recorded or may occur within the boundaries of the study area; these include California tiger salamander, California red-legged frog, southern Pacific pond turtle, white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), Cooper's hawk (*Accipiter cooperii*), burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), tricolored blackbird (*Agelaius tricolor*), pallid bat and Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*) (see Table 3). For these species, the study area provides known or potential breeding habitat or significant wintering habitat. A description of the status, natural history and pattern of occurrence for these species is presented below.

Several other special-status species were also considered, but are not discussed in further detail for one or more of the following reasons: 1) the species is believed to be extirpated from the area; 2) the species is expected to occur on the study site only as a transient; 3) wintering individuals may be present, however, only the breeding population of the species is protected and the study site does not provide nesting habitat; 4) lack of suitable habitat in study area; and 5) the study area is outside of the species' known distributional range. These species include western spadefoot toad (*Spea hammondii*), California legless lizard (*Anniella pulchra*), California horned lizard (*Phrynosoma coronatum frontale*), San Joaquin coachwhip (*Masticophis flagellum ruddockii*), two-striped garter snake (*Thamnophis hammondii*), golden eagle, ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicana*), merlin (*F. columbarius*), short-eared owl (*Asio flammeus*), willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo belli pusillus*), yellow-breasted chat (*Icteria virens*) and San Joaquin pocket mouse (*Perognathus inornatus psammophilus*).

Table 3. Special Status Wildlife Species, Salinas Annexation Project Area.

Species	Status	Occurrence on Site
California Tiger Salamander	FT, CSC	Population on-site is hybrid. Breeding habitat in irrigation ponds Nos. 1 and 2. Potential upland habitat on remnant grasslands and oak woodlands. May also use burrows along dirt access roads in vicinity of breeding ponds. One tiger salamander recorded on Old Stage Road during winter 2002 (separate study).
California Red-legged Frog	FT, CSC	Adults and tadpoles observed along unnamed drainage paralleling Old Stage Road, and 1 adult observed in culvert pool at upper-end of east tributary. Red-legged frogs also observed on Old Stage Road during studies in 2002-03. Potential habitat along Gabilan Creek. All drainages could provide CRF habitat at some level.
Southern Pacific Pond Turtle	CSC	One pond turtle observed in the unnamed drainage and in Natividad Creek. One road-kill observed on E. Boronda Road, adjacent to study area. Also, in 2002-03, dozens observed in two ponds on Culina property, prior to the removal of the ponds. Depending on the hydrologic regime, irrigation ponds and all drainages on-site provide potential habitat. May nest in grasslands and agricultural fields.
White-tailed Kite	FP	Kites observed foraging over fields during this study as well as in 2002-03. Potential nesting habitat in riparian woodlands and eucalyptus groves.
Northern Harrier	CSC	Harriers observed in 2002. Grasslands and ruderal uplands provide potential foraging and nesting habitat. Nesting habitat may be marginal, due to agricultural practices and fragmentation.
Cooper's Hawk	CSC	Female observed displaying nest defense behavior in riparian corridor on Wayland parcel. Nesting pair observed just west of the study site in Natividad Creek.
Burrowing Owl	CSC	Grasslands and ruderal uplands with ground squirrel burrows provide potential denning habitat. No nesting owls observed on-site during 2004 surveys. One burrow with owl pellet observed on Andrus parcel; perhaps from a wintering or migrant owl.
California Horned Lark	CSC	Singing males and pairs observed throughout the study site; likely nests on bare disced areas, fallow fields, between row crops and in grazed grasslands. Family groups observed in 2002- 03.
Loggerhead Shrike	CSC	No nesting shrikes observed on-site, during this study or during 2002-03. However, this species is known to nest in the project region and may nest on-site in future years. One shrike was observed on 2 Nov. Potential nesting habitat in grasslands with scattered trees and shrubs.
Yellow Warbler	CSC	Potential nesting habitat in willow riparian along Gabilan Creek, Natividad Creek and the unnamed drainage; singing males observed during the breeding season during 2002-03 and in 2004.
Tricolored Blackbird	CSC	Grasslands provide foraging habitat. Nesting colony observed at an irrigation pond just south of the study area. Potential nesting habitat on-site in the dense tule stand on the Wayland parcel.
Monterey Dusky-footed Woodrat	CSC	The remnant oak woodland and riparian corridors may provide potential habitat. Habitats may be marginal due to fragmentation and ground squirrel control in adjacent agricultural areas.
Pallid Bat	CSC	Farm structures and large, mature oaks may provide roosting habitat.

Status Codes: FT = Federally Threatened; CSC = California Species of Special Concern; FP = State Fully Protected.

4.3.1 California Tiger Salamander. The California tiger salamander is a Federal threatened species and State species of special concern (USFWS 2004; CDFG 2004b). The population consists of three Distinct Population Segments (DPS) – the Santa Rosa DPS, Santa Barbara DPS and Central California DPS, all of which are Federally listed as threatened or endangered (USFWS 2004; USFWS 2003). The California tiger salamander (CTS) has disappeared from 55% of its historic range (Jennings and Hayes 1994). Presently, this species is distributed in the Central Valley from Yolo County south to Tulare County, and in the Coast Range valleys and lower foothills from Sonoma County south to Santa Barbara County (Shaffer 1991). California tiger salamanders primarily inhabit valley floor and foothill grasslands, open oak woodlands and scrub habitats encompassing vernal pools and seasonal ponds (Trenham 2001a; USFWS 2000). Post-metamorphic individuals (i.e., adults and juveniles) live in rodent burrows in uplands for most of their lives (Trenham 2001; Trenham *et al* 2000; Loredo *et al* 1996). During the rainy season, typically November through March, adults migrate at night to aquatic breeding sites (Loredo and Van Vuren 1996; Stebbins 1985), which include quiet waters of seasonal ponds, reservoirs, lakes and occasionally stream pools (Stebbins 1985). Tiger salamanders have osmoregulatory adaptations that allow for existence in highly alkaline aquatic environments (Kirschner et al. 1971; Romspert and McClanahan 1981). Based on a recent study, migration distances of adults between upland habitat and breeding pools generally are within 450 m (Trenham and Shaffer *in prep.*), but distances up to 2 km (1.2 miles) have been recorded (USFWS 2000). In habitats encompassing several ponds, experienced adults may breed at more than one pond during their lifetime (Trenham *et al* 2001). The adults remain at the breeding pond from one day to several weeks, then return to upland refugia (Loredo and Van Vuren 1996). Males migrate to breeding sites before females and tend to stay at breeding sites longer (e.g., 6 – 8 weeks for males and 1 – 2 weeks for females)(Trenham *et al* 2000; Loredo and Van Vuren 1996; Shaffer 1993). Eggs are laid singly, or in small groups of up to four, on stalks of submerged vegetation or other objects (e.g., rocks woody material, etc.), typically along the shoreline. The eggs hatch in 10 days to approximately three weeks (USFWS 2000; Jennings and Hayes 1994; Storer 1925). The number of eggs deposited per female per breeding season ranges from around 400 – 1,300 (USFWS 2000). The diet of larvae consists of aquatic insects and other invertebrates, and mostly tadpoles as the larvae grow larger (USFWS 2000; Petranka 1998; Anderson 1968). Larvae typically metamorphose in two to three months, from late spring to summer, when ponds begin to dry (USFWS 2000). Metamorphs emerge from ponds and seek shelter mostly in the immediate vicinity in burrows, cracks in the ground or under debris, but sometimes as far as 200m away, even in the absence of rain (Trenham 2001b; Trenham and Shaffer *in prep.*; Loredo *et al* 1996). During the rainy-season, the juveniles continue to disperse farther to seek refuge in upland areas within 640 m of the breeding pond, but distances up to 1.6 km away from the breeding pond have been recorded (Jennings and Hayes 1994). Adults live up to at least 10 years, but take up to 4 – 5 years to reach sexual maturity (Trenham *et al* 2000). Females may not breed every year and only may breed once or twice during their lifetime (Trenham *et al* 2000). Sub-adults and adults appear to be "sit-and-wait" predators, preying on earthworms, insects and snails (CDFG 1990; Lindquist and Bachmann 1980). Threats and reasons for the decline of this species include loss of breeding and upland habitat and habitat fragmentation due to agricultural and urban development; the introduction of bullfrogs (*Rana catesbeiana*)and predatory non-native fishes; use of larval forms as fishing bait; and hybridization with introduced non-native tiger salamanders (USFWS 2000; Stebbins 2003; Stebbins 1985).

4.3.1.1 Local Occurrence. The CNDDB lists several records of *Ambystoma tigrinum* spp. in the relevant project region, including contemporary records of specimens found north of Salinas near Harrison Road, Herbert Road and San Juan Grade, and an historic record (1952) for the City of Salinas (CNDDB 2004). In addition to the CNDDB records, additional observations were identified through consultations with other biologists. These include one hybrid/non-native population east of Natividad (B. Fitzpatrick, pers. comm.); one hybrid/non-native population east of the project site (B. Fitzpatrick, pers. comm.); one hybrid/non-native population near Spence Road (B. Fitzpatrick, pers. comm.); and one possible hybrid/non-native population near Harrison Rd. (M. Allaback, pers. comm.). Table 4 summarizes the location of *Ambystoma* observations discussed, above.

Table 4. Tiger Salamander Observations in the Project Site Vicinity.

Taxon	Location	Distance from Project Site	Source
Ambystoma sp.	Old Stage Rd	~ 50 ft.	CNDDB 2004
Hybrid/Non-native	Pond east of project site	~ 1,563 ft.	B. Fitzpatrick, pers. comm.
Hybrid/Non-native	Pond east of Natividad	~ 1.1 mi.	B. Fitzpatrick, pers. comm.
Ambystoma sp.	Pond near Harrison Rd	~ 2.0 mi.	M. Allaback, pers. comm.
Ambystoma sp.	Pond near Harrison Rd	~ 2.0 mi.	CNDDB 2004
Ambystoma sp.	Pond at end of Herbert Rd	~ 3.4 mi.	CNDDB 2004
Hybrid/Non-native	Pond at Spence Rd	~ 4.9 mi.	B. Fitzpatrick, pers. comm.
Ambystoma californiense	Pond near San Juan Grade	~ 5.3 mi.	CNDDB 2004
Ambystoma *sp.*	West of Salinas	?	CNDDB 1952 record

4.3.1.2 Site Assessment. Non-native and CTS hybrids were discovered in the study area at Ponds No. 1 and 2 (Figure 4), during spring larval surveys, based on DNA analysis of tissue samples collected from the site performed by Ben Fitzpatrick, Center of Conservation Biology, UC Davis (letter dated 9/2/04) Furthermore, DNA analysis suggests that there is a very low likelihood that native CTS are still present in the hybrid populations (B. Fitzpatrick, pers. comm.). No *Ambystoma* larvae were observed in the unnamed drainage paralleling Old Stage Road. Their absence in the drainage is consistent with negative results from spring surveys performed in 2002-03 along Natividad Creek and its tributaries for a separate study (Bryan Mori Biological Consulting Services Biotic Resources Group 2003). During that study, an adult road-kill tiger salamander also was observed on Old Stage Road, during the fall of 2002.

Although breeding habitat for hybrid/non-native tiger salamanders has been confirmed at Ponds 1 and 2 during this study, upland habitat use has not been documented. Considering the long-distance dispersal capabilities of this species, the remnant stands of grassland, ruderal and oak woodland within 2,000 feet of Ponds 1 and 2 likely provide upland habitat for adults and sub-adults (Trenham and Shaffer *in prep.*). Another factor to consider is the movement of tiger salamanders onto the project site from the foothills east of Old Stage Road. The presence of hybrid/non-native tiger salamander breeding ponds on the project site together with the observation of a road-kill on Old Stage Road in 2002 and the presence of a hybrid/non-native breeding pond to the east suggest that salamanders likely move between the foothills to the east of Old Stage Road and the study site, especially since potential breeding habitat in the foothills to the east (i.e., three reservoirs/ponds) are within dispersal distance to the study site.

Hybrids and non-native tiger salamanders are considered serious threats to the integrity of native CTS populations, since "hybridization can lead to the loss of the native taxon through genetic assimilation" (USFWS 2004). Hybridization is widespread in the Central Coast region, extending from southern Santa Clara County to Fort Hunter Liggett in Monterey County, and eastward through all of San Benito County (USFWS 2004). Native populations within 2.1km (1.3mi) of hybrid populations are vulnerable to genetic assimilation (USFWS 2004). Presently, hybrid CTS populations are evaluated on a case-by-case basis, regarding protection under the Endangered Species Act (B. McIver and J. Niceswanger, pers. comm.).

For this specific project site, the USFWS does not recommend the protection of the on-site population of tiger salamanders, due to the low likelihood of native CTS present on the project site, the lack of known native CTS population sources in the relevant project vicinity, and the widespread distribution of hybrids/non-natives in the project region (J. Niceswanger, USFWS, pers. comm.).

4.3.2 California Red-legged Frog. The California red-legged frog is a Federal threatened species and a State species of special concern (USFWS 2002; CDFG 2004b). Historically, the range of this species extended southward from Marin County, coastally, and Shasta County, inland, south to Baja California (Jennings and Hayes 1994). The red-legged frog has been extirpated from 70% of its former range (USFWS 1996). Presently, red-legged frogs are found primarily in central coastal California in natural and artificial ponds, quiet pools along streams and in coastal marshes (USFWS 1996). Red-legged frogs mostly inhabit pools greater than 2 feet deep for breeding, although shallow, perennial marsh habitat may also be productive if it is free of non-native aquatic predators (Hayes and Jennings 1988; B. Mori, pers. obs.). Optimal aquatic habitat is characterized by dense emergent or shoreline vegetation for cover. However, seasonal ponds with little emergent/shoreline cover located in grasslands may also be used for breeding, where water levels permit the metamorphosis of larvae (USFWS 2002; B. Mori, pers. obs.). Breeding typically occurs between December and April, depending on annual environmental conditions and locality. Egg masses containing 2,000 – 5,000 eggs are usually deposited near the water surface on emergent vegetation but occasionally on the pond bottom where braces are absent (M. Allaback, pers. comm.). Eggs require 6 to14 days to hatch and metamorphosis generally occurs within 3.5 to 7 months after hatching, although larvae have the ability to over-winter at some sites (Fellers *et al* 2001). Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size and probably do not travel far from aquatic habitats if appropriate cover is present nearby. Dispersal of juveniles generally begins with the first rains of the weather-year, although all size classes will move in response to receding water (M. Allaback, pers. obs.). Radio-telemetry data indicates that adults engage in straight-line movements irrespective of riparian corridors or topography, and they may move up to two miles between non-breeding and breeding sites (Bulger 2003). They may take refuge in small mammal burrows, leaf litter or other moist areas during periods of inactivity or whenever it is necessary to avoid desiccation (Rathbun, *et al.* 1993; Jennings and Hayes 1994; pers. obs.). Red-legged frogs emerge to forage soon after dark, and often move up to 300 feet into surrounding uplands, especially following rains, when individuals may spend days or weeks in upland habitats (Bulger 2003). Much of this species' habitat has undergone significant alteration by agricultural, urban development and water projects, leading to the extirpation of many populations (USFWS 1996). Other factors contributing to the decline of red-legged frogs include its historical exploitation as food; competition and predation by bullfrogs (*Rana catesbeiana*) and introduced predatory fishes (Jennings and Hayes 1985; Hayes and Jennings 1988; Lawler *et al* 1999); and salinization of coastal breeding habitat (Jennings and Hayes 1990).

4.3.2.1 Local Occurrence. As part of a separate study in 2002-03, red-legged frogs were documented on the study site and on Old Stage Road, immediately adjacent to the study site (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). One sub-adult was observed on Old Stage Road on 9 December 2002; one road-kill adult was observed in the same vicinity on 12 February 2003; and one adult was observed on-site in a pool, at the uppermost end of the east tributary of Natividad Creek, below the culverts at Old Stage Road

(Figure 4). In addition, the CNDDB indicates that adults were seen on the study site in October 2003 (CDFG 2004a). Other records within 5 miles of the study site include two breeding sites north of Salinas, one near Blackie Road and the other off of Pesante Canyon Road (CDFG 2004a), and an observation of adults in Gabilan Creek, near San Juan Road, north of Salinas (D. Pereksta, pers. comm.).

4.3.2.2 Site Assessment. During this study, CRF were observed on the study site on 12 and 27 May 2004, during general reconnaissance surveys and focused surveys for CTS larvae. The 12 May observation was of an adult and tadpoles at separate locations in the unnamed drainage paralleling Old Stage Road (Figure 4), whereas the 27 May observation was of a single adult at a culvert pool, at the uppermost end of the east tributary to Natividad Creek (Figure 4). The observation of tadpoles is significant, as the location represents a CRF breeding site; confirmed breeding sites are lacking in the immediate vicinity of Salinas.

Based on the results of the 2002-03 study together with this study, CRF breeding habitat is present in the unnamed drainage paralleling Old Stage Road, but appears to be absent from Natividad Creek and the east tributary, due to the degraded habitat conditions along the drainages resulting from vegetation removal and adjacent agricultural operations. In contrast, the breeding site is located within a densely vegetated drainage corridor with adjacent annual grassland habitat. The habitat quality of Gabilan Creek could not be assessed, due to restricted access. However, *all* drainages within the study site likely support CRF during one or more life stages (e.g., breeding, over-summering, dispersal), depending on the hydrologic characteristics, presence of predators, extent of vegetation and adjacent upland uses. Although no CRF were observed at Ponds No. 1 and 2, focused surveys for this species were not performed. As is the case for the drainages within the study site, the irrigation ponds also may support CRF during dispersal or over-summering, and perhaps breeding during optimal conditions. Another factor to consider is movement on- and off-site. The observations of CRF on Old Stage Road during the winter of 2002-03 suggest that they may move to and from the site, perhaps dispersing from breeding habitat located in the foothills to the east of the study site.

4.3.3 Southern Pacific Pond Turtle. The southern Pacific pond turtle is a State species of special concern (CDFG 2004b). The western pond turtle has been separated into two subspecies *Actinemys m. marmorata* is the northern subspecies and *Actinemys m. pallida* is the southern subspecies. Current research suggests, however, that the taxon may be represented by three distinct populations in California and may therefore require a taxonomic revision (Jennings and Hayes 1994). In California, the pond turtle is distributed mostly along the Pacific slope drainages from Oregon to Mexico (Jennings and Hayes 1994). Pond turtles primarily occur in permanent freshwater ponds, lakes, marshes and quiet waters of streams (Bury and Holland 1993). Pond turtles favor sites with the largest and deepest pools and with an abundance of basking sites, such as partially submerged logs or rocks, matted emergent vegetation, or exposed shorelines (Bury and Holland 1993); pond turtles displace one another from basking sites, where such resources are limited (Bury and Wolfheim 1973). Pond turtles are highly sensitive and will seek cover when approached within 100 meters (Bury and Holland 1993). Undercut banks, root masses and boulder piles provide underwater escape cover (Bury and Holland 1993). Although highly aquatic, pond turtles leave the water to reproduce, aestivate and overwinter (Jennings and Hayes 1994). Females dig nests and deposit eggs, during May and June, along the shoreline or in a variety of open upland habitats, usually within 200 meters of water, but as much as 500 meters, and mostly on south-facing slopes with well-drained clay soils (Rathbun *et al* 1992; Jennings and Hayes 1994). Nests must remain dry for proper incubation, and the young hatch and may overwinter in the nest (Jennings and Hayes 1994). Hatchlings require shallow water habitat with dense emergent vegetation and abundant zooplankton (Jennings and Hayes 1994). Pond turtles reach sexual maturity between seven and fourteen years of age (Bury and Holland 1993) and live to be over 42 years (Jennings and Hayes 1994). During dispersal, pond turtles can move up to two kilometers in search of suitable habitat and can tolerate a minimum of seven days without water (Jennings and Hayes 1994). Studies on central coast drainages show that turtles use upland habitat within 50 meters of the creek in times of drought or to avoid winter floods (Rathbun *et al* 2002). Pond turtles are threatened by habitat alteration and loss due to water development, agricultural practices and non-native predators (Jennings and Hayes 1994).

4.3.3.1 Local Occurrence. Except for one record which references the 2002 observation cited below, no other pond turtle records were listed in the regional CNDDB Quads.

4.3.3.2 Site Assessment. During a separate study, western pond turtles were observed on the study site in 2002 at two irrigation ponds on the Cuhna property, adjacent to Natividad Creek (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). Twelve turtles between 4-8" carapace length were observed at the ponds, the differing size classes suggesting the turtle population consisted of breeding individuals. These ponds no longer exist as the landowner removed them sometime in late 2002 (V. DiMaggio, Creekbridge Homes, pers. comm.).

During this study, three pond turtles were observed, two of which were on-site and one immediately adjacent to the study site. The on-site observations were one ≈6" carapace-length turtle in the unnamed drainage on 19 April and one ≈5" carapace length turtle in Natividad Creek on 27 May. The off-site observation was a road-kill turtle (≈8" carapace length)on E. Boronda Road on 19 May (Figure 4). However, it is not certain to what extent the site is being utilized, as focused surveys for this species were not performed. Although no pond turtles were observed at Ponds 1 and 2, they are considered potential habitat, along with all other drainages on the study site. The location of the road-kill on E. Boronda Road suggests that the turtle may have originated from Pond 2. Ponds and drainages in the study area may serve as dispersal, over-summering or permanent habitat, depending on hydrological characteristics. Bare areas and ruderal and agricultural fields adjacent to aquatic habitat likely provide nesting habitat.

4.3.4 White-tailed Kite. The white-tailed kite is designated a State "fully protected" species (CDFG 2004b). Once considered extirpated throughout much of California in the early 1900s (Faanes and Howard 1987) due to habitat loss and indiscriminate shootings (Palmer 1988), kite populations have increased significantly since the 1960s (Faanes and Howard 1987; Palmer 1988). Presently, kites are distributed throughout the coastal foothills and valleys along the entire length of the state, throughout the Central Valley, and into the foothills of the Sierra Nevada (Dunk 1995). White-tailed kites inhabit grassland, oak savannah, agricultural and wetlands habitats, as well as riparian corridors adjacent to open fields (CDFG 1990; Dunk 1995). Kites nest in isolated trees or trees located in dense stands near foraging habitat (Palmer 1988; Dunk 1995). Small mammals, especially voles, constitute a major portion of their diet (CDFG 1990; Dunk 1995). In fact, the increase in California vole (*Microtus californicus*) populations resulting from agricultural development has contributed to this species' comeback in California (Faanes and Howard 1987; Palmer 1988). They generally hunt at the beginning and end of each day during the breeding season, with increased effort throughout the day in winter (Dunk 1995). Kites hunt almost exclusively by hovering (Dunk 1995). Kites are considered moderately social, as territory sizes are typically small; but territory size is dependent on food availability and competition, and territory defense is exhibited year-round (Dunk 1995). Kites are monogamous with pair bonds maintained throughout the year (Dunk 1995). Nests are built in the upper third of trees with tree heights ranging from three to five meters (Dunk 1995). Nests are generally not reused (Dunk 1995). The nesting season is protracted and generally spans February to August, with up to two broods produced in a season, even if the first nesting is successful (Palmer 1988; Dunk 1995). Incubation lasts 30 - 32 days with fledging occurring four to five weeks after hatching (Dunk 1995). During winter, kites usually spend the night at communal roosts that may support >100 kites (Dunk 1995). Although the California population of kites dramatically increased from the 1930s to the 1970s, recent Breeding Bird Surveys from the 1980s to 1990s suggest a declining trend. The decline may be due to a combination of factors such as habitat conversion of grasslands and agricultural fields to urban development, and long-term drought (Dunk 1995).

4.3.4.1 Local Occurrence. In Monterey County, white-tailed kites are uncommon permanent residents in open habitats bordered by riparian woodlands (Roberson 2002). Probable nesting evidence by kites has been recorded in the project area (Roberson and Tenney 1993). No records for this species in the project vicinity were found in the regional CNDDB quads. The local breeding season spans March through July.

4.3.4.2 Site Assessment. During the course of this study, white-tailed kites were observed on-site on 20 April and 24 May 2004, foraging over agricultural fields and grassland patches in the vicinity of Natividad Creek. No evidence of nesting was observed, however focused surveys for this species were not performed and their nesting status on-site remains uncertain. The eucalyptus groves and riparian woodlands on the study site provide potential nesting habitat. The grasslands and fallow fields offer foraging habitat for kites.

4.4.5 Northern Harrier. The northern harrier is a State species of special concern (breeding population) (CDFG 2004b). Harriers are permanent residents in the Central Valley and bordering foothills, the northeastern plateau, and in coastal valleys and foothills along the length of the state (CDFG 1990). In winter, harriers are distributed widely throughout the state in suitable habitat (CDFG 1990). During the breeding period, harriers inhabit open wetlands, grasslands, open scrub and croplands (Macwhirter and Bildstein 1996). Northern harriers forage by flying low, back and forth over the ground, with males preferring to forage in more open habitats than females (Macwhirter and Bildstein 1996). Owl-like facial structures facilitate auditory prey detection in the absence of visual cues (Ryser 1985; Macwhirter and Bildstein 1996). Hunting activities generally are distributed throughout the day, but may be concentrated in the morning and evening hours to avoid extreme daytime temperatures (Macwhirter and Bildstein 1996). Primary prey includes voles and other small- and medium-sized mammals, birds, reptiles and frogs (Macwhirter and Bildstein 1996). In the summer, harriers are not strongly territorial, except around nest sites, where both sexes defend against conspecifics (Macwhirter and Bildstein 1996). In winter, females defend territories and exclude males from prime foraging areas. Harriers are generally monogamous, but males sometimes exhibit polygyny and may maintain a harem of two to five females; nests can be situated closely in polygamous situations (Ryser 1985; Macwhirter and Bildstein 1996). The local breeding season likely spans April - August. Nests are constructed on the ground usually within a patch of dense, tall vegetation. Incubation lasts 30 - 32 days with fledging occurring 34 - 45 days after hatching; only one brood is produced (Macwhirter and Bildstein 1996). Nest site fidelity appears to be weak (Macwhirter and Bildstein 1996). This species is threatened by destruction of marsh habitats, the spread of urban and agricultural development of grasslands, and overgrazing by livestock (Remsen 1978; Macwhirter and Bildstein 1996).

4.5.5.1 Local Occurrence: In Monterey County, the northern harrier is a rare summer resident and uncommon in migration and in winter (Roberson 2002). The local breeding season for harriers spans March to July. Possible breeding evidence for northern harriers has been observed in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the CNDDB regional quads.

4.5.5.2 Site Assessment. During the course of this study, no northern harriers were observed on-site. However, focused surveys for this species were not performed and their nesting status remains uncertain. During a separate study in 2002-03, male and female harriers were observed foraging on-site on the Matsui parcel during the breeding season (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The project site provides foraging habitat for this species along open, disturbed drainages, in grasslands, and ruderal and bare tilled areas. The remnant grasslands and fallow ruderal fields may provide nesting habitat for this species.

4.5.6 Cooper's Hawk. The Cooper's hawk is a State species of special concern (nesting populations) (CDFG 2004b). Cooper's hawks are permanent residents throughout the state, but less common in the coastal northwest and scarce in the southeastern deserts; the resident population is supplemented by winter migrants (Small 1994). During migration and in winter a variety of wooded habitats are used including urban landscaping. During the breeding season, it prefers deciduous, mixed-evergreen forests and deciduous riparian woodlands, favoring mature forests with dense canopy cover around nests (Palmer 1988; Rosenfield and Bielefeldt 1993). Nesting sites are within wooded stands of at least four to eight hectares (Rosenfield and Bielefeldt 1993). Cooper's hawks are monogamous and mating pairs are present on nesting territories as early as March (Rosenfield and Bielefeldt 1993). In California, nests are usually built in oaks with nests constructed on a main crotch or on a horizontal limb of a live tree. Nests are sometimes placed on top of pre-existing bases such as squirrel nests, other hawk nests and mistletoe (Palmer 1988; Rosenfield and Bielefeldt 1993). Cooper's hawks typically build new nests in the same area of previous successful nest sites and only occasionally reuse nests in successive or intermittent years (Rosenfield and Bielefeldt 1993). One brood is produced per year, but the species will re-nest when the first clutch is lost early in incubation. The clutch usually consists of three to five eggs. Incubation is mostly performed by the female and lasts 30 - 36 days. Nestlings fledge in 27 - 30 days after hatching, but return to the nest for roosting and to accept prey deliveries for about 10 days. Fledglings will remain around the nest site for five to six weeks and adults will continue to feed young for up to seven weeks (Rosenfield and Bielefeldt 1993). Home ranges during the breeding season have been estimated at 400 to 1,800 hectares (Reynolds 1983; Rosenfield and Bielefeldt 1993). Prey items typically consist of sub-adult, medium-sized birds (e.g., robins) and medium-sized mammals (e.g., chipmunks) (Rosenfield and Bielefeldt 1993). Cooper's hawks are capable of breeding at one year of age, but most breed at two years or greater. The oldest individual recorded is 12 years. Habitat loss and pesticide contamination are considered threats to this species (Remsen 1978; Rosenfield and Bielefeldt 1993).

4.5.6.1 Local Occurrence. In Monterey County, the Cooper's hawk is a rare summer resident, but fairly common in migration and uncommon in winter (Roberson 2002). The local breeding season for this species spans late March to July. Possible breeding evidence for northern harriers has been observed in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the CNDDB regional quads.

4.5.6.2 Site Assessment. During the course of this study, an adult was observed foraging over the site on 12 April and a female in sub-adult plumage was seen mobbing a red fox on the Wayland parcel on 24 May (Figure 4). Also, on 24 May an active nest site was observed just off-site to the west in Natividad Creek . Focused surveys for this species were not performed and their nesting status on-site remains uncertain, but the observation of a female mobbing a red fox suggests defense of a nesting territory. The riparian woodlands along the unnamed drainage, Gabilan Creek and lower Natividad Creek may provide nesting habitat on-site for Cooper's hawks.

4.5.7 Burrowing Owl. The burrowing owl is a State species of special concern (CDFG 2004b). The California population is distributed throughout the lowlands of the state and consists of both permanent residents and winter migrants (CDFG 1990). Burrowing owls typically inhabit arid, treeless, valley and foothill grasslands, desert floors, agricultural areas and open terrain in urban settings (e.g., airports, golf courses, vacant lots, etc.) supporting populations of burrowing mammals and insects (Haug, *et al* 1993). Where ground vegetation is present, sparse, short cover is necessary. In California, nesting habitat is typically characterized by flat or gently rolling terrain (Grinnell and Miller 1944). In winter, a variety of open habitats, over a wider range of elevations, are used (B. Mori, pers. obs.). In Central California, this species depends on burrows of small mammals, most notably ground squirrels, for nesting and escape cover (Haug *et al* 1993). Artificial structures may also be utilized (Collins 1977; California Burrowing Owl Consortium 1997). Raised areas near burrows or elevated burrows serve as vantage points (Haug *et al* 1993). In non-migratory populations, the same burrows are maintained and used year-round. Burrowing owls are crepuscular in habit and found perched outside of active burrows during the day, but are also active at night (CDFG 1990; Haug *et al* 1993). Burrowing owls are opportunistic feeders, preying primarily on arthropods, small mammals and small birds (Haug *et al* 1993). In California, results of relocation efforts indicate strong site fidelity to nesting sites (Haug *et al* 1993; Delevoryas 1997; Feeney 1997). Breeding pairs are mostly monogamous, but polygyny has been reported. In western populations, pair bonds are maintained throughout the year but may not be permanent, since mate switching can take place between years. In migratory populations, males arrive at burrow sites first, then prepare the burrow and begin courtship and territorial behavior. Only one brood is produced, unless the first clutch is lost early in the nesting period. The clutch can consist of up to 11 eggs that are incubated by the female for 21 – 23 days. The male provides food to the female during incubation and initially provides food for the nestlings. As the young become less dependent, the female begins to hunt and provide food. Fledging takes place at about 44 days after hatching, but young owls will remain near nest burrows and forage with adults until dispersal in late July to August. Sexual maturity is attained in one year. Oldest age recorded is eight years. This species has experienced a serious decline throughout the state as a result of habitat loss from agriculture and urbanization, and probably from the secondary effects of ground squirrel poisoning programs (Remsen 1978). DeSante *et al* (1997) indicated that the central California burrowing owl breeding population may be as low as 925 pairs, and that the breeding population of burrowing owls in central California has declined by 65% over the decade spanning 1981-91.

4.5.7.1 Local Occurrence. The burrowing owl is a rare local resident in Monterey County, with the current populations centered around Salinas and east of King City (Roberson 2002). The local breeding season spans March through July. The resident population is likely augmented by migrants, which are expected to arrive from September and remain through March. A nesting population is present at the Salinas Airport and between State Route 101 and HWY 183(CDFG 2004a). Burrowing owls formerly bred near the County Maintenance Facility at East Laurel Drive (G. Kittleson, pers. comm.).

4.5.7.2 Site Assessment. No burrowing owls were observed during the 2004 focused nesting surveys, despite the presence of potential habitat on the Andrus parcel, where ground squirrel burrows were abundant and the vegetation height appeared optimal due to grazing. One owl pellet was observed at a den entrance on the Andrus parcel during the initial ground search for dens and evidence of occupancy (Figure 4). Most of the remainder of the study site was unsuitable as denning habitat due to row crop agriculture. Even on fields that were not farmed, discing and/or tall vegetation height created unsuitable microhabitat conditions. Although not observed to nest on-site in 2004, the owl pellet indicated that the site was used during migration or winter. Also, the remnant grasslands in the study area may support nesting owls in the future.

4.5.8 Loggerhead Shrike. The loggerhead shrike is a State species of special concern (breeding population) (CDFG 2004b). The shrike is found throughout California except for most of the northwest and along the Cascade-Sierran ranges (CDFG 1990). Loggerhead shrikes inhabit valley and foothill grasslands, wetlands and agricultural areas supporting scattered trees and shrubs (Ehrlich *et al* 1988; CDFG 1990; Yosef 1996). Shrikes feed on insects, reptiles, small mammals, birds and carrion (CDFG 1990; Yosef 1996). Areas of bare ground and short cover are preferred for hunting (Yosef 1996). Shrikes are sit-and-wait predators and, where available, favor perching on fence lines, utility lines and poles in search of prey (Yosef 1996). When stalking prey on the ground, shrikes raise their wings half-opened in a stereotyped manner, perhaps to startle prey (Yosef 1996). Due to the absence of talons, large prey are impaled on thorns or barbed wire to facilitate consumption or to establish a cache for future use (Ehrlich *et al* 1988; Yosef 1996). Shrikes are highly territorial and maintain relatively large areas compared to other birds of similar size. Territories are defended mostly through song rather than fighting (Yosef 1996). In California, pairs disband in winter with each sex holding separate adjacent territories, presumable because of the scarcity of prey. Resident birds are monogamous. The breeding season spans March - August (CDFG 1990). This species exhibits high site fidelity and nests are often reused (Yosef 1996). Nests are usually built in densely foliaged trees and shrubs, preferably with thorns (CDFG 1990; Yosef 1996); however, structures such as telephone poles, abandoned buildings and machinery, and brush piles are also used (Yosef 1996; B. Mori, pers. obs.). Up to five eggs are laid and incubation lasts 16 days, with fledging occurring about 20 days after hatching (Yosef 1996). Two to three broods are produced each year. The loggerhead shrike has been experiencing a significant decline throughout its range in the U.S. and Canada (Tate 1986; Ehrlich *et al* 1992; Peterjohn and Sauer 1995). Habitat loss and pesticide contamination has been identified as factors contributing to this species' decline (Ehrlich *et al* 1988; Peterjohn and Sauer 1995; Yosef 1996).

4.5.8.1 Local Occurrence. The loggerhead shrike is an uncommon resident in Monterey County, with numbers supplemented by winter migrants (Roberson 2002). Shrikes have been documented to nest in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the local CNDDB Quads. The local nesting season likely spans from March through July.

4.5.8.2 Site Assessment. No nesting shrikes were observed on-site during the course of this study, however focused surveys for this species were not performed and their nesting status on-site remains uncertain. The remnant grasslands on the study site provide potential nesting habitat, particularly where scattered trees and shrubs are present, such as along the northern fence line of the Andrus parcel. One shrike was observed on-site on 2 November 2004. Shrikes may nest on-site in the future, since nesting has been documented nearby.

4.5.9 California Horned Lark. The California horned lark is a State species of special concern (breeding population) (CDFG 2004a). The subspecies *E. a. actia* is distributed along the coast from Sonoma County south to San Diego County and inland throughout the San Joaquin

Valley (Grinnell and Miller 1944). Horned larks show a preference for habitat characterized by bare ground and low, sparse ground vegetation. These microhabitats include grasslands of level to moderate relief, mountain meadows, open coastal plains, alkali flats, active and fallow hayfields and bare croplands (Grinnell and Miller 1944; CDFG 1990; Beason 1995). Horned larks forage mostly on seeds in winter but supplement their diet with grasshoppers, beetles and lepidopteran larvae during spring and fall (Beason 1995). Territories are regularly spaced during the nesting period but small mono-specific flocks of young birds form soon after fledging and, by late summer, adults join the flocks, which can increase in size to several hundred by winter (Beason 1995). Winter flocks are nomadic and wander over large areas in search of food (Beason 1995). Resident birds begin defending nesting areas by January and February (Beason 1995). Horned larks are apparently monogamous for at least one season, but polygyny occurs when a male holding territory dies and is replaced by a neighboring male (Beason 1995). Nests are built by females on bare ground in natural depressions or depressions created by the female, usually behind a tuft of grass or other object to provide shelter from wind (Ehrlich *et al* 1988; Beason 1995). Incubation is between 11- 13 days, with fledging occurring 8 - 10 days after hatching; fledglings are not capable of flight until a few days later (Beason 1995). Horned larks produce two broods. Nest site fidelity appears to be strong in horned larks (Beason 1995). Agricultural operations are believed to destroy many nests (Ehrlich *et al* 1988).

4.5.9.1 Local Occurrence. Horned larks are common, localized residents in Monterey County, with numbers supplemented in the winter by migrants (Roberson 2002). Local nesting locations include the lower Salinas Valley up to Fremont Peak (Roberson and Tenney 1993). No records for this species were found in the local CNDDB Quads. The local nesting season spans from March through June.

4.5.9.2 Site Assessment. During the course of this study, horned larks were observed in scattered localities throughout the study area (Figure 4). Observations of nesting behavior included singing males, pairs and territory defense during the breeding season in grazed grasslands, as well as agricultural fields. During a separate study, confirmed evidence of nesting was observed on fallow and bare fields on the Matsui parcel in 2002, immediately north of the Andrus parcel. Despite the expansion of row crop agriculture on the Matsui parcel in 2003, horned larks returned and appeared to make opportunistic use of remnant bare and ruderal patches, as well as rows between crops (Bryan Mori Biological Consulting Services 2003). This observation suggests that this species exhibits strong site fidelity, and will return to natal nesting habitat, so long as nesting is successful. Although nesting has been confirmed, the distribution of nesting birds on-site remains uncertain, since focused surveys for this species were not performed. Grazed grasslands and bare fields throughout the study site should be considered potential nesting habitat.

4.5.10 Yellow Warbler. The yellow warbler is a State species of special concern (breeding population) (CDFG 2004b). Yellow warblers are primarily summer residents and, in the breeding season, are distributed throughout the state, but absent or rare along the Sierra crest, in the Central Valley and southeastern deserts (CDFG 1990; Small 1994). They winter locally in small numbers in Southern California (CDFG 1990; Small 1994). Breeding populations are closely associated with perennial streams supporting riparian vegetation composed of dense willow thickets and taller trees such as cottonwoods, sycamores and alders (Grinnell and Miller 1944). Outside the breeding season, this species may occur in a variety of habitats including oak woodlands, coniferous forests, orchards and urban landscaping, but is still most numerous in riparian corridors (Grinnell and Miller 1944; Small 1994). Yellow warblers are primarily insect gleaners but occasionally will "hawk" (take insects in flight) or hover when foraging (Lowther *et al* 1999). In California, the nesting season generally spans April through August. Mating pairs are monogamous, at least through the breeding season, with some reports of polygyny (Lowther *et al* 1999). Mate fidelity in successive years has been reported, when mates from the previous season are available (Lowther *et al* 1999). Males arrive to nesting grounds first and often select tall trees from which to broadcast their courtship and territorial songs (Schroeder 1982). Nest building usually takes place within one to four days after the female's arrival (Lowther *et al* 1999). Deep cup nests of grasses, bark and other plant fibers are placed low, from three to six feet from the ground in the upright fork of a shrub, sapling or tree in dense vegetation to conceal the nest from predators and brood-parasites (Knopf and Sedgwick 1992). Yellow warblers produce one brood in late May to early June, but will re-nest if the clutch is lost or parasitised by cowbirds early in the season (Lowther *et al* 1999). The clutch typically consists of four to five eggs, and only the female performs incubation (Lowther *et al* 1999). Females will leave the nest to forage, but the male may also feed the female during incubation (Lowther *et al* 1999). The eggs hatch in about 11 - 12 days. Both parents feed the nestlings, which fledge in 8 - 12 days after hatching. The young remain with the parents for up to 21 days after leaving the nest. By mid-August, birds begin to disperse and migrate southward. Sexual maturity is reached in one year. The oldest age recorded is 8 years 11 months. Yellow warblers are threatened by loss of riparian habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*) (Remsen 1978; Lowther *et al* 1999). While yellow warblers do respond to cowbird parasitism by ejecting eggs or deserting nests, this behavior occurs only 50% of the time if cowbird eggs are laid during the first-half of the egg-laying period, after which rejection drops to zero (Robinson *et al 1995*).

4.5.10.1 Local Occurrence. Yellow warblers are fairly common summer residents of inland riparian woodlands of Monterey County (Roberson 2002). Nesting yellow warblers have been recorded in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the regional CNDDB Quads. The local nesting season spans April through July.

4.5.10.2 Site Assessment. Singing male yellow warblers were observed in riparian habitat on 18 May at Gabilan and lower Natividad Creeks; 27 May along lower Natividad Creek; and 24 May in the remnant oak woodland (Figure 4). Although focused surveys for this species were not performed, the observations of singing males during the breeding season suggest that nesting may have occurred on-site in 2004. During a separate study in 2002-03, a singing male was observed on the Matsui parcel from April through June, suggesting that the riparian woodlands on-site are used by nesting birds annually. Riparian woodlands of lower Natividad Creek, Gabilan Creek and the unnamed drainage provide potential nesting habitat for this species.

4.5.11 Tricolored Blackbird. The tricolored blackbird is a State species of special concern (breeding population) (CDFG 2004b). Tricolored blackbirds are mostly endemic to California but also occur uncommonly in Oregon and Baja California (Beedy and Hamilton 1997). Their range in California includes the Sacramento and San Joaquin Valleys, the foothills of the Sierra Nevada, and the foothills and valleys of the Coast Ranges, but the main populations are located in the Central Valley (Beedy and Hamilton 1997). Tricolored blackbirds are among the most colonial of passerine birds in North America (Beedy and Hamilton 1997). A single colony can consist of up to 200,000 birds with nest sites often built within one foot of each other; although large colonies are now uncommon (Beedy *et al* 1991; Beedy and Hamilton 1997). Tricolored blackbirds are nomadic breeders adapted at exploiting seasonal habitats and resources such as seasonal water sources and cyclic food supplies (e.g., grasshopper outbreaks) (Beedy and Hamilton 1997; Hamilton 1998). During the summer their diet consists mostly of insects, whereas, in winter, plant material makes up the bulk of their diet. Tricoloreds are widespread during the non-breeding season, when large flocks gather in agricultural fields and pastures. Nesting habitats include freshwater marshes with dense tules, cattails, brambles or willows;

however, vegetation of non-marsh habitats is also used, such as thistle and mustard patches, hayfields and grasslands (Beedy and Hamilton 1997). Nesting sites must consist of nearby water, foraging areas located within a few kilometers of the nesting colony, and provide protection from predators (Beedy and Hamilton 1997). Successful nesting sites will be reused in subsequent years. Initial spring breeding begins from March to April. Nest building is highly synchronous and performed by the females, and nest construction may be initiated from the first day of arrival at a colony (Beedy and Hamilton 1997). Egg-laying usually takes place after four days of arriving at the colony, with the clutch consisting of three to four eggs. Males are highly vocal until the last egg is laid. Incubation takes from 11 - 14 days, with fledging occurring 24 days after hatching (Beedy and Hamilton 1997). Re-nesting may occur far from the initial nesting site after successful or failed attempts (Hamilton 1998), recommencing as early as 50 days later in May and June (Hamilton 1998). Juveniles are not likely to return to natal sites (DeHaven *et al.* 1975a). Females reach sexual maturity in one year, while males tend to breed after reaching two-years of age (Beedy and Hamilton 1997). Human disturbances, inclement weather and agricultural operations can lead to widespread nesting failure (Beedy and Hamilton 1997). The recent population trend indicates a decline between 1994 and 1997 (Beedy and Hamilton 1997). Loss of freshwater wetlands has significantly contributed to this species' decline in California (DeHaven *et al* 1975b; Beedy *et al* 1991).

4.5.11.1 Local Occurrence. In Monterey County, tricolored blackbirds are locally common summer residents of lowlands, becoming widespread in winter (Roberson 2002). Nesting colonies have been recorded in the project site vicinity (Roberson and Tenney 1993). One such colony is present in an irrigation pond just south of the study site, near the corner of Williams Road and Old Stage Road (B. Mori, pers. obs.). No records for this species were found in the regional CNDDB Quads. The local nesting season spans late March through June.

4.5.11.2 Site Assessment. Large flocks of tricolored blackbirds were regularly seen foraging on the remnant grasslands on the study site. No nesting colonies were observed on-site during this study. Although focused surveys for this species were not performed, this species likely did not nest on-site in 2004, since potential nesting habitat (freshwater marsh with dense emergent vegetation) was generally lacking, and where present, tricolored blackbirds were not observed. Since nesting colonies typically contain large numbers of birds (e.g., hundreds to thousands), it is unlikely that nesting was overlooked. However, since tricoloreds are known to change nesting sites between and within seasons, this species could nest on-site in the future, if optimal conditions are present. An example of a potential nest site is the dense bulrush patch in the unnamed drainage on the Wayland parcel, which supported a nesting colony of red-winged blackbirds (*Agelaius phoeniceus*) during this study.

4.5.12 Pallid Bat. The pallid bat is a State species of special concern (CDFG 2004b). Pallid bats are found throughout the state in a variety of habitats at low and mid-elevations including deserts, scrub and coniferous forests (Brown and Pierson 1996). In central California, pallid bats mostly inhabit oak woodlands, ponderosa pine and redwood forests (Brown and Pierson 1996). Pallid bats are year-round residents, moving about locally on a seasonal basis and hibernating in winter (Brown and Pierson 1996). During the day pallid bats roost in buildings, rock crevices, caves, mines and especially hollow trees (Brown and Pierson 1996). Temperature is a limiting factor for pallid bats, which are intolerant of microclimates above 40^0 C; therefore, roost sites that provide a varied temperature regime are selected (CDFG 1990; Brown and Pierson 1996). Pallid bats commonly use bridges as night roosts and show strong site fidelity to such roost sites (Pierson *et al* 1996). Segregated colonies are common, but both sexes can be found together at roost sites (Tuttle 1988). Mating begins in late October and lasts until March (Tuttle 1988).

Maternity roosts are colonial and may contain several hundred females, which give birth to one to two young per year from May to June. Young learn to fly at about six weeks of age (Tuttle 1988). The colony is maintained from spring through the fall when bats disperse after the young have learned to fly and forage on their own. Pallid bats divide into smaller groups in fall and aggregations in winter are smaller than in summer (Tuttle 1988; Pierson 1998). Pallid bats glean moths from leaves and will land on the ground to forage on large arthropods, especially Jerusalem crickets (Brown and Pierson 1996). Pallid bats are sensitive to human disturbances at roost sites (CDFG 1990; Brown and Pierson 1996). Timber harvests, suburban development of oak woodlands and mining operations have been implicated in the decline of this species in California (Brown and Pierson 1996).

4.5.12.1 Local Occurrence. The occurrence of pallid bats in the study area is uncertain, since no records are listed in the CNDDB regional Quads.

4.5.12.2 Site Assessment. During the course of this study, no pallid bats were observed. Their status on the study site is uncertain, since focused surveys were not performed. Pallid bats likely inhabit the site, possibly roosting in large hollowed oaks, such as those found in the remnant oak woodland, and perhaps ranch structures, especially those that do not receive frequent use.

4.5.13 Monterey Dusky-footed Woodrat. The Monterey dusky-footed woodrat is a State species of special concern (CDFG 2004b). This subspecies is distributed through the northern Santa Lucia Mountains from north Monterey County south through much of San Luis Obispo County (Hall 1981). The dusky-footed woodrat is most common in riparian, oak woodland and scrub habitats, but is able to persist in semi-rural areas in proximity to houses, if patches of native habitat are present (M. Allaback, pers. obs.). A study of this subspecies on Camp Roberts found that densities in oak woodland increased significantly if dense under-story was present; densities reached 46.7 animals per hectare in plots of dense vegetation (Tietje 1995). Woodrats typically build middens (nests) of sticks and other debris on the ground, in the lower branches of trees and occasionally in human-made structures. Middens are often reused by successive generations and some can become six feet or more in height. Other atypical dens, including tree cavities, rock crevices and ground holes, are well hidden and easily overlooked. Middens are used for rearing young, protection from predators, resting, food storage, thermal protection and social interaction (Carraway and Verts 1991). Individual woodrats can use and maintain more than one midden and, occasionally, more than one woodrat can occupy a den (Fargo and Laudenslayer 1999). Woodrat middens are also used by a wide variety of native amphibians, small mammals, reptiles and insects (Ingles 1965; Carraway and Verts 1991). Woodrats feed on a variety of plant material, including seeds, nuts, berries and leaves, oftentimes foraging above the forest floor (Jameson and Peeters 1988). Woodrat home ranges may cover 46.2 acres, but activity may also be limited to a single tree over an individual's lifetime (CDFG 1990). They are mostly nocturnal in habit and active throughout the year. Dusky-footed woodrats breed year-round and may produce up to five litters per year, with litters containing one to four young (CDFG 1990). Development of oak woodlands and clearing of brushy under-story are possible threats to this species.

4.5.13.1 Local Occurrence. The CNDDB does not contain information on dusky-footed woodrats in the study region. However, the known range of this species extends throughout the northern-half of the Santa Lucia Range and into the Salinas Valley (Hall 1981).

4.5.13.2 Site Assessment. During the course of this study, Monterey dusky-footed woodrat middens were not observed, however focused surveys for this species were not performed and their status on-site remains uncertain. They may inhabit the tree canopy of the remnant oak woodland and/or the understory of riparian woodlands along Gabilan Creek, Natividad Creek and the unnamed drainage, where vegetation is dense and broad. The habitat quality may be marginal due to adjacent agricultural operations, ground squirrel control and habitat fragmentation.

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Appendix A
Vascular Plant Checklist – Salinas Annexation Project, 2004

FERNS AND FERN ALLIES

EQUISETACEAE

Equisetum arvense (common horsetail)

CONIFERS

CUPRESSACEAE

Cupressus macrocarpa (Monterey cypress)

PINACEAE

Pinus radiata (Monterey pine)

FLOWERING PLANTS-DICOTS

ANACARDIACEAE

Toxicodendron diversilobum (poison oak)

APIACEAE

*Conium maculatum** (poison hemlock)
*Foeniculum vulgare** (fennel)
Oenanthe sarmentosa (water parsley)
Sanicula bipinnatifida (purple sanicle)

ARALIACEAE

*Hedera helix** (English ivy)

ASTERACEAE

Achillea millefolium (yarrow)
*Anthemis cotula**(dog fennel)
Artemisia douglasiana (mugwort)
Baccharis pilularis (coyote brush)
*Carduus pycnocephalus** (Italian thistle)
***Centromadia parryi* ssp. *congdonii* (Condgons's tarwplant)**
*Chamomilla suaveolens** (pineapple weed)
*Cirsium arvense** (Canada thistle)
Delaireia odorata * (German ivy)
*Filago gallica** (common filago)
Hemizonia corymbosa (corymbose tarweed)
Heterotheca grandiflora (telegraph weed)
*Hypochoeris glabra** (smooths cat's ear)
*Hypochoeris radicata** (rough cat's ear)
*Lactuca saligna** (willow lettuce)
*Lactuca serriola** (prickly lettuce)
Madia gracilis (slender tarweed)
*Picris echioides** ((bristly ox-tongue)
*Silybum marianum** (milk thistle)
*Sonchus asper** (prickly sow thistle
*Taraxacum officinale** (dandelion)
Wyethia angustifolia (narrow-leaved mule's ears)
Xanthium strumarium (cocklebur)

BORAGINACEAE

Amsinckia vernicosa (green fiddleneck)
Amsinckia menziesii var. *intermedia* (rancher's fiddleneck)
Amsinckia spectabilis var. *spectabilis* (seaside fiddleneck)
Cryptantha clevelandii (Cleveland's cryptantha)
Heliotropium curassavicum (heliotrope)
Plagiobothrys nothofulvus (popcorn flower)

BRASSICACEAE
*Brassica rapa** (field mustard)
*Capsella bursa-pastoris** (shepard's purse)
Lepidium nitidum (shining pepper-grass)
*Lepidium densiflorum** (common pepper-grass)
*Raphanus sativus** (radish)
Rorippa nasturtium-aquaticum (water cress)

CAPRIFOLIACEAE
Sambucus mexicana (blue elderberry)

CARYOPHYLLACEAE
*Silene gallica** (common catchfly)
*Stellaria media** (common chickweed)

CHENOPODIACEAE
*Chenopodium album** (lamb's quarters

CONVOLVULACEAE
Calystegia subacaulis (hill morning-glory)
*Convolvulus arvensis** (bindweed)

EUPHORBIACEAE
Eremocarpus setigerus (dove weed)
*Euphorbia lathyris** (gopher plant)

FABACEAE
*Lotus corniculatus** (birdfoot trefoil)
Lupinus bicolor (miniature lupine)
Lupinus nanus (annual lupine)
*Medicago polymorpha** (California bur clover)
*Melilotus indica** (sour clover)
Trifolium campestre (hop clover)
*Trifolium hirtum** (rose clover)
*Trifolium subterraneum** (subterraneaum clover)
Vicia sativa ssp. *nigra** (narrow-leaved vetch)
Vicia villosa (woolly vetch)

FAGACEAE
Quercus agrifolia (coast live oak)

GERANIACEAE
*Erodium botrys** (long-beaked filaree)
*Erodium cicutarium** (red-stemmed filaree)
*Erodium moschatum** (white-stemmed filaree)
*Geranium carolinianum** (Carolina geranium)

LAMIACEAE
Lamium purpureum (red henbit)
*Marrubium vulgare** (horehound)

MALVACEAE
*Malva neglecta** (cheeseweed)
*Malva parviflora** (cheeseweed)

MYRTACEAE
*Eucalyptus globulus** (blue gum eucalyptus)

ONAGRACEAE
Camissonia ovata (sun cup)
Epilobium ciliatum ssp. *ciliatum* (ciliate willow herb)

OXALIDACEAE
*Oxalis pes-caprae** (Bermuda buttercup)

PAPAVERACEAE
Eschscholtzia californica (California poppy)

PLANTAGINACEAE
*Plantago coronopus** (cut-leaved pantain)
*Plantago lanceolata** (English plantain)

PLATANACEAE
Platanus racemosa (western sycamore)

POLYGONACEAE
Polygonum amphibium var. *emersum* (water smartweed)
*Polygonum arenastrum** (common knotweed)
Polygonum lapathifolium (willow weed)
*Polygonum persicaria** (lady's thumb)
*Rumex acetosella** (sheep sorrel)
*Rumex crispus** (curly dock)
*Rumex obtusifolius** (bitter dock)
Rumex salicifolius (willow dock)

PORTULACACEAE
Calandrinia ciliata (red maids)
Claytonia perfoliata ssp. *perfoliata* (miner's lettuce)

PRIMULACEAE
*Anagallis arvensis** (scarlet pimpernel)

RANUNCULACEAE
*Ranunculus parviflorus** (small-flowered buttercup)

ROSACEAE
*Acaena novae-zelandiae** (biddy-biddy)
Rosa californica (California rose)
*Rubus discolor** (Himalaya berry)
Rubus ursinus (California blackberry)

SALICACEAE
Populus balsamifera ssp. *trichocarpa* (black cottonwood)
Salix lasiolepis (arroyo willow)
Salix lucida ssp. *lasiandra* (shining willow)

SCROPHULARIACEAE
Castilleja exserta ssp. *exserta* (pink owls clover)
Triphysaria versicolor (San Francisco orthocarpus)
*Veronica anagallis-aquatica** (water speedwell)

URTICACEAE
Urtica dioica ssp. *gracilis* (stinging nettle)

VERBENACEAE
Verbena sp. (vervain)

VIOLACEAE
Viola pedunculata (Johnny jump-up)

FLOWERING PLANTS - MONOCOTS

CYPERACEAE
Cyperus eragrostis (eragrostid sedge)
Cyperus erythrorhizos (red-rooted sedge)
Eleocharis macrostachya (pale spikerush)
Scirpus californicus (California bulrush)

IRIDACEAE
Sisyrinchium bellum (blue-eyed grass)

JUNCACEAE
Juncus bufonius var. *bufonius* (toad rush)
Juncus patens (spreading rush)
Juncus occidentalis (western rush)

LILIACEAE
Chlorogalum pomeridianum (Indian soap plant)
Triteleia ixioides ssp. *ixioides* (golden brodiaeca)

POACEAE
*Agrostis capillaris** (colonial bent)
Avena sp. * (wild oat)
*Briza minor** (quaking grass)
Bromus carinatus var. *carinatus* (California brome)
*Bromus diandrus** (ripgut brome)
*Bromus hordeaceus** (soft chess)
Bromus madritensis ssp. *rubens** (red brome)
*Cynodon dactylon** (Bermuda grass)
*Cynosurus echinatus** (dogtail grass)
Danthonia californica var. *californica* (California oatgrass)
*Danthonia pillosa** (hairy oatgrass)
Elymus glaucus (blue wild rye)
*Holcus lanatus** (velvet grass)
Hordeum branchyantherum (meadow barley)
Hordeum murinum ssp. *leporinum** (wall barley)
*Lolium multiflorum** (Italian ryegrass)
Nassella pulchra (purple needlegrass)
*Phalaris aquatica** (Harding grass)
*Phalaris angusta** (canary grass)
*Poa annua** (annual bluegrass)
*Polypogon monspeliensis** (rabbitsfoot grass)
Vulpia myuros var. *myuros** (rattail fescue)

TYPHACEAE
Typha angustifolia (narrow-leaved cattail)

NOTES:
special status plants (RTE's) appear in **bold type**
* = non-native species
nomenclature from Jepson Manual (Hickman 1993)

APPENDIX B

Wildlife Species Observed on or Adjacent to the Salinas Annexation Site
7 April - 27 May 2004.

Key: a =Observed; aerial transient
n= Observed and known or expected to nest in the project vicinity
o= Observed on or adjacent to the project site; non-breeder
s= Sign (tracks, burrow, scat, etc.)

CLASS: AMPHIBIA

FAMILY: AMBYSTOMATIDAE (Mole Salamanders and Relatives)	
California Tiger Salamander (*Ambystoma tigrinum californiense*)	o
FAMILY: BUFONIDAE (True Toads)	
Western Toad (*Bufo boreas*)	o
FAMILY: HYLIDAE (Treefrogs and Relatives)	
Pacific Treefrog (*Hyla regilla*)	o
FAMILY: RANIDAE (True Frogs)	
California Red-legged Frog (*Rana aurora draytoni*)	o
Bullfrog (*Rana catesbeiana*)	o

CLASS: REPTILIA

FAMILY: EMYDIDAE (Pond and Marsh Turtles)	
Southern Pacific Pond Turtle (*Actinemys marmorata pallida*)	o
FAMILY: IGUANIDAE (Iguanids)	
Western Fence Lizard (*Sceloporus occidentalis*)	o
FAMILY: COLUBRIDAE (Colubrids)	
Western Yellow-bellied Racer (*Coluber constrictor*)	o
Gopher Snake (*Pituophis catenifer*)	o
California Red-sided Garter Snake (*Thamnophis sirtalis infernalis*)	o

CLASS: AVES

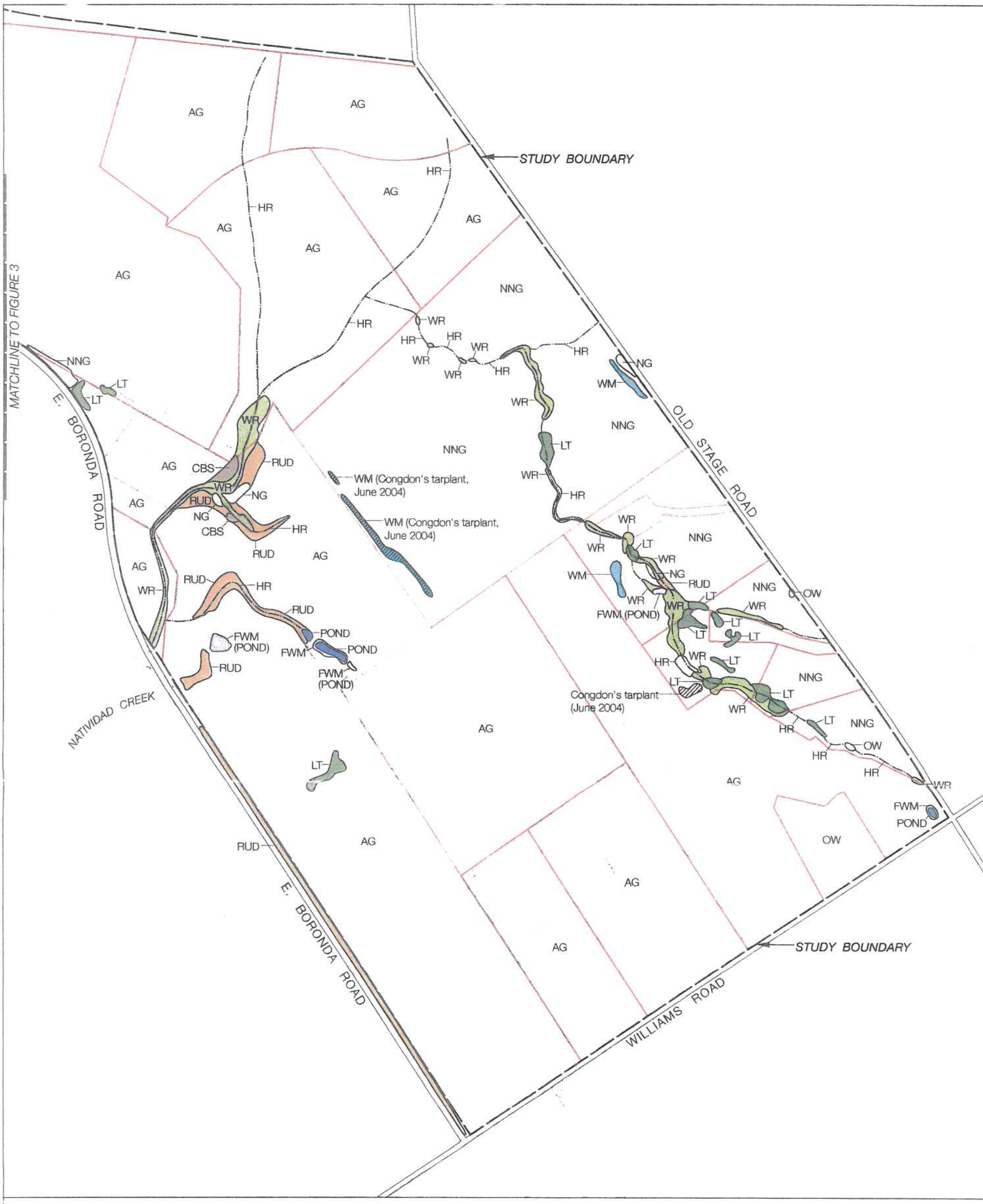
FAMILY: CATHARTIDAE (American Vultures)	
Turkey Vulture (*Cathartes aura*)	o
FAMILY: ANATIDAE (Swans, Geese, and Ducks)	
Canada Goose (*Branta canadensis*)	n?

Mallard (Anas platyrhynchos)	n
FAMILY: ACCIPITRIDAE (Hawks, Harriers and allies)	
White-tailed Kite (*Elanus leucurus*)	n?
Northern Harrier (*Circus cyaneus*)	n?
Red-tailed Hawk (*Buteo jamaicensis*)	n
Red-shouldered Hawk (*Buteo lineatus*)	n
Golden Eagle (*Aquila chrysaetos*)	o
FAMILY: FALCONIDAE (Caracaras and Falcons)	
American Kestrel (*Falco sparverius*)	n
FAMILY: CHARADRIIDAE (Plovers and Relatives)	
Killdeer (*Charadrius vociferus*)	n
FAMILY: LARIDAE (Gulls and Terns)	
Caspian Tern (*Sterna caspia*)	a
FAMILY: SCOLOPACIDAE (Sandpipers and Relatives)	
Wilson's Snipe (*Gallinago delicata*)	o
Whimbrel (*Numenius phaeopus*)	o
Long-billed Curlew (*Numenius americanus*)	o
FAMILY: COLUMBIDAE (Pigeons and Doves)	
Rock Pigeon (*Columba livia*)	o
Band-tailed Pigeon (*Patagioenas fasciata*)	a
Mourning Dove (*Zenaida macroura*)	n
FAMILY: STRIGIDAE (Owls)	
Great Horned Owl (*Bubo viginianus*)	n
Burrowing Owl (*Athene cunicularia*)	s, n?
FAMILY: APODIDAE (Swifts)	
Vaux's Swift (*Chaetura vauxi*)	a
FAMILY: TROCHILIDAE (Hummingbirds)	
Anna's Hummingbird (*Calypte anna*)	n
Allen's Hummingbird (*Selasphorus sasin*)	n
FAMILY: PICIDAE (Woodpeckers)	
Nuttall's Woodpecker (*Picoides nuttallii*)	n
Downy Woodpecker (*Picoides pubescens*)	n
FAMILY: TYRANNIDAE (Tyrant Flycatchers)	
Pacific-slope Flycatcher (*Empidonax difficilis*)	n
Black Phoebe (*Sayornis nigricans*)	n
Ash-throated Flycatcher (*Myiarchus cinerascens*)	n?

Western Kingbird (*Tyrannus verticalis*)	n
Cassin's Kingbird (*Tyrannus vociferans*)	n
FAMILY: VIREONIDAE (Vireos)	
Warbling Vireo (*Vireo gilvus*)	n?
Hutton's Vireo (*Vireo huttonii*)	n
FAMILY: CORVIDAE (Jays, Magpies, and Crows)	
Western Scrub-Jay (*Aphelocoma californica*)	n
American Crow (*Corvus brachyrhynchos*)	n?
Common Raven (*Corvus corax*)	a
FAMILY: ALAUDIDAE	
Horned Lark (*Eremophila alpestris*)	n
FAMILY: HIRUNDINIDAE (Swallows)	
Tree Swallow (*Tachycineta bicolor*)	n?
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)	n
Cliff Swallow (*Petrochelidon pyrrhonota*)	n
Barn Swallow (*Hirundo rustica*)	n
FAMILY: PARIDAE (Chickadees and Titmice)	
Chestnut-backed Chickadee (*Poecile rufescens*)	n
Oak Titmouse (*Baeopholus inornatus*)	n
FAMILY: AEGITHALIDAE (Bushtit)	
Bushtit (*Psaltriparus minimus*)	n
FAMILY: TROGLODYTIDAE (Wrens)	
Bewick's Wren (*Thryomanes bewickii*)	n
House Wren (*Troglodytes aedon*)	n
FAMILY: TURDIDAE (Thrushes, Robins, Bluebirds and allies)	
Western Bluebird (*Sialia mexicana*)	n
Swainson's Thrush (*Catharus ustulatus*)	n
American Robin (*Turdus migratorius*)	n
FAMILY: MIMIDAE (Mockingbirds)	
Northern Mockingbird (*Mimus polyglottos*)	n
FAMILY: STURNIDAE (Starlings)	
European Starling (*Sturnus vulgaris*)	n
FAMILY: BOMBYCILLDAE (Waxwings)	
Cedar Waxwing (*Bombycilla cedrorum*)	o
FAMILY: PARULIDAE (Wood Warblers)	

Orange-crowned Warbler (*Vermivora celata*)	n?
Yellow Warbler (*Dendroica petechia*)	n
Yellow-rumped Warbler (*Dendroica coronata*)	o
Wilson's Warbler (*Wilsonia pusilla*)	n
Common Yellowthroat (*Geothlypis trichas*)	n
FAMILY: EMBERIZIDAE (Towhees, Sparrows, Longspurs and allies)	
Spotted Towhee (*Pipilo maculatus*)	n
California Towhee (*Pipilo crissalis*)	n
Savannah Sparrow (*Passerculus sandwichensis*)	n
Grasshopper Sparrow (*Ammodramus savannarum*)	n
Song Sparrow (*Melospiza melodia*)	n
Golden-crowned Sparrow (*Zonotrichia atricapilla*)	o
White-crowned Sparrow (*Zonotrichia leucophrys*)	o
FAMILY: CARDINALIDAE	
Black-headed Grosbeak (*Pheucticus melanocephalus*)	n
Lazuli Bunting (*Passerina amoena*)	n?
FAMILY: ICTERIDAE (Blackbirds, Orioles and allies)	
Red-winged Blackbird (*Agelaius phoeniceus*)	n
Tricolored Blackbird (*Agelaius tricolor*)	n
Brewer's Blackbird (*Euphagus cyanocephalus*)	n
Western Meadowlark (*Sturnella neglecta*)	n
Brown-headed Cowbird (*Molothrus ater*)	n
Hooded Oriole (*Icterus cucullatus*)	n
Bullock's Oriole (*Icterus galbula*)	n
FAMILY: FRINGILLIDAE (Finches)	
Purple Finch (*Carpodacus purpureus*)	n
House Finch (*Carpodacus mexicanus*)	n
Lesser Goldfinch (*Carduelis psaltria*)	n
Lawrence's Goldfinch (*Carduelis lawrencei*)	n
American Goldfinch (*Carduelis tristis*)	n
CLASS: MAMMALIA	
FAMILY: DIDELPHIDAE (Opossums)	
Virginia Opossum (*Didelphis virginiana*)	s
FAMILY: LEPORIDAE (Rabbits and Hares)	
Brush Rabbit (*Sylvilagus bachmani*)	o
Desert Cottontail (*Sylvilagus audubonii*)	o
Black-tailed Jackrabbit (*Lepus californicus*)	o
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)	
California Ground Squirrel (*Spermophilus beechyii*)	o

FAMILY: GEOMYIDAE (Pocket Gophers)	
Botta's Pocket Gopher (*Thomomys bottae*)	o
FAMILY: CRICETIDAE	
Western Harvest Mouse (*Reithrodontomys megalotis*)	o
California Vole (*Microtus californicus*)	o
Muskrat (*Ondatra zibethicus*)	o
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)	
Coyote (*Canis latrans*)	s
Red Fox (*Vulpes fulva*)	o
FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)	
Long-tailed Weasel (*Mustela frenata*)	o
Striped Skunk (*Mephitis mephitis*)	o
FAMILY: CERVIDAE	
Elk (*Cervus elaphus*)	o
Colombian Black-tailed Deer (*Odocoileus hemionus columbarius*)	o



PLANT COMMUNITY TYPES

AG	Agricultural Fields
NNG	Non-native Grassland
NG	Native Grassland
CBS	Coyote Brush Scrub
WR	Willow Riparian Woodland
RUD	Ruderal Grassland
FWM	Freshwater Marsh
HR	Herbaceous Riparian
OW	Oak Woodland
LT	Landscape Trees (eucalyptus and others)
WM	Wet Meadow
POND	Pond with Open Water

Parcel Lines within Study Area

Drainage Centerline

SPECIAL STATUS PLANT SPECIES

Congdon's Tarplant, observed June 2004

NORTH

SCALE: 1" = 1,000'

0 1,000' 2,000'

Biotic Resources Group
2551 S. Rodeo Gulch # 12 ◆ Soquel, California 95073
(831) 476-4803 ◆ Fax (831) 476-8038

Salinas Annexation Project EIR
Existing Plant Community Types and Special Status Plant Species

Figure 2
1/05
315-02

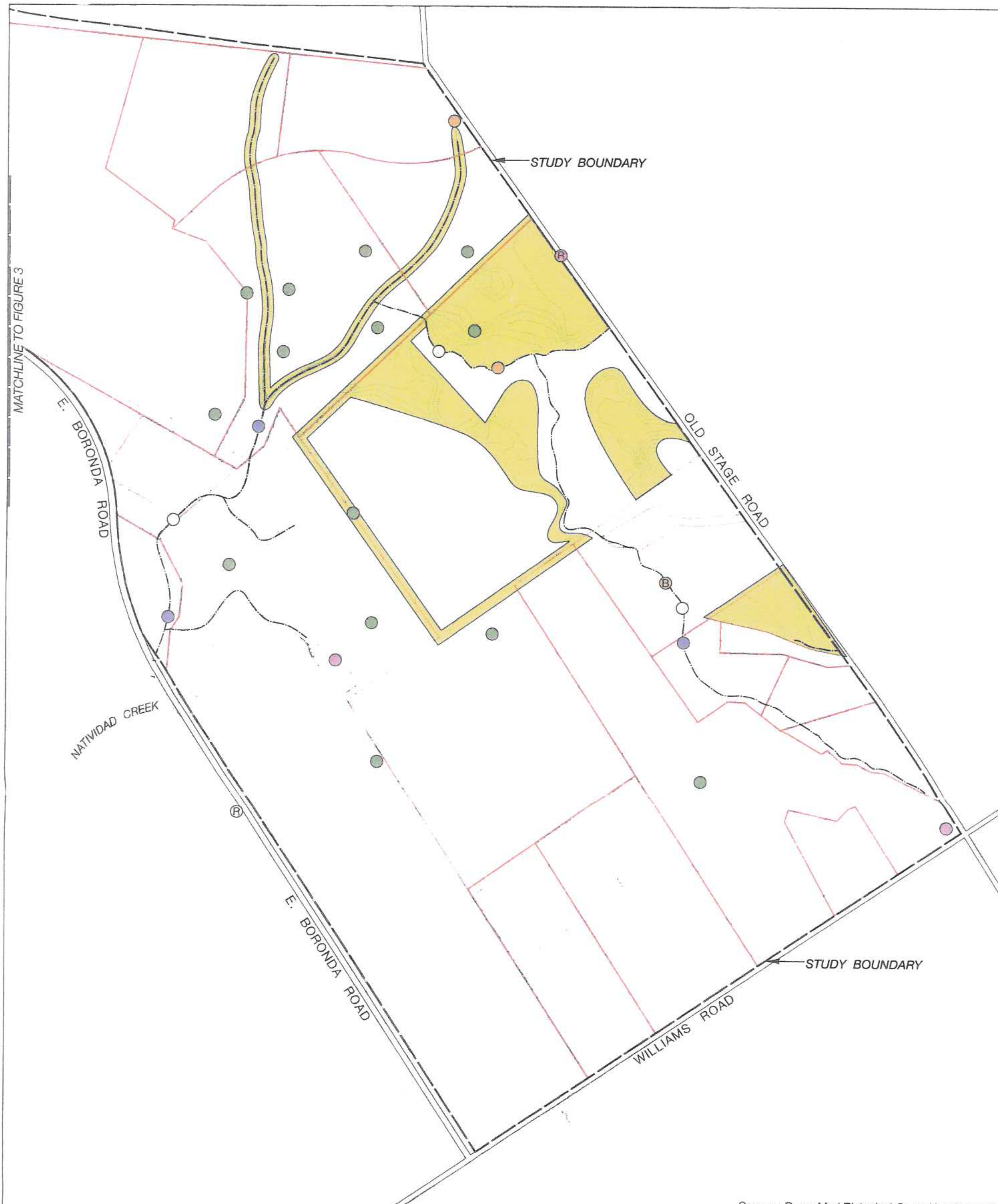
PLANT COMMUNITY TYPES

AG	Agricultural Fields	FWM	Freshwater Marsh	DEV	Developed Area
NNG	Non-native Grassland	HR	Herbaceous Riparian		Parcel Lines within Study Area
NG	Native Grassland	OW	Oak Woodland		Drainage Centerline
CBS	Coyote Brush Scrub	LT	Landscape Trees (eucalyptus and others)		
RUD	Ruderal Grassland	WM	Wet Meadow		
WR	Willow Riparian Woodland	POND	Pond with Open Water		

Biotic Resources Group
2551 S. Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR
Existing Plant Community Types and
Special Status Plant Species

Figure 3
1/05
315-02



WILDLIFE OBSERVATIONS

- Areas of ground squirrel burrow concentrations
- Ⓑ California red-legged frog, breeding site
- California red-legged frog, adult
- Ⓡ Tiger salamander, road-kill, 2002
- Tiger salamander, breeding pond
- Southern Pacific pond turtle
- Ⓡ Southern Pacific pond turtle, road-kill
- Yellow warbler, singing males
- Cooper's hawk, territorial display
- California horned lark, males/pairs

SCALE: 1" = 1,000'

0 1,000' 2,000'

NORTH

Biotic Resources Group
2551 S. Rodeo Gulch # 12 ◆ Soquel, California 95073
(831) 476-4803 ◆ Fax (831) 476-8038

Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of Ground Squirrel Burrow Concentrations

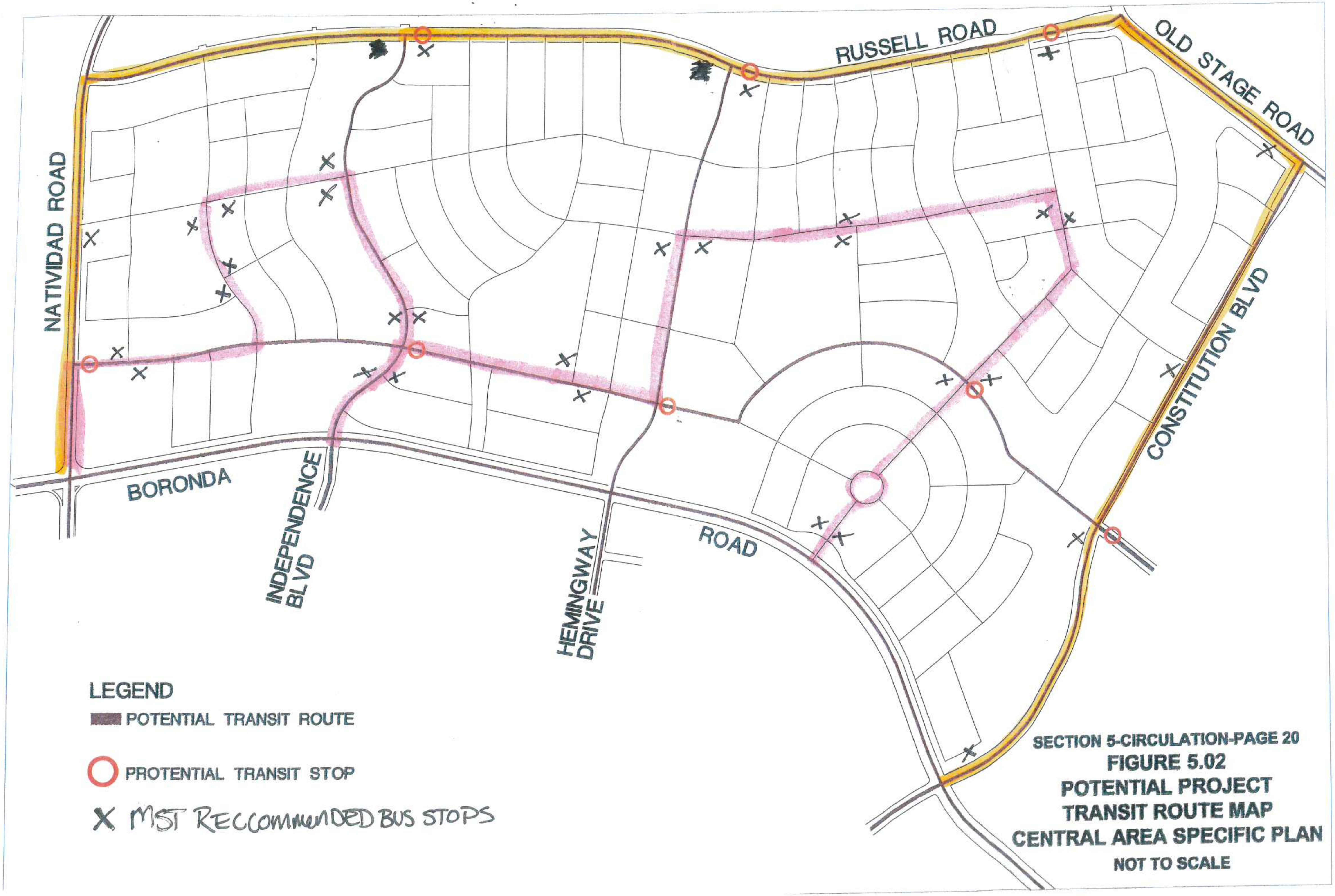
Figure 4
1/05
315-02

Source: Bryan Mori Biological Consulting Services

Biotic Resources Group
2551 S. Rodeo Gulch # 12 ◆ Soquel, California 95073
(831) 476-4803 ◆ Fax (831) 476-8038

Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of Ground Squirrel Burrow Concentrations

Figure 5
1/05
315-02



SECTION 5-CIRCULATION-PAGE 20

FIGURE 5.02
POTENTIAL PROJECT
TRANSIT ROUTE MAP
CENTRAL AREA SPECIFIC PLAN
NOT TO SCALE

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APPENDIX E – HAZARDS AND HAZARDOUS MATERIALS STUDIES/REPORTS

PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDY

Boronda Road Future Growth Area
Central Area Specific Plan
Salinas, California

PREPARED FOR:

DE NOVO PLANNING GROUP
4630 BRAND WAY
SACRAMENTO, CALIFORNIA 95819

DE NOVO PLANNING GROUP

PREPARED BY:

GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742

GEOCON

GEOCON PROJECT NO. S1049-03-01

MAY 2017

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S1049-03-01
May 10, 2017

Ben Ritchie, Principal
De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, California 95762

Subject: PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDY REPORT
BORONDA ROAD FUTURE GROWTH AREA
CENTRAL AREA SPECIFIC PLAN
SALINAS, CALIFORNIA

Dear Mr. Ritchie:

At your request, we have performed a California Environmental Quality Act (CEQA)-level Phase I and Limited Phase II Environmental Site Assessment (ESA) and Geohazards Study for inclusion in the Environmental Impact Report for the Central Area Specific Plan (CASP) portion of the Boronda Road Future Growth Area project in Salinas, California. The CASP Site encompasses 760.4 acres of rural agricultural property bounded by E. Boronda Road to the south, Natividad Road to the west, agricultural land to the north, and Old Stage Road to the east.

The CASP Site consists of cultivated agricultural fields (strawberries, lettuce, raspberries, broccoli, etc.), existing and former rural residential structures and associated outbuildings, agricultural operation buildings and equipment storage yards, and fallow fields. The agricultural operations include the storage and use of fertilizers, pesticides, and fuel and oil. Due to the long-term use of the CASP Site for agricultural purposes, the Limited Phase II ESA was completed to provide preliminary information regarding the potential for persistent organochlorine pesticides and associated arsenic in surface soil.

We appreciate the opportunity to have performed this study for De Novo Planning Group. Please contact us if you have any questions concerning this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

John E. Juhrend, PE, CEG
Senior Engineer

Jim Brake, PG
Senior Geologist

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PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDY REPORT – CENTRAL AREA SPECIFIC PLAN Page

PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDY REPORT – CENTRAL AREA SPECIFIC PLAN

1.0 INTRODUCTION

This report summarizes the methodology and presents the findings of a California Environmental Quality Act (CEQA)-level Phase I and Limited Phase II Environmental Site Assessment (ESA) for the Central Area Specific Plan (CASP Site) portion of the Boronda Road Future Growth Area project in Salinas, California. We performed the Phase I and Limited Phase II ESA and Geohazards Study for the De Novo Planning Group (the Client) to provide information for inclusion into the CEQA document being prepared by the Client for the City of Salinas.

1.1 Purpose and Objectives

The purpose of the Phase I ESA was to identify evidence or indications of ‘recognized environmental conditions’ (REC) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* Section 1.1.1 of ASTM *Designation E 1527-13* defines an REC as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.” De minimis conditions are those that generally do not present a threat to human health or the environment and that generally would not be the subject of the enforcement action if brought to the attention of appropriate governmental agencies.

ASTM *Designation E1527-13* also defines ‘Historical’ and ‘Controlled’ RECs. An ‘Historical REC’ is defined as “a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).” A ‘Controlled REC’ is defined as “a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).” An HREC is not a REC if the property meets current standards for unrestricted residential use. A CREC remains a REC by definition because the property does not meet the unrestricted residential use requirement unconditionally.

The Phase I ESA was also conducted in general accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries,* as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The following principles are an integral part of ASTM Designation E1527-13:

***"Uncertainty Not Eliminated* -** No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost."

***"Not Exhaustive* -** All Appropriate Inquiries does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information."

"Level of Inquiry is Variable – Not every property will warrant the same level of assessment. Consistent with good commercial and customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry."

1.2 Scope of Services

Our Proposal No. LS-14-238, dated December 4, 2014, describes the scope of services for the Phase I and Limited Phase II ESA and Geohazards Study. The scope of services outlined in the proposal was performed with the exception that Sanborn Maps were not reviewed. Environmental Data Resources, Inc. (EDR) stated that Sanborn Map coverage does not exist for the CASP Site.

The main components of the Phase I ESA and their objectives, as specified by the referenced standards, include the following:

- **Physical Setting:** We reviewed physical setting references to obtain information concerning the topographic, geologic, and hydrogeologic characteristics of the CASP Site and vicinity. Such information may be indicative of the direction and/or extent that a contaminant could migrate in the event of a spill or release.
- **Records Review:** We reviewed publicly available Federal, State, and local regulatory agency records to obtain information that could potentially help identify RECs at or potentially affecting the CASP Site.

- **Site History:** We reviewed historical references to assess the history of previous uses of the CASP Site and surrounding area to identify those that could have led to RECs on or near the CASP Site. Historical sources reviewed included aerial photographs, topographic maps, city directories, and previous site assessment reports. In addition, we conducted interviews with persons who were expected to be reasonably knowledgeable about historical and/or current conditions at and uses of the CASP Site.
- **Site Reconnaissance:** We performed a site reconnaissance to observe site conditions and activities for indications of evidence of RECs. The site reconnaissance was for the CASP Site only. Offsite properties and features were viewed solely from the vantage of the CASP Site and public thoroughfares.

1.3 Report Limitations

The Phase I and Limited Phase II ESA and Geohazards Study report has been prepared exclusively for the Client and City of Salinas. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and will require an update to reflect recent records/site visits.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, a review of the specified regulatory records, and a review of the historical usage of the CASP Site, as presented in this report. The Client, should also understand that wetlands, asbestos-containing building materials, lead-containing paint, lead in drinking water, radon, mercury related to mining activities, methane, and mold surveys were not included in the scope of services for the Phase I ESA.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

A data gap is defined by ASTM *Designation E 1527-13* as “a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information.” Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge (e.g., the owner(s), past owner(s), tenants, workers, etc.) or the lack of access to all parts of a site during the site reconnaissance.

We were not provided access to three northwestern site parcels (Avila and Settrini) nor were we provided access to the interior of structures on the Christensen parcels. The lack of access inhibited our ability to adequately assess the environmental conditions of these Site parcels.

Additionally, Sanborn Maps were not reviewed for the CASP Site since EDR stated that Sanborn Map coverage was not available. However, based on our review of historical information from other sources, we do not consider the lack of Sanborn map coverage a data gap.

2.0 SITE DESCRIPTION

This section provides information regarding the location and physical characteristics of the CASP Site including its size, topography, geologic, soil, and hydrogeologic conditions.

2.1 Location and Legal Description

The CASP Site encompasses 760.4-acres of relatively flat to gently sloping land bounded by E. Boronda Road to the south, Natividad Road to the west, agricultural land to the north and Old Stage Road and agricultural land to the east (Figure 1). The CASP Site is depicted on United States Geological Survey's (USGS), 7.5-minute topographic map, Natividad, California (USGS, 1984). The CASP Site includes the northwestern quarter of Section 15, the central portion of Section 14, the southeastern corner of Section 13, and the northwestern corner of Section 23 of Township 14 South, Range 3 East, Mount Diablo Base and Meridian.

The CASP Site is further identified by the following Monterey County Assessor's Parcel Numbers (APNs): 153-091-001, 153-091-005, 211-013-007, 211-013-003, 211-013-008, 211-013-004, 153-091-006, 153-091-003, 153-091-007, 153-091-008, 153-091-009, 153-091-010, 153-071-034, 153-071-035, 153-101-005, 153-071-036, and 153-071-011. Parcel maps depicting the CASP Site are in Appendix A.

The following addresses are associated with the CASP Site:

APN 153-091-005 - 220 Natividad Road

APN 153-091-001 - 254 Natividad Road

APN 211-013-007 - 256 Natividad Road

APN 153-091-003 - 21025 E. Boronda Road

APN 153-071-034 - 21621 E. Boronda Road

APN 153-071-035 - 21673 E. Boronda Road

APN 153-101-005 - 801 Williams Road

2.2 Site and Vicinity General Characteristics

The CASP Site consists of 17 parcels that are predominantly agricultural land with some rural residential structures and associated outbuildings, agricultural operation buildings and equipment storage yards, and fallow fields. The CASP Site is situated along the northern edge of suburban development in Salinas including residential subdivisions and a high school south of E. Boronda Road. Similar agricultural land is generally present west , north and east of the CASP Site with grazing land to the north east beyond Old Stage Road (Figure 2).

2.2.1 Topography

The overall topographic relief of the CASP Site is approximately 76 feet, with a maximum elevation of approximately 146 feet above mean sea level (MSL) at the northeastern boundary to a minimum elevation of approximately 70 feet above MSL where Natividad Creek crosses beneath E. Boronda Road. The overall slope across the CASP Site is from north to south at approximately 0.3%. An approximate 20- to 25-foot-high slope trends north-south across the central portion of the CASP Site separating natural river terraces. Gabilan Creek flows in a north to south direction through the western portion of the CASP Site and Natividad Creek flows in a north to south direction through the eastern portion.

2.2.2 Geologic and Soil Conditions

Geologic information was obtained from the *Geologic Map of the Monterey Quadrangle* (California Geological Survey [CGS], 2002). The CASP Site is located in the southern Salinas Valley in the Coast Ranges geomorphic province. The valley is bounded by the Gabilan Range to the east, the Sierra de Salinas Mountains to the south and west, and by Monterey Bay to the northwest. The northern Salinas Valley is filled with a thick sequence of Pleistocene to recent age sedimentary deposits both continental and marine in origin. The referenced geologic map indicates that the CASP Site is underlain by Quaternary alluvial fan deposits and floodplain deposits (CGS, 2002).

2.2.3 Soil Conditions

We obtained information regarding soil conditions in proximity to the CASP Site from the United States Department of Agriculture's (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm). Information available on Web Soil Survey indicates that surficial onsite soil is predominantly classified as Chualar loam and Placentia sandy loam, which are well-drained alluvial soil derived from igneous and metamorphic rock.

2.3 Geologic Hazards

2.3.1 Surface Fault Rupture

Numerous active, potentially active, and inactive faults are present in Central California. The criteria for classification of these faults were developed by the CGS for the Alquist-Priolo Earthquake Fault

Zone (APEFZ) Program. By definition, an active fault is one that has had surface displacement within the last 11,000 years. A potentially active fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years), but has had no known movement within the past 11,000 years. Faults that have no demonstrated surface displacement in the last 1.6 million years are considered inactive.

Regional faults in proximity to the CASP Site are depicted on Figure 3. The CASP Site is not located within a currently established APEFZ. Based on published geologic maps and reports, no active or potentially active faults with the potential for surface fault rupture are known to pass directly beneath the CASP Site. Therefore, the potential for surface rupture due to faulting occurring beneath the CASP Site during the design life of the proposed project is considered low. The CASP Site, however, is located in a seismically active area and could be subjected to ground shaking in the event of an earthquake on one of the many active Central California Coast Range faults.The following table lists regional faults within 60 miles of the CASP Site, their distances, and maximum earthquake magnitudes for each.

REGIONAL FAULT SUMMARY

Fault Name	Approximate Distance from CASP Site (miles)	Maximum Earthquake Magnitude
Zayante-Vergeles	6.5	6.8
Rinconada	7.6	7.3
San Andreas (1906)	9.3	7.9
San Andreas (Pajaro)	9.3	6.8
San Andreas (Creeping)	9.3	6.5
Sargent	13.9	6.8
Calaveras (South of Calaveras Reservoir)	14.1	6.2
Monterey Bay – Tularcitos	16.6	7.1
San Andreas (Santa Cruz Mtns.)	16.9	7.0
Quien Sabe	19.5	6.4
Palo Colorado – Sur	25.0	7.0
San Gregorio	29.6	7.3
Monte Vista – Shannon	34.1	6.8
Ortigalista	35.2	6.9
Great Valley 8	37.3	6.6
Great Valley 9	37.5	6.6
San Andreas (Peninsula)	38.3	7.1
Hayward (SE Extension)	38.8	6.4
Hosgri	40.0	7.3
Great Valley 10	42.1	6.4
Greenville	48.9	6.9
Great Valley 11	50.1	6.4
Great Valley 7	51.0	6.7
Calaveras (No. of Calaveras Res)	51.3	6.8
Hayward (South)	51.3	6.9
Hayward (Total Length)	51.3	7.1

2.3.2 Seismicity

The CASP Site is located within the seismically active Monterey Bay area. Based on available reports published by CGS and the USGS, the CASP Site has not experienced reported ground failure as a result of past earthquakes.

2.3.3 Liquefaction

Liquefaction is a phenomenon in which loose, saturated, cohesionless soil deposits located beneath the groundwater table lose strength when subjected to intense and prolonged ground shaking. The seismic excitation increases pore water pressure creating a buoyant effect of the loose soil. When liquefaction occurs, building foundations may sink or tilt and differential ground settlement may occur. Other effects include sand boils (ground loss) and lateral spreading if the liquefiable soil is located adjacent to a steep free face. The areas that have the greatest potential for liquefaction are those in which the water table is less than 50 feet below ground surface and the soils are predominately clean, poorly graded sand deposits of loose to medium-dense relative density.

The CASP Site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. However, soil and groundwater conditions may exist at the CASP Site that may be susceptible to seismic-induced liquefaction.

2.3.4 Lateral Spreading

Seismic-induced lateral spreading is not a likely hazard for the CASP Site because the site topography is generally flat-lying.

2.3.5 Unsaturated Seismic Settlement

Strong seismic shaking can induce settlement of unsaturated, loose sandy soil. Soil conditions may exist at the CASP Site that may be susceptible to unsaturated seismic settlement.

2.3.6 Landslides and Slope Stability

The topography of the CASP Site and vicinity is relatively flat lying. Based on the observed site topography, we do not consider landslides or slope instability to be a hazard for the CASP Site.

2.3.7 Tsunamis and Seiches

The CASP Site is located approximately 10 miles east of the Pacific Ocean at elevations ranging from approximately 70 to 146 feet above MSL. The CASP Site is not within a Tsunami Inundation Area; these areas are mapped by the California Emergency Management Agency and the CGS for coastal areas in California. In the Monterey Bay Area, the elevation of the tsunami inundation line (i.e., maximum anticipated limit of tsunami) is at an approximate elevation of 10 feet above MSL. Given elevations above the anticipated limit of tsunamis in the area, tsunamis (seismic sea waves) or seiches (wave oscillations in an enclosed or semi-enclosed body of water) are not anticipated hazards for the CASP Site.

2.3.8 Flooding and Dam Failure Inundation

Based on the Flood Insurance Rate Maps ([FIRM], Map Nos. 06053C0226G and 06053C0228G; effective date April 2, 2009) prepared by FEMA, the majority of the CASP Site is located in "Zone X" which is defined as: "Areas determined to be outside the 0.2 percent annual chance floodplain." The western portion of the CASP Site is located in a stippled Zone X: "Areas of 0.2 percent annual chance flood" and Zone AE: "Special Flood Hazard Area subject to flooding by the 1% annual chance flood", (FEMA, 2009). The eastern portion of the CASP Site is located in a stippled Zone A: "Special Flood Hazard Area subject to inundation by the 1% annual chance flood." The project civil engineer should determine site grades accordingly. The California Department of Water Resources does not map the CASP Site within a floodplain.

Regional topographic maps and aerial photography we reviewed indicate that the CASP Site is located approximately 35 miles from San Luis Reservoir with topographic separation provided by the Gabalon and Diablo Ranges eat of the Site. The California Governor's Office of Emergency Services *Dam Inundation Maps*, shows that the CASP Site is not appear to be located within the inundation zones of the reservoir. Therefore, dam failure inundation is not considered to be a hazard for the CASP Site.

2.3.9 Volcanic Activity

Volcanic activity closest to the CASP Site is persistent geothermal energy and long-period volcanic seismicity near Clear Lake, which is located approximately 164 miles to the northwest. The nearest active volcano to the Site is Mammoth Mountain, located approximately 157 miles to the northeast. Due to the large distances, the potential for impacts to the CASP Site due to regional volcanic activity is low.

2.3.10 Naturally Occurring Asbestos

The CASP Site is not located within or near an area mapped as an ultramafic rock unit. The nearest mapped ultramafic rocks are approximately 25 miles southeast of the Site and in a different watershed. Naturally occurring asbestos (NOA) minerals (chrysotile, tremolite, actinolite) are more likely to be encountered in areas with ultramafic or some metavolcanic rocks due to metamorphic processes. Based on the distance to the ultramafic rock outcrop, the likelihood of NOA being present at the CASP Site is considered to be low.

2.3.11 Oil Fields & Methane Zones

Based on the California Division of Oil, Gas and Geothermal Resources (DOGGR) online mapping system, the CASP Site is not located within the boundaries of an oil or gas field. No oil or gas wells are located within 5 miles of the CASP Site (DOGGR, 2017). However, due to the voluntary nature of record reporting by the oil and gas well drilling companies, wells may be improperly located or not shown on the location map. Unmapped wells could be encountered during construction would need to be properly abandoned in accordance with the current requirements of DOGGR. However, it is unlikely that unmapped wells are located on the CASP Site as there is not a history of oil or gas exploration in the Salinas Valley.

2.4 Hydrologic and Hydrogeologic Conditions

To assess local groundwater conditions we reviewed reports available on the California State Water Resources Control Board (SWRCB) GeoTracker website (http://geotracker.waterboards.ca.gov) for groundwater information at nearby facilities with a groundwater monitoring array such as leaking underground storage tank (LUST) facilities or other agency-regulated cleanup sites. The nearest such facility is the Shell Station at 1764 North Main Street, approximately 1.5 miles west of the CASP Site. According to information available on GeoTracker for this facility, depth to groundwater measured in shallow groundwater monitoring wells at this facility ranged from approximately 50 to 55 feet in November 2016. Shallow groundwater beneath this facility was determined to flow to the south to southeast.

2.5 Current and Planned Uses of the CASP Site

The majority of the CASP Site is utilized for agriculture purposes. The CASP Site is proposed for development as a master-planned community including residential neighborhoods supported by commercial uses, schools, and an extensive park and trail system. A copy of the CASP Site proposed development plan is in Appendix B.

2.6 Descriptions of Structures, Roads, Other Improvements on the CASP Site

The CASP Site contains a few structures including rural residential and agricultural-related buildings all within the western parcels west of Gabilan Creek. No structures are present on the central and eastern portions of the CASP Site. Evidence of former building improvements exist within APN 153-091-003 (former landscape nursery) and APN 153-071-035 (former dairy/residences) along E. Boronda Road.

Unpaved access roads are present on the majority of the CASP Site parcels. A paved driveway extending from E. Boronda Road and an associated parking lot are present on APN 153-091-003.

Other onsite improvements include several agricultural and domestic wells, and agricultural equipment storage yards. Electrical transmission towers extend south to north then west to east across the central portion of the CASP Site. A fenced electrical compound (former substation) containing electrical transmission towers and abandoned concrete foundations is located along the southern boundary of APN 211-013-004 in the northern portion of the CASP Site.

2.7 Current Uses of Adjoining Properties

The area north of the CASP Site consists of similar agricultural land and rural residences. Land east and west of the CASP Site are also designated as part of the Future Growth Area (the Eastern and Western Area Specific Plans) in the Salinas General Plan. These properties are currently used for grazing and agricultural production. South of the CASP Site across E. Boronda Road are residential subdivision developments and Everett Alvarez High School.

3.0 RECORDS REVIEW

This section summarizes readily available agency records for the CASP Site and properties and facilities in the surrounding vicinity.

3.1 CASP Site Specific Plan Appendix Documents

The following CASP Site Specific Plan Appendix documents provided by Mr. Hugh with Thrust IV Management Services (CASP Site development team representative) were reviewed:

1. *Phase I Environmental Site Assessment and Limited Phase II Soil Testing, Christensen Parcels, Boronda and Natividad Roads, Salinas, California,* Earth Systems Pacific, October 2007.
2. *Phase I Environmental Site Assessment and Limited Phase II Soil Investigation, Matsui/Codiroli Properties, 600 Acres Northeast of Boronda Rd. at Hemmingway Dr., Salinas, Monterey County, California,* Earth Systems Consultants, February 2001.
3. *Additional Deeper Soil Sampling and Testing, Matsui Codiroli Properties, Salinas, California,* Earth Systems Consultants, March 2001.
4. *Phase I Environmental Site Assessment, Proposed New School Site, Probert/Matsui Property, North of East Boronda Road, Salinas, California,* Kleinfelder, January 2009.
5. *Geologic and Seismic Hazards Assessment Report, Proposed New SUHSD Middle School Campus, North of E. Boronda Road, Salinas, California,* Kleinfelder, January 2013.

<u>Christensen Parcels Phase I and II ESA (Reference #1)</u> - this 2007 ESA report was prepared by Earth Systems Pacific for the two Christensen parcels (APNs 153-091-001 and -005) located on the western portion of the CASP Site. Potential environmental concerns identified at the Christensen parcels included residual pesticides in surface soil, three aboveground and one underground fuel storage tanks, ponded oil beneath a ranch building, and several 55-gallon drums and 5-gallon buckets containing waste oil at the ranch compound buildings. The limited Phase II ESA included collection of 15 surface soil samples within the agricultural fields for analysis of pesticides and five shallow soil samples at the aboveground storage tanks (ASTs) and waste oil storage areas for analysis of petroleum hydrocarbons. With the exception of dieldrin, the reported pesticide concentrations were less than the referenced regulatory residential screening levels. Four soil samples collected from the southern portion of the parcels contained dieldrin concentrations slightly exceeding the residential screening level. An elevated diesel concentration was detected in a surface soil sample obtained adjacent to the AST located next to the gasoline underground storage tank (UST). Earth Systems Pacific recommended additional characterization of the extent of dieldrin in the southern portion of the parcels, proper removal of the fuel ASTs and UST, disposal of petroleum hydrocarbon-impacted soil and waste oil containers, and proper abandonment of unused onsite wells.

<u>Matsui/Codiroli Parcels Phase I and II ESA (Reference #2)</u> - this 2001 ESA report was prepared by Earth Systems Consultants for the Matsui/Codiroli parcels (APNs 153-091-006, -007, -008, -009 and -010) comprising the central and eastern portions of the CASP Site. Potential environmental concerns identified at the Matsui/Codiroli parcels included residual pesticides in surface soil, and four fuel ASTs, three with visible surface staining. The limited Phase II ESA included collection of 25 surface soil samples within the agricultural fields for analysis of pesticides, lead and arsenic and one surface soil sample obtained adjacent to the western diesel AST for analysis of petroleum hydrocarbons. With the exception of dieldrin and toxaphene, the reported pesticide, lead and arsenic concentrations were less than the referenced regulatory residential screening or background levels for arsenic. Several soil samples contained dieldrin and/or toxaphene concentrations exceeding the regulatory residential screening level. Elevated diesel and motor oil concentrations were reported for the surface soil sample obtained adjacent to the diesel AST. Earth Systems Consultants recommended of a health risk assessment for the elevated pesticide concentrations in surface soil, removal and proper disposal of petroleum hydrocarbon-impacted soil at the western diesel AST, proper disposal of waste oil containers, and proper abandonment of unused onsite wells.

<u>Matsui/Codiroli Parcels Additional Soil Pesticide Characterization (Reference #3)</u> - this 2001 letter report was prepared by Earth Systems Consultants for the Matsui/Codiroli parcels (APNs 153-091-006, -007, -008, -009 and -010) comprising the central and eastern portions of the CASP Site. Six deeper soil samples (18 inches) were collected at locations throughout the parcels and analyzed for chlorinated pesticides. Pesticides were not detected at concentrations exceeding the laboratory reporting limits for each soil sample analyzed.

<u>Proposed School Site Phase I ESA (Reference #4)</u> - this 2009 Phase I ESA was performed by Kleinfelder for a proposed public school on portions of APNs 153-091-006 and -007 in the central portion of the CASP Site. The property was noted to be utilized for agricultural purposes since at least the 1950s. Kleinfelder recommended a soil investigation to evaluate potential shallow soil pesticide impacts and pole-mounted transformer leaks, and disposal of a 5-gallon container of hydraulic fluid.

<u>Proposed School Site Geohazard Study (Reference #5)</u> - this 2013 geohazard study was performed by Kleinfelder for the proposed public school on portions of APNs 153-091-006 and -007 in the central portion of the CASP Site. Soil conditions were described as alluvial fan deposits consisting of weakly consolidated, moderately to poorly sorted sand, silt, and gravel. Regional depth to groundwater was reported as being in excess of 50 feet based on information from nearby borings completed in 2005 and 2012. Kleinfelder concluded that the property was suitable for public school construction provided a site-specific geotechnical engineering investigation was completed.

Excerpts of the Phase II ESA reports including site plans depicting the sampling locations and associated soil analytical data summary tables are in Appendix C.

3.2 Standard Environmental Record Sources

EDR searched of Federal, State, and local databases for the CASP Site and properties/facilities in the surrounding area within one mile of the CASP Site. A copy of the report titled *The EDR Radius Map Report with GeoCheck*, dated March 24, 2017, is in Appendix D. The following table lists databases that were searched and the number of listings.

Database Name	Search Radius (Miles)	Number of Listings
FEDERAL DATABASES		
ERNS (Emergency Response Notification System)	0.125	1
STATE, LOCAL, AND TRIBAL DATABASES		
ENVIROSTOR (DTSC Electronic Database)	1.125	3
AST (Aboveground Storage Tank)	0.375	2
ADDITIONAL ENVIRONMENTAL RECORDS		
SCH (School Property Evaluation Program)	0.375	1
SWEEPS UST	0.375	2
HIST UST	0.375	3
CA FID UST (Facility Inventory Database [FID])	0.375	2
Certified Uniformed Program Agency (CUPA)	0.375	6
HAZNET (Facility and Manifest Data)	0.125	2

3.2.1 CASP Site

One onsite property is listed in the databases searched by EDR. The Settrini Ranch located at 250 Natividad Road, in the northwestern portion of the CASP Site, is listed in the HIST UST, SWEEPS UST, CA FID UST, and CUPA Listing databases. The databases list an active 1,000-gallon gasoline underground storage tank (UST). According to the CUPA Listing database, this facility is actively regulated by Monterey County for agricultural-related hazardous materials storage. The existing or former presence of a gasoline UST on this site parcel is a potential REC for the CASP Site.

The EDR Orphan Summary identifies facilities that have incomplete address information and could not be specifically plotted. The Orphan Summary lists the following three onsite properties that were investigated under the oversight of the California Department of Toxics Substance Control (DTSC) for development of public school facilities:

- Elementary School #12 (Creekbridge) – E. Boronda and Hemmingway
- Creekbridge Middle School – E. Boronda and Hemmingway
- Proposed Elementary School #5 Harrod - Northeast of E. Boronda and Natividad

Due to past and current agricultural use, each onsite property was investigated for past pesticide use and other potential contaminants of concern. For each property DTSC issued regulatory “no further action” status and granted approval for school site construction. Additional details regarding environmental investigations completed at each of these onsite properties are in Section 3.3.1.

3.2.2 Offsite Properties

The following table summarizes information regarding properties located within ¼-mile of the CASP Site that are listed on one or more of the databases searched by EDR. The summary includes the status of the listings, and the potential, if any, to impact (or to have impacted) the CASP Site.

Business	Address	Approximate Distance from the CASP Site	Database	Pertinent Information/Potential to Impact the Site
Steve and Carol Silva	804 Old Stage Road	Adjacent and north (upgradient)	HAZNET	This property is listed for disposal of 0.4 tons of pesticide waste at a transfer station. Based on the lack or reported spills or releases, this property appears unlikely to have caused an REC at the CASP Site.
Bob Swanson	808 Old Stage Road	Adjacent and north (upgradient)	HAZNET	This property is listed for disposal of 1.68 tons of asbestos-containing waste at a landfill. Based on the lack or reported spills or releases, this property appears unlikely to have caused an REC at the CASP Site.
Triangle Farms, Inc.-Bondesen Ranch	239 Natividad Road	Adjacent and west (cross-gradient)	AST, CUPA Listings	This facility is listed for a 9,200-gallon petroleum AST. According to the CUPA Listings database, this facility is regulated by Monterey County for agricultural-related hazardous material and waste storage. Based on the lack or reported releases or violations, and its cross-gradient location, this facility appears unlikely to have caused an REC at the CASP Site.
Salinas Berry Farms-Madolora	261 Natividad Road	Adjacent and west (cross-gradient)	CUPA Listings	This facility was regulated by Monterey County for agricultural-related hazardous material storage. This facility is listed as inactive. Based on the lack of reported releases or violations, and downgradient location, this former facility is unlikely to have caused an REC at the CASP Site.

The EDR Orphan Summary lists three offsite properties that were investigated under the oversight of the DTSC for development of public school facilities and one offsite property under the Clandestine Drug Lab database. Based on the type of regulatory database listings, these properties do not appear to have caused an REC at the CASP Site.

3.3 Other Environmental Record Sources

3.3.1 GeoTracker and EnviroStor

We reviewed GeoTracker and the DTSC EnviroStor (http://www.envirostor.dtsc.ca.gov/ public/) website databases for information regarding any environmental assessment, cleanup and regulatory program listings at the CASP Site parcels. The following onsite addresses are identified on GeoTracker under the Irrigated Lands Regulatory Program:

- Fernandez Brothers, Naturipe Berry Growers, Classic Farms - 250 Natividad Road
- Bay View Farms, Pacific Berry Farms, Berry Valley Braz - Natividad Road
- Triangle Farms, Inc., Christensen - 222 Natividad Road
- Classic Farms, Cordiroli Ranch – E. Boronda Road
- T-T Miyasaska Ranch, Settrini Cordiroli Ranch – E. Boronda Road

No environmental concerns are anticipated at the CASP Site parcels based on the nature of the Irrigated Lands Regulatory Program database.

Information available on the DTSC's EnviroStor website regarding environmental investigations completed for proposed public school sites within the CASP Site is summarized below:

Proposed School Site, APNs 153-091-001 and -005 - a Preliminary Environmental Assessment (PEA) report was prepared by LFR in March 2010 for a proposed school site on APNs 153-091-001 and -005 on the western portion of the CASP Site. The potential presence of persistent pesticides (and associated arsenic) was the only environmental concern identified within the proposed school site. Twenty-nine surface soil samples were collected within the agricultural field for analysis of arsenic and organochlorine pesticides. The reported arsenic and pesticide concentrations were determined to be within the acceptable risk management range. The DTSC provided a "no further action" determination and granted approval from a potential contamination assessment perspective to construct the school site.

Proposed School Site, APN 153-091-006 - a PEA report was prepared by LFR in April 2010 for a proposed school site on APN 153-091-006 on the central portion of the CASP Site. Potential environmental concerns identified at the proposed school site included agricultural-related pesticides, lead-containing associated with a historical wooden structure, and former and current fuel ASTs. Based on the results of an investigation of a nearby proposed school site (Rogge Property), an evaluation of the potential presence of NOA was determined not to be necessary. Other than the reported presence of elevated petroleum hydrocarbons in shallow soil adjacent to a diesel AST, the identified chemicals of concern were reported at concentrations within the acceptable risk management range. A "housekeeping" cleanup was completed at the diesel AST including the removal and disposal of approximately 10 tons of petroleum-hydrocarbon impacted soil. The DTSC provided a "no further action" determination and granted approval from a potential contamination assessment perspective to construct the school site.

Proposed School Site, APNs 153-091-006 and -007 - a PEA report was prepared by Kleinfelder in May 2010 for a proposed school site on APNs 153-091-006 and -007 on the central portion of the CASP Site. Potential environmental concerns identified at the proposed school site included agricultural-related pesticides, polychlorinated biphenyls (PCBs) associated with pole-mounted transformers, and sampling of shallow soil and groundwater at the onsite agricultural well. The identified chemicals of concern were reported at concentrations within the acceptable risk management range. The DTSC provided a "no further action" determination and granted approval from a potential contamination assessment perspective to construct the school site.

Excerpts of the PEA reports including site plans depicting sample locations and associated soil analytical data summary tables are in Appendix C.

3.3.2 County of Monterey Environmental Health

We requested a records search for the site parcels and addresses with the County of Monterey Environmental Health Department (CMEHD) and have not received a response as of the date of this report. Based on our review of the CASP Site and information provided by the EDR reports, we do not anticipate that CMEHD has documents relating to hazardous materials for the CASP Site. However, if documents are provided that change our findings of this report, they will be provided in an addendum letter.

3.3.3 County of Monterey Resource Management Agency

We requested building permit records for the CASP Site from the Monterey County Resources Management Agency and have not received a response as of the date of this report.

3.3.4 Monterey Bay Unified Air Pollution Control District

We requested records from the Monterey Bay Unified Air Pollution Control District (MBUAPCD) for the CASP Site. The MBUAPCD identified one record for APN 153-071-034 with an address of 21621 E. Boronda Road. The parcel owner (Creekbridge Homes) obtained a permit in 2006 to demolish twelve buildings at the parcel (Chuna Ranch) including the abatement of 120 square feet of regulated asbestos containing building materials.

3.3.5 Petroleum Pipelines

We researched online databases to provide an indication whether crude oil and/or petroleum product pipelines were located at the CASP Site. The sources researched were:

- National Pipeline Mapping System gas transmission and hazardous liquid map (https://www.npms.phmsa.dot.gov/PublicViewer/composite.jsf)
- California Office of the State Fire Marshall crude oil pipelines map (http://osfm.fire.ca.gov/pipeline/pdf/Crude20130110.pdf)

- Kinder Morgan products system map (http://www.kindermorgan.com/pages/asset_map/default.aspx)

No petroleum pipelines were depicted beneath the CASP Site on the maps.

4.0 HISTORICAL USE

Historical use of the CASP Site and adjacent properties was evaluated through review of historical aerial photographs, historical topographic maps, and city directories provided by EDR. This section summarizes the information obtained from these sources.

4.1 Aerial Photographs

We reviewed historical aerial photographs for the years 1956, 1968, 1971, 1981, 1987, 1998, 2005, 2009, 2010, and 2012 (Appendix E) for indications of past land uses that had the potential to have impacted the CASP Site through the use, storage or disposal of hazardous substances and/or petroleum. The following table summarizes observations of the CASP Site and adjacent properties on the aerial photographs.

Year	Observations	
	CASP Site	**Adjacent Properties**
1956-1987 (1” = 1,000’)	Agricultural fields (row crops) were present on the majority of the CASP Site. Three residential/agricultural building areas were in the western portion of the CASP Site and another cluster of agricultural-related buildings were in the southeastern portion (most not present in 1987 photo). Transmission towers are visible across the central portion of the CASP Site with an associated substation at the north-central portion of the CASP Site.	Agricultural fields and related rural residential and farm buildings were on adjacent properties.
1998 (1” = 500’)	Conditions were similar to those observed on the 1987 photograph with the exception of onsite residential structures on the southern portion of the CASP Site.	Conditions were similar to those observed on the 1987 photograph with the exception of residential subdivision development and a high school south of E. Boronda Road.
2005, 2009, 2010 and 2012 (1” = 500’)	Conditions were similar to those observed on the 1998 photograph with the exception of commercial development on the southwestern portion of the CASP Site north of the high school.	Conditions were similar to those observed on the 2005 photograph.

Row crops were present on the CASP Site from at least 1956 to the present. The agricultural use of the CASP Site dating back to at least 1956 suggests that persistent organochlorine pesticides (OCPs) and associated elevated arsenic concentrations exceeding residential screaming levels (for OLPs) naturally occurring background levels (for arsenic) may be present in shallow soil. No other land uses that would suggest the presence of RECs were observed on the CASP Site or adjacent properties in the aerial photographs.

4.2 Topographic Maps

We reviewed historical topographic maps for the years 1910, 1912, 1940, 1947, 1950, 1968, and 1984 (Appendix F). The following table summarizes the observations of the CASP Site and adjacent properties on the historical topographic maps.

Year	Observations	
	CASP Site	**Adjacent and Vicinity Properties**
1910 (1: 31,680)	Gabilan and Natividad Creeks are depicted on the CASP Site. One or two rural residential structures and an unimproved road are depicted in the northwestern portion of the CASP Site.	Natividad Road and Old Stage Roads in addition to unimproved roads are depicted adjacent to the CASP Site. Natividad is depicted north of the eastern portion of the CASP Site.
1912 (1: 62,500)	Similar to the 1910 map.	Similar to the 1910 map, Salinas depicted southwest of the CASP Site.
1940 (1: 62,500)	Additional structures are depicted on the western portion of the CASP Site and a transmission line across the central portion.	Similar to the 1912 map with additional development in Salinas.
1947 and 1950 (1:62,500, 1:24,000, and 1:25,000)	An electrical substation is depicted along the north-central portion of the CASP Site. Additional agricultural-related structures are depicted on the western and southeastern portions of the CASP Site in addition to unimproved roads.	Similar to the 1940 map.
1968 and 1984 (1:24,000)	Similar to the 1950 map with an additional residential structure on the western portion of the CASP Site.	Similar to the 1950 map with residential development southeast of the intersection of Natividad and E. Boronda Roads.

The topographic maps do not depict any other land uses that would suggest the presence of RECs on the CASP Site or adjacent properties.

4.3 City Directories

EDR prepared an abstract of city directories including city, cross reference and telephone directory listings (Appendix G). EDR included information from directories at approximate five-year intervals, if available, from 1960 to 2013. The following CASP Site parcel addresses are listed with the following ownership/tenants:

- 2003 and 2008: 21025 E. Boronda Road - Thrust IV
- 1995 and 2003: 21621 E. Boronda Road - Johnny Cunha, and Mary Cunha
- 1995 and 2003: 21673 E. Boronda Road – Jose Chavez, FR Yanez, Gloria Zamora, Gracey Serrato, Inocencia Martinez, and Teresa Salazar

None of the listings suggest the storage or use of hazardous substances or petroleum on the CASP Site.

5.0 SITE RECONNAISSANCE

This section summarizes observations of the CASP Site and surrounding properties made during the site reconnaissance.

5.1 Methodology and Limiting Conditions

John Juhrend, Senior Engineer with Geocon, performed a site reconnaissance on April 20, 2017. Mr. Juhrend met with Hugh Walker with Thrust IV who provided owner permission and access instructions for the CASP Site with the exception of APNs 211-013-003, -007 and -008. These parcels located in the northwestern portion of the CASP Site are not currently annexed into the City of Salinas and the parcel owners did not provide authorization to enter.

Mr. Juhrend performed the site reconnaissance by driving and walking to observe site features and conditions. The offsite survey was performed by making observations of adjacent properties from the CASP Site and public roads. Weather on the day of the site reconnaissance was clear with temperatures in the 70s°F. Photos of various site features and offsite properties are attached.

5.2 Site Setting

The CASP Site consists predominantly of agricultural land with residential and agricultural buildings on the western portion. Unimproved roads provide access to the onsite agricultural fields and structures. Pole-mounted electrical transformers were noted adjacent to several of the interior roads with no visible indicators of leakage.
The CASP Site is bordered by similar agricultural properties to the west (across Natividad Road) and north, undeveloped grazing land to the east across Old Stage Road, and residential subdivisions and a high school to the south across E. Boronda Road.

5.3 Onsite Survey

The following descriptions are based on observations of the 17 parcels that comprise the 760.4-acre CASP Site. Ownership names in parentheses were obtained from the CASP Site development plan (Appendix B).

5.3.1 APN 211-013-007 (Avila)

We were not granted permission to enter this 0.51-acre residential parcel located adjacent to Natividad Road.

5.3.2 APNs 211-013-003 and -008 (Settrini)

We were not granted permission to enter these two parcels totaling 84.6 acres in the northwestern portion of the CASP Site. An agricultural well and fertilizer tanks were observed at the southwestern corner of these parcels (Photo No. 1). The vast majority of these parcels consist of agricultural fields (strawberries). The central portion of the parcels contains two rural residences and agricultural-related buildings and equipment yard.

5.3.3 APNs 153-091-001 and -005 (Christensen)

These two parcels totaling 149.6 acres comprise the southwestern portion of the CASP Site. The vast majority of the parcels consist of agricultural fields (lettuce, raspberries and recently tilled), a ranch compound and newer rural residence (Photo Nos. 2 through 8). The ranch compound contains an older unoccupied residence and detached garage, and equipment buildings. Fertilizer ASTs, and fuel dispensers associated with a gasoline UST, and gasoline and diesel ASTs were observed on the eastern portion of the ranch compound. No significant surface staining was noted in these areas. Agricultural and domestic wells are located on these parcels.

5.3.4 APN 211-013-004 (Gladstone Farms)

This 25.39- acre parcel located on the north-central portion of the CASP Site consists of recently tilled and fallow agricultural fields. An agricultural well and a fenced former electrical substation and associated transmission towers are located on the southern portion of the parcel (Photo Nos. 9 and 10).

5.3.5 APN 153-091-006 (Probert and Codiroli)

This 214.62-acre parcel consists of agricultural fields (broccoli, recently tilled and fallow strawberries). An equipment yard located on the central western portion of the parcel contains a diesel AST with steel secondary containment on a concrete slab (Photo No. 11). Electrical transmission towers cross the western portion of this parcel (Photo No. 12).

5.3.6 APN 153-091-003 (Larry Noon)

This 9.0-acre undeveloped parcel is located on the southwestern portion of the CASP Site along E. Boronda Road and across from the high school. The parcel contains an asphalt-paved driveway and parking lot accessed from E. Boronda Road (Photo No. 13). The remainder of the parcel consists of overgrown fields containing inert debris piles, burned debris and evidence of former building improvements (landscape nursery).

5.3.7 APNs 153-071-011, -034, -035, and -036 (ATC Reality Sixteen LLC)

These parcels totaling 37.6 acres comprise the southeastern portion of the CASP Site. Parcels 153-071-034 and -035 contain evidence of former rural residential development including unpaved access drives, debris piles and a domestic well (Photo No. 14). The remainder of the parcels consists of fallow former agricultural fields (Photo No. 15).

5.3.8 APN 153-101-005 (Helmers)

This 19.34-acre parcel consists of fallow former agricultural fields.

5.3.9 APNs 153-091-007, -008, -009 and -010 (Matsui)

These parcels totaling 219.74 acres consist of agricultural fields (strawberries and broccoli) comprising the eastern portion of the CASP Site. Three agricultural equipment yards are located on the parcels (Photo No. 16). The central equipment yard contains fuel and oil ASTs and drums (Photo Nos. 17 and 18). Relatively minor surface staining was noted in these areas.

5.4 Offsite Survey

Adjacent properties consist of the following:

North: Similar agricultural fields and rural residential development (Photo No. 19).

East: Undeveloped grazing land northeast of Old Stage Road (Photo No. 20).

South: Residential subdivisions and high school south of E. Boronda Road (Photo No. 21).

West: Agricultural land west of Natividad Road (Photo No. 22).

No evidence of RECs was observed on the properties adjacent to CASP Site.

6.0 INTERVIEWS

We interviewed Bill Tarp who farms the western portion of the CASP Site including APNs 153-091-001 and -005 (western parcels). Mr. Tarp has been farming the western parcels since 2007 including strawberries, raspberries and lettuce. As far as Mr. Tarp knows, the western parcels were initially developed as a farm and has not had any other industrial or commercial uses. Mr. Tarp did confirm that APN 153-091-003 located adjacent and south of the western parcels was previously occupied by a landscape nursery for the Creekbridge master-planned community located south of E. Boronda Road. According to Mr. Tarp, the western parcels contain three agricultural wells and one domestic well. The ranch compound on APN 153-091-001 contains active fertilizer ASTs, and a gasoline UST and gasoline and diesel ASTs that are inactive. Current onsite refueling is performed using portable tanks. There is no known use of Transite™ or other asbestos-containing pipe at the western parcels; irrigation pipe is high-pressure plastic. There has been no unauthorized waste dumping at the western parcels. Mr. Tarp stated that registered pesticide application is performed by outside companies, including The Dune Company of Salinas and NH3 Services Company, Inc. Pesticides are not mixed at the western parcels. Mr. Tarp is not aware of any environmental liens, land use limitations, environmental regulatory actions or environmental cleanups at the western parcels.

We interviewed Pancho Torres who farms the central portion of the CASP Site consisting of parcel 153-091-006 (central parcel). Mr. Torres has been farming the central parcel since approximately 1984 for strawberries and other row crops. He did not recall any buildings present on the central parcel. Mr. Torres stated that the adjacent parcels to the south were previously operated as a dairy and all the buildings subsequently demolished. He recalled that transformers were located at the fenced electrical substation located on the adjacent parcel to the north. According to Mr. Torres, the central parcel contains two agricultural wells. No USTs are located on the central parcel. There is no known use of Transite™ or other asbestos-containing pipe at the western parcels; irrigation pipe is plastic. There has been no unauthorized waste dumping at the central parcel. Mr. Torres stated that pesticide application is performed using spray tractors. Mr. Torres is not aware of any environmental liens, land use limitations, environmental regulatory actions or environmental cleanups at the central parcel.

We also interviewed Adrian Mendoza who farms the eastern portion of the CASP Site including APNs 153-091-007, -008, -009 and -010 (eastern parcels). Mr. Mendoza has been farming the eastern parcels since approximately 2002 for strawberries and other row crops. According to Mr. Mendoza, the eastern parcels contain one agricultural well. No USTs are located on the eastern parcels. There is no known use of Transite™ or other asbestos-containing pipe at the western parcels; irrigation pipe is plastic. There has been no unauthorized waste dumping at the eastern parcels. Mr. Mendoza stated that pesticide application is performed using spray tractors. Mr. Mendoza is not aware of any environmental liens, land use limitations, environmental regulatory actions or environmental cleanups at the eastern parcels.

7.0 SUMMARY OF PHASE I ESA FINDINGS

We have performed a Phase I ESA of the CASP Site in general conformance with the scope and limitations of ASTM *Designation E 1527-13*. Exceptions to, or deletions from, this practice are described in Section 1.3 of this report.

The vast majority of the CASP Site is agricultural land used for row crops (strawberries, lettuce, raspberries, broccoli, etc.). Residential and agricultural-related buildings are located on the western portion of the CASP Site. Agricultural equipment yards are located in the general vicinity of the buildings and throughout the remainder of the CASP Site. The agricultural buildings and equipment yards are utilized to support the agricultural operations and have been or are currently being used to temporarily store fertilizers, pesticides, diesel fuel, gasoline, waste oil, and other materials normally associated with ongoing agricultural cultivation.

Due to the long-term use of the land for agricultural purposes, the CASP Site has the potential for certain environmental conditions related to pesticide application that could have caused these chemicals to be present in the soil. However, the results of environmental site investigations completed for three proposed school sites in the western and central portions of the CASP Site under oversight of the DTSC did not encounter pesticide levels in shallow soil above regulatory screening levels.

The Phase I ESA has identified the following potential environmental concerns in connection with the CASP Site:

- Current and historical use of the Site as agricultural lands and application of pesticides may have had impacted site soils with residual OCPs and associated elevated arsenic concentrations.
- Soil in the area of the residences and structures used to support the agricultural operations may be negatively impacted by metals (specifically lead from lead-based paint on older buildings); OCPs from termiticide application; and PCBs from window caulking or glazing in old buildings.
- The onsite structures may contain asbestos-containing building materials and lead-containing paint.
- A gasoline UST is registered for the Settrini Ranch at 250 Natividad Road (APN 211-013-003 or -008). A gasoline UST was further observed at the ranch compound on APN 153-091-001 in addition to gasoline and diesel ASTs. A diesel AST was observed on APN 153-091-006. Diesel and oil ASTs and drums were further observed on APN 153-091-010.
- Soil in the vicinity of the former electrical substation on APN 211-013-004 may contain PCBs associated with former transformers.

8.0 LIMITED PHASE II ESA

We conducted a Limited Phase II ESA to evaluate the potential presence of OCPs and arsenic (chemicals of potential concern, COPCs) in shallow onsite soil due to the historic agricultural use of the CASP Site. The Limited Phase II ESA included analysis of surface soil samples from agricultural fields throughout the CASP Site.

8.1 Field Investigation

On April 20, 2017, we collected surface soil samples SS1 through SS18 at the CASP Site at the locations depicted on Figure 2. The soil samples were collected using pre-cleaned stainless steel trowels, placed in new laboratory-provided glass jars that were labeled with the sample identification number, collection time, and date. Each sample was placed into a chilled cooler for transport under chain-of-custody protocol to Advanced Technology Laboratories (ATL) of Signal Hill, California. No soil discoloration, “chemical” odor, or other obvious indication of apparent contamination was observed during the filed sampling activities.

8.2 Laboratory Analysis and Results

ATL analyzed the soil samples for arsenic by United States Environmental Protection Agency (USEPA) Test Method 6010B and OCPs by USEPA Test Method 8081. The laboratory analytical results are summarized below and in Table 1. A copy of the ATL analytical report is in Appendix H.

- Arsenic was detected in each of the soil samples at concentrations ranging from 1.6 to 3.4 milligrams per kilogram (mg/kg).

- 4,4´-DDE was detected in 10 of 18 soil samples at concentrations ranging from of 0.0042 to 0.073 mg/kg.
- 4,4´-DDT was detected in 7 of 18 soil samples at concentrations ranging from 0.0038 to 0.024 mg/kg.
- Dieldrin was detected in 4 of 18 soil samples at concentrations ranging from 0.002 to 0.009 mg/kg.
- Toxaphene was detected in 3 of 18 soil samples at concentrations ranging from 0.065 to 0.25 mg/kg.

8.3 Findings of the Limited Phase II ESA

The reported arsenic concentrations exceed DTSC's Health and Ecological Risk Office (HERO) Note #3, DTSC-Modified Screening Level (June 2016) for arsenic of 0.11 mg/kg. However, because of arsenic's natural occurrence in soil, it is typically compared to local, regional, or statewide "background" concentration data. DTSC typically uses a concentration of 12 mg/kg as an upper-bound background concentration although naturally occurring background concentrations can exceed this level depending on the mineralogy of the soils parent material. The reported arsenic concentrations are within the range of naturally occurring background for arsenic in California.

OCPs were not detected in any of the soil samples at concentrations that exceed the USEPA Regional Screening Levels (RSLs) for residential land use in any of the soil samples. Based on the soil sample analytical data for arsenic and OCPs, no further assessment of soil in the agricultural fields for these COPCs appears to be warranted.

9.0 CONCLUSIONS AND RECOMENDATIONS

We have performed a Phase I ESA for the CASP Site in general conformance with the scope and limitations of ASTM E 1527-13. We also performed a Limited Phase II ESA to evaluate the potential presence of elevated pesticides and associated arsenic. The results of the Geohazards Study confirms the CASP Site is suitable for planned development provided the recommendations provided in site-specific geotechnical investigations are followed.

The results of our Limited Phase II ESA show that residual OCP concentrations are present in the onsite shallow soils, but at concentrations less than USEPA residential RSLs. Reported arsenic concentrations are within the range of naturally occurring background levels. Additional assessment of soil in the Site's agricultural fields for OCPs and arsenic does not appear to be warranted at this time.

If an when access is provided, observations and a screening level Phase II ESA soil sampling and analytical testing should be completed for APNs 211-013-003, -007 and -008.

The two known gasoline USTs located on APNs 211-013-003 or -008 (Settrini) and APN 143-091-001 (Christensen) will require proper removal in accordance with Monterey County permit requirements prior to planned development. Unused fuel and oil ASTs and containers located in the vicinity of the agricultural buildings and equipment yards should be properly removed and recycled or disposed of. Any associated petroleum hydrocarbon subsurface impacts associated with the USTs, ASTs and fuel and oil containers/storage areas may require mitigation based on the proposed development land use.

PCB-related soil impacts may exist at the fenced former substation located on the southern portion of APN 211-013-004. Either documentation of completed investigations/mitigation or current soil sampling and analytical testing will be required to determine if subsurface impacts require further assessment or remediation prior to planned development.

Depending on the anticipated future use of the CASP Site parcels, evaluation of the soil around the agricultural operations support buildings (residences, warehouses, barns, etc.) for lead and termiticides should be considered before they are demolished or around the perimeters of the foundations if structures have already been removed. Additionally, based on the age of these structures, it is possible that asbestos-containing materials and/or lead-containing paint are present in the building materials. An asbestos-containing materials and lead-containing paint survey should be completed prior to demolition of the site structures.

Any unused agricultural and domestic wells at the CASP Site will require proper abandonment per Monterey County permit requirements prior to planned development.

Any undocumented subsurface features encountered during development-related construction excavations including USTs, wells, sumps, septic systems, asbestos-containing pipe, debris dumps, treated wood waste, etc., will require proper removal in accordance with any applicable regulatory permit requirements.

10.0 LIMITATIONS AND EXCEPTIONS

This report was prepared for the De Novo Planning Group and the City of Salinas. Geocon-authorized users of this report are limited to the De Novo Planning Group, the City of Salinas, and individuals or organizations deemed appropriate by them.

Users of this report should understand that this project was not a comprehensive characterization of the CASP Site with respect to all media or all chemicals. The Limited Phase II ESA was limited to the specified COPCs for this project and the specific areas identified in this report. The potential exists that areas of the CASP Site have been impacted by the same or other COPCs at concentrations that could require additional investigation to characterize or mitigate.

We do not guarantee or warranty, either express or implied, that there is no environmental, health, or financial risk associated with the specific areas identified in this report, other areas of the CASP Site, or the CASP Site as a whole. Users of this report must evaluate the risk of reliance upon the information herein and assume that risk (if any). Geocon is not responsible for unfavorable results due to reliance on information provided in this report.

Information herein with respect to the condition of the specific areas associated with this project is valid only as of the dates of our field activities. Changes in site conditions not brought to our attention between or subsequent to those dates (if any) could result in the need for additional characterization investigation and/or mitigation activities.

Information in this report and our conclusions and recommendations are based on our site observations, review of the specified regulatory records, and analytical test results of site soil samples for the COPCs identified herein. We do not certify or guarantee that the information obtained and reported by others is accurate or suitable for the intended purpose.

The authors of this report declare that, to the best of their knowledge, the information provided herein is truthful and accurate, notwithstanding unknown incidental errors or omissions that would not materially impact or change results of this project or our conclusions. We strived to conduct activities for this project in accordance with the standard level of care in the local geographic area at the time the activities were rendered.

11.0 REFERENCES

California State Water Resources Board. GeoTracker, April 2017. <http://geotracker.swrcb.ca.gov/>.

State of California Department of Conservation, Division of Oil, Gas & Geothermal Resources – DOGGR Home Page, http://www.conservation.ca.gov/dog/Pages/Index.aspx, April 2017.

State of California, Department of Toxic Substances Control, EnviroStor website (http://www.envirostor.dtsc.ca.gov/public/, April 2017.

United States Department of Agriculture, Natural Resources Conservation Service, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, April 2017.

American Society for Testing and Materials. *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. 2013.

California Geological Survey. Geologic Map of the Monterey 30'x60' quadrangle and adjacent areas, California, Regional Geologic Map No. 1, 2002.

United States Geological Survey. Natividad, California, 7.5-minute Topographic Map. 1984.

12.0 QUALIFICATIONS

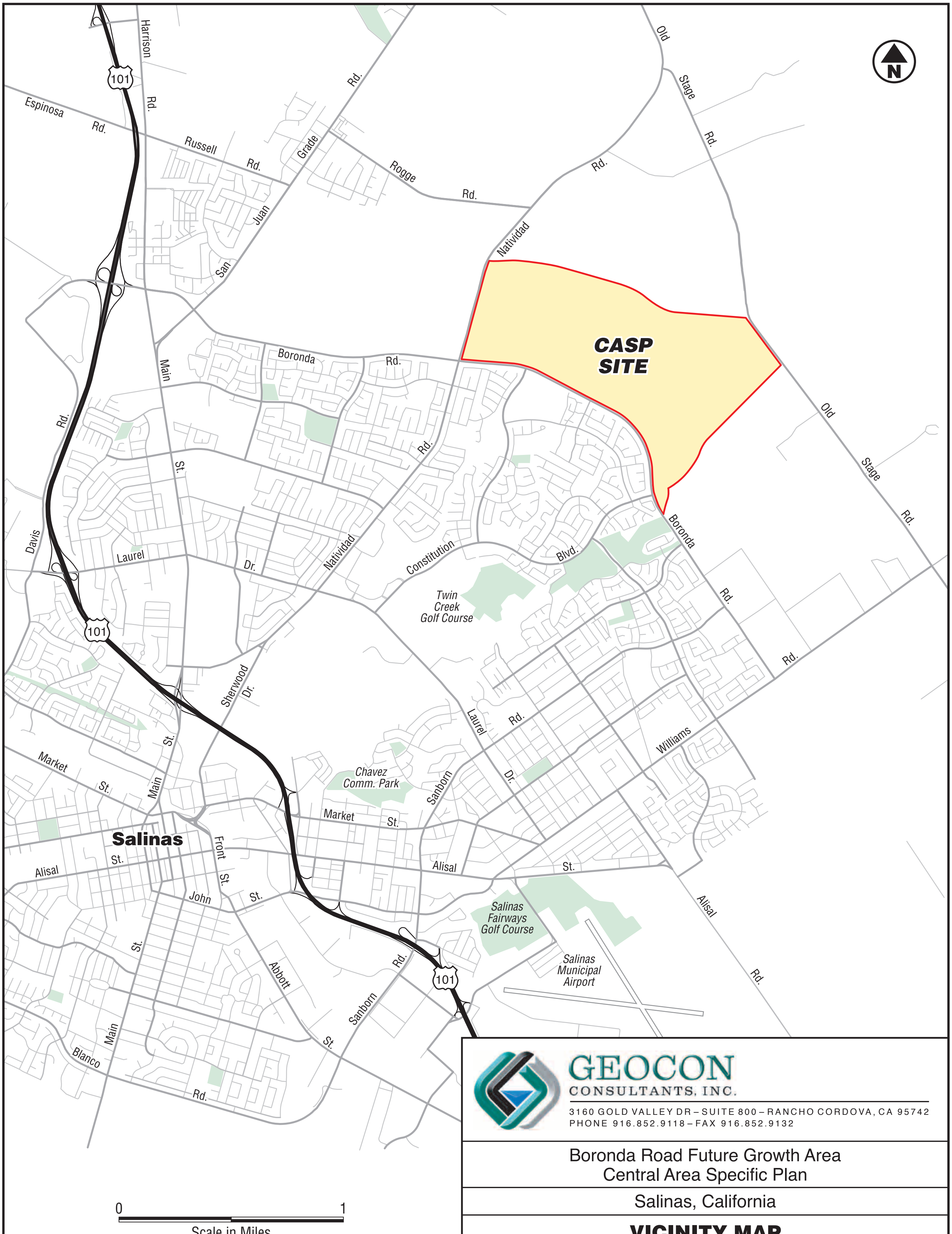
This Phase I and II ESA and Geohazards Study was prepared by Mr. John Juhrend, PE, CEG and reviewed by Mr. Jim Brake, PG. Mr. Juhrend has over 30 years of experience in the environmental and geotechnical consulting industry in California and Nevada. Mr. Juhrend is a California Professional Engineer and Certified Engineering Geologist, with a BS degree in engineering geology and MS degree in civil engineering. His personal experience includes the performance of hundreds of environmental projects including Phase I and Phase II site assessments, remedial investigations and feasibility studies, corrective action programs and litigation support. His primary expertise includes environmental assessments of transportation corridors, Brownfields properties, and agricultural, industrial, commercial and residential properties.

Mr. Brake has an MS degree in Geological Science and 30 years of experience in environmental investigation and remediation, including implementation of Remedial Investigation/Feasibility Study programs and soil and groundwater remedial actions for private industrial and government clients. He has managed a wide variety of projects for clients in the manufacturing, transportation, mining, automobile and real estate industries including Environmental Protection Agency and DTSC Superfund sites. Mr. Brake has extensive experience in the performance of Phase I and II ESAs of commercial, industrial, and agricultural properties throughout Northern California.

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in §312.10 of 40 CFR 312 and have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries investigation in general conformance with the standards and practices set forth in 40 CFR Part 312.

John E. Juhrend, PE, CEG
Senior Engineer

Jim Brake, PG
Senior Geologist



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Central Area Specific Plan

Salinas, California

VICINITY MAP

S1049-03-01	May 2017	Figure 1

LEGEND:

SS1 Approximate Surface Soil Sample Location (Sample Depth 0 to 6 inches)

153-091-009 Monterey County Assessor Parcel Number

40.09 Ac. Approximate Acreage of Parcel

Parcel Boundary

Central Area Specific Plan Boundary (Approximate)

0 800
Scale in Feet

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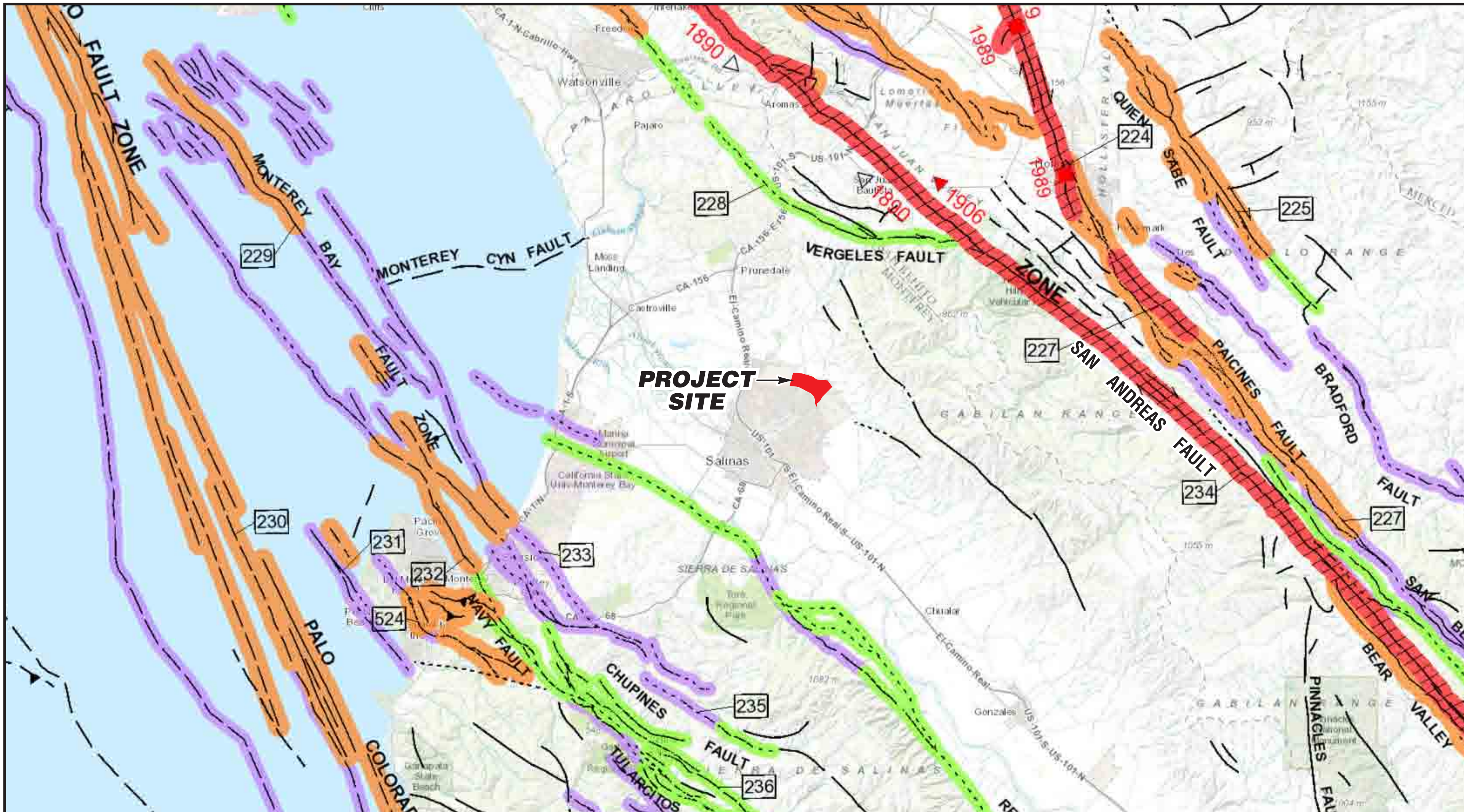
SITE PLAN

S1049-03-01	May 2017	Figure 2



Source: 2010 Fault Activity Map of California, California Geological Survey, Geologic Data Map No. 6

LEGEND:

- Fault with historic activity (within past 200 years)
- Fault with Holocene activity (within past 11,700 years)
- Fault with Late Quaternary activity (within past 700,000 years)
- Quaternary Fault (activity within past 1.6 million years)
- Pre-Quaternary Fault (no evidence of Quaternary activity)

N

0 10
Scale in Miles

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Regional Fault Map

S1049-03-01	May 2017	Figure 3

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS AND SCREENING LEVELS
ARSENIC AND ORGANOCHLORINE PESTICIDES
BORONDA ROAD FUTURE GROWTH AREA - CENTRAL AREA SPECIFIC PLAN
SALINAS, CALIFORNIA

			Arsenic	4,4´-DDD	4,4´-DDE	4,4´-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Screening Levels[1] (milligrams per kilogram, mg/kg)			0.11*	2.3	2.0	1.9	0.039	0.086	NE	0.3	0.44	NE	0.034	470	470	NE	19	NE	NE	0.57	NE	0.13	0.07	320	0.49
RSL		Residential	0.68	2.3	2.0	1.9	0.039	0.086	NE	0.3	1.7	NE	0.034	470	470	NE	19	NE	NE	0.57	NE	0.13	0.07	320	0.49
DTSC HERO Note #3		Residential	0.11	NE	NE	NE	NE	NE	NE	NE	0.44	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Sample ID	Sample Date	Sample Depth (feet)	Results reported in milligrams per kilogram (mg/kg)																						
SS1	4/20/2017	0-0.5	**2.3**	<0.002	0.0044	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS2	4/20/2017	0-0.5	**2.0**	<0.002	0.073	0.018	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS3	4/20/2017	0-0.5	**1.9**	<0.002	0.069	0.013	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS4	4/20/2017	0-0.5	**3.2**	<0.002	0.0053	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS5	4/20/2017	0-0.5	**2.9**	<0.002	0.027	0.024	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0025	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	0.067
SS6	4/20/2017	0-0.5	**2.0**	<0.002	0.041	0.011	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0066	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	0.065
SS7	4/20/2017	0-0.5	**2.0**	<0.002	0.015	0.0038	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS8	4/20/2017	0-0.5	**1.9**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS9	4/20/2017	0-0.5	**1.6**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS10	4/20/2017	0-0.5	**2.3**	<0.002	0.069	0.023	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.009	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	0.250
SS11	4/20/2017	0-0.5	**1.7**	<0.002	0.0042	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS12	4/20/2017	0-0.5	**3.4**	<0.002	0.019	0.0063	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS13	4/20/2017	0-0.5	**1.8**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS14	4/20/2017	0-0.5	**1.7**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS15	4/20/2017	0-0.5	**2.0**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS16	4/20/2017	0-0.5	**2.5**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS17	4/20/2017	0-0.5	**2.6**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
SS18	4/20/2017	0-0.5	**2.3**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050

Notes:

[1]U.S. Environmental Protection Agency Regional Screening Level (RSL) Summary Table, May 2016.
DTSC's Human Health Risk Assessment Note #3, DTSC-Modified Screening Levels, June 2016.
The more conservative (i.e. lower) screening level concentration is used.

*	Naturally occurring concentrations of arsenic in soil in the region can be as high as 12 mg/kg
NE	Not established
<	Less than the laboratory reporting limit
BOLD	Value exceeds screening level

Photo No. 1   APN 211-013-003 – Agricultural well and strawberry fields

Photo No. 2   APN 153-091-001 – Ranch compound and tilled fields

PHOTOS NO. 1 & 2

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Central Area Specific Plan

Salinas, California

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Photo No. 3 APN 153-091-001 – Fertilizer storage tanks

Photo No. 4 APN 153-091-001 – Abandoned underground and aboveground storage tanks

PHOTOS NO. 3 & 4

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Photo No. 5 APN 153-091-001 – Abandoned fuel aboveground storage tank

Photo No. 6 APN 153-091-001 – Raspberry fields

PHOTOS NO. 5 & 6

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Photo No. 7   APN 153-091-005 – Lettuce fields

Photo No. 8   APN 153-091-005 Rural Residence

PHOTOS NO. 7 & 8

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Photo No. 9   APN 211-013-004 – Agricultural well and tilled fields

Photo No. 10   APN 211-013-004 – Electrical transmission fenced compound

PHOTOS NO. 9 & 10

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Photo No. 11 APN 153-091-012 – Diesel aboveground storage tank

Photo No. 12 APN 153-091-012 – Tilled fields and transmission towers

PHOTOS NO. 11 & 12

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Photo No. 13   APN 153-091-003 – Vacant former landscaping nursery

Photo No. 14   APNs 153-071-034 and -035 – Former rural residential parcels

PHOTOS NO. 13 & 14

Photo No. 15 APNs 153-071-035, -036 and -011 – Fallow former agricultural fields

Photo No. 16 APN 153-091-007 – Strawberry fields and agricultural equipment yard

PHOTOS NO. 15 & 16

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Photo No. 17 APN 153-091-010 – Agricultural equipment yard

Photo No. 18 APN 153-091-010 – Fuel and oil drums/tanks

PHOTOS NO. 17 & 18

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Photo No. 19 Agricultural fields north of Site

Photo No. 20 Rangeland east of Site across Old Stage Road

PHOTOS NO. 19 & 20

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Photo No. 21 Residential development and high school south of Site across East Boronda Road

Photo No. 22 Agricultural fields west of Site across Natividad Road

PHOTOS NO. 21 & 22

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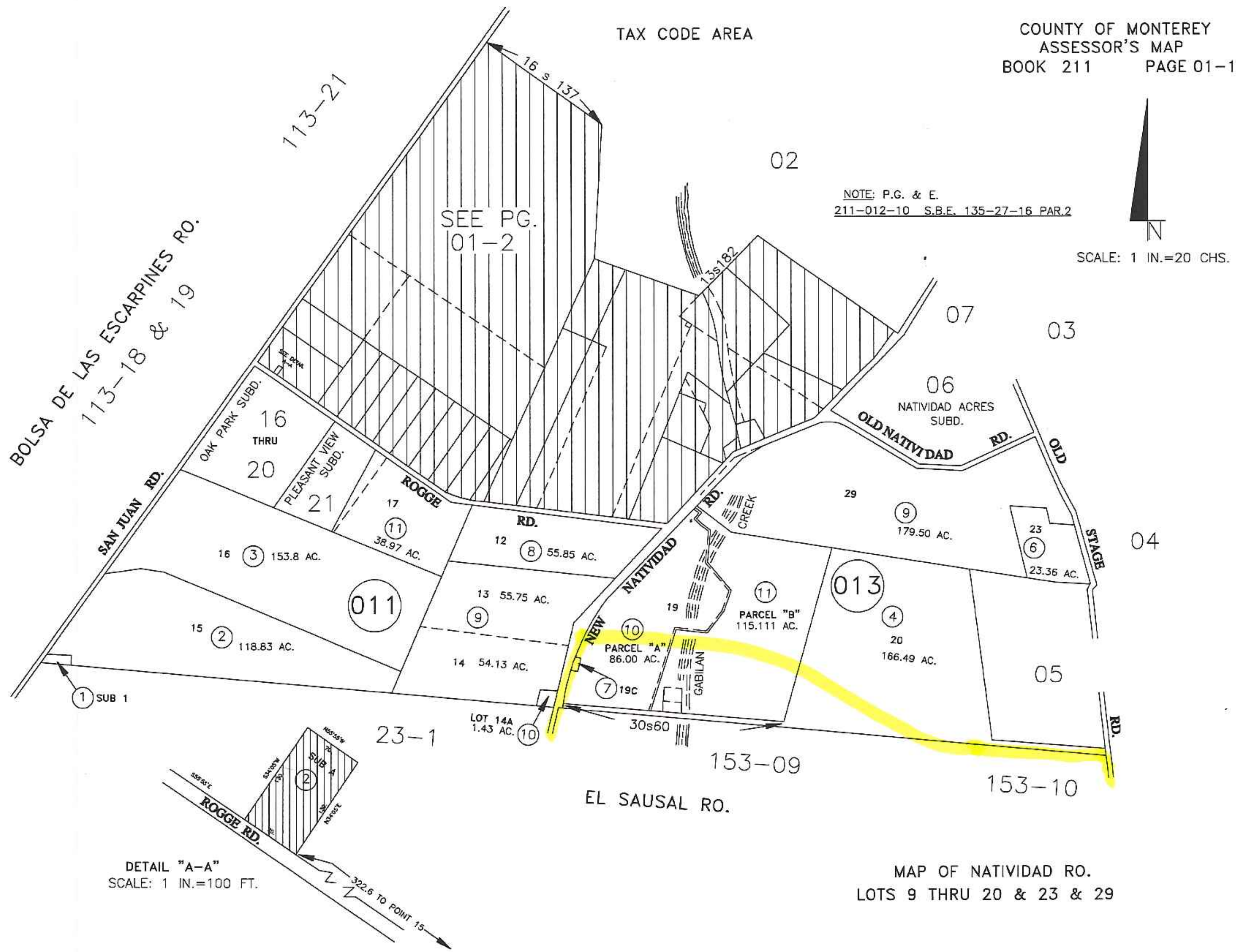
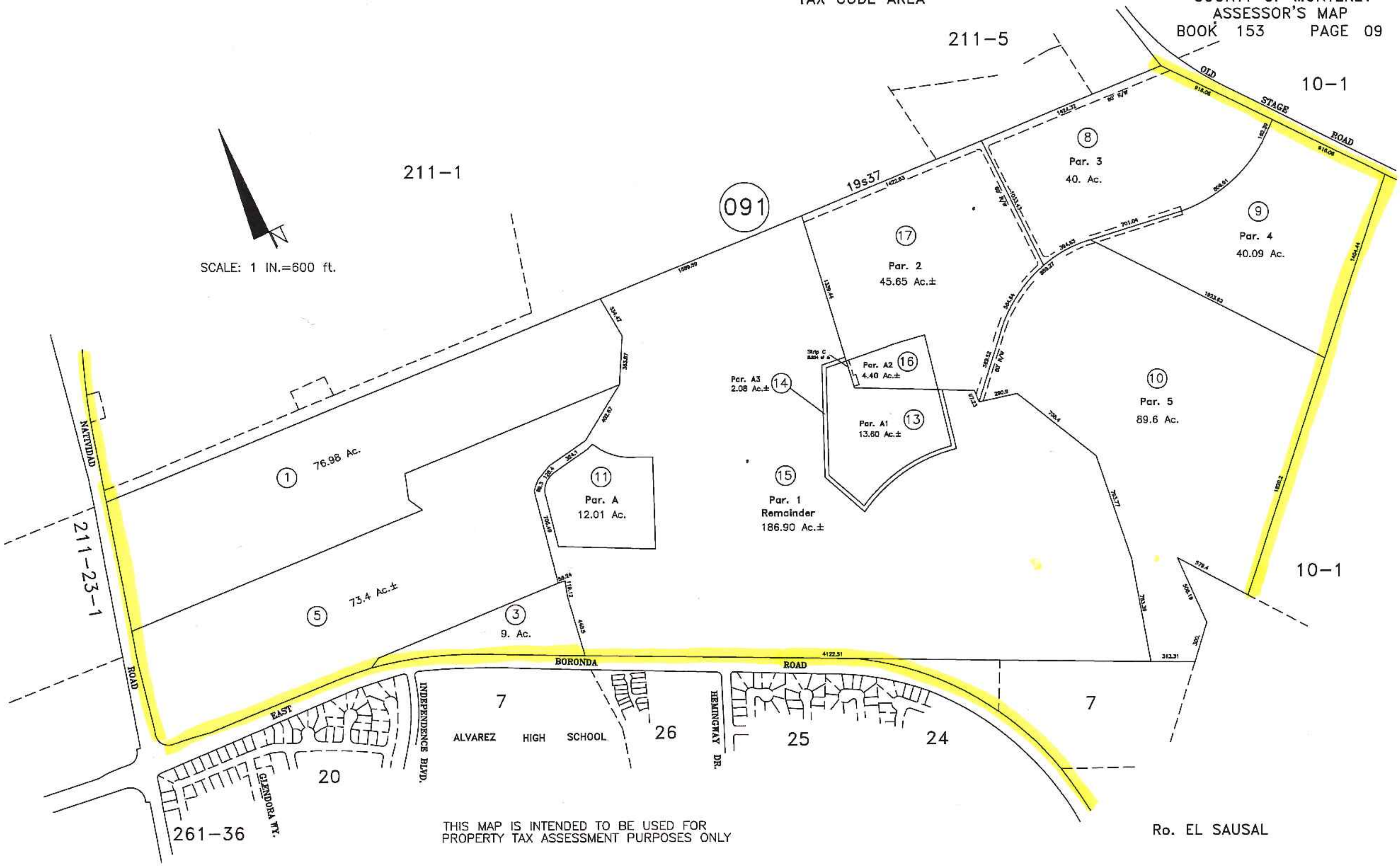
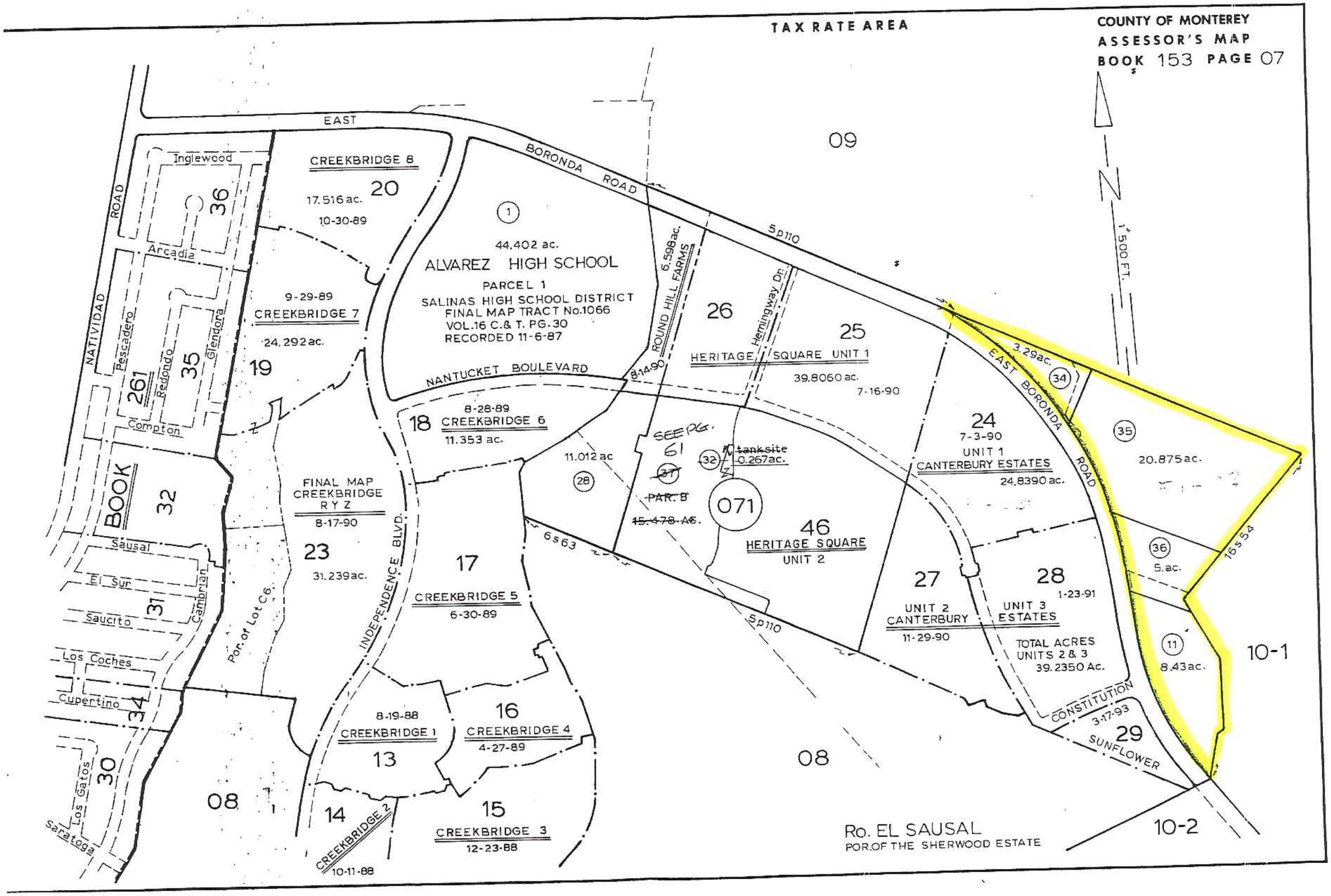
APPENDIX A


COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 211 PAGE 01-1
N
SCALE: 1 IN.=20 CHS.
TAX CODE AREA
NOTE: P.G. & E.
211-012-10 S.B.E. 135-27-16 PAR.2
02
07
03
06
NATIVIDAD ACRES
SUBD.
04
05
113-21
BOLSA DE LAS ESCARPINES RO.
113-18 & 19
16 s 137
SEE PG.
01-2
13s182
OLD NATIVIDAD RD.
OLD STAGE RD.
NEW NATIVIDAD RD.
ROGGE RD.
SAN JUAN RD.
OAK PARK SUBD.
16
THRU
20
PLEASANT VIEW
SUBD.
21
17
11
38.97 AC.
12
8
55.85 AC.
13
55.75 AC.
9
14
54.13 AC.
16
3
153.8 AC.
15
2
118.83 AC.
011
1
SUB 1
29
9
179.50 AC.
23
6
23.36 AC.
013
4
20
166.49 AC.
11
PARCEL "B"
115.111 AC.
19
10
PARCEL "A"
86.00 AC.
7
19C
CREEK
GABILAN
30s60
LOT 14A
1.43 AC.
10
23-1
153-09
153-10
EL SAUSAL RO.
SUB A
2
ROGGE RD.
322.6 TO POINT 15
DETAIL "A-A"
SCALE: 1 IN.=100 FT.
MAP OF NATIVIDAD RO.
LOTS 9 THRU 20 & 23 & 29

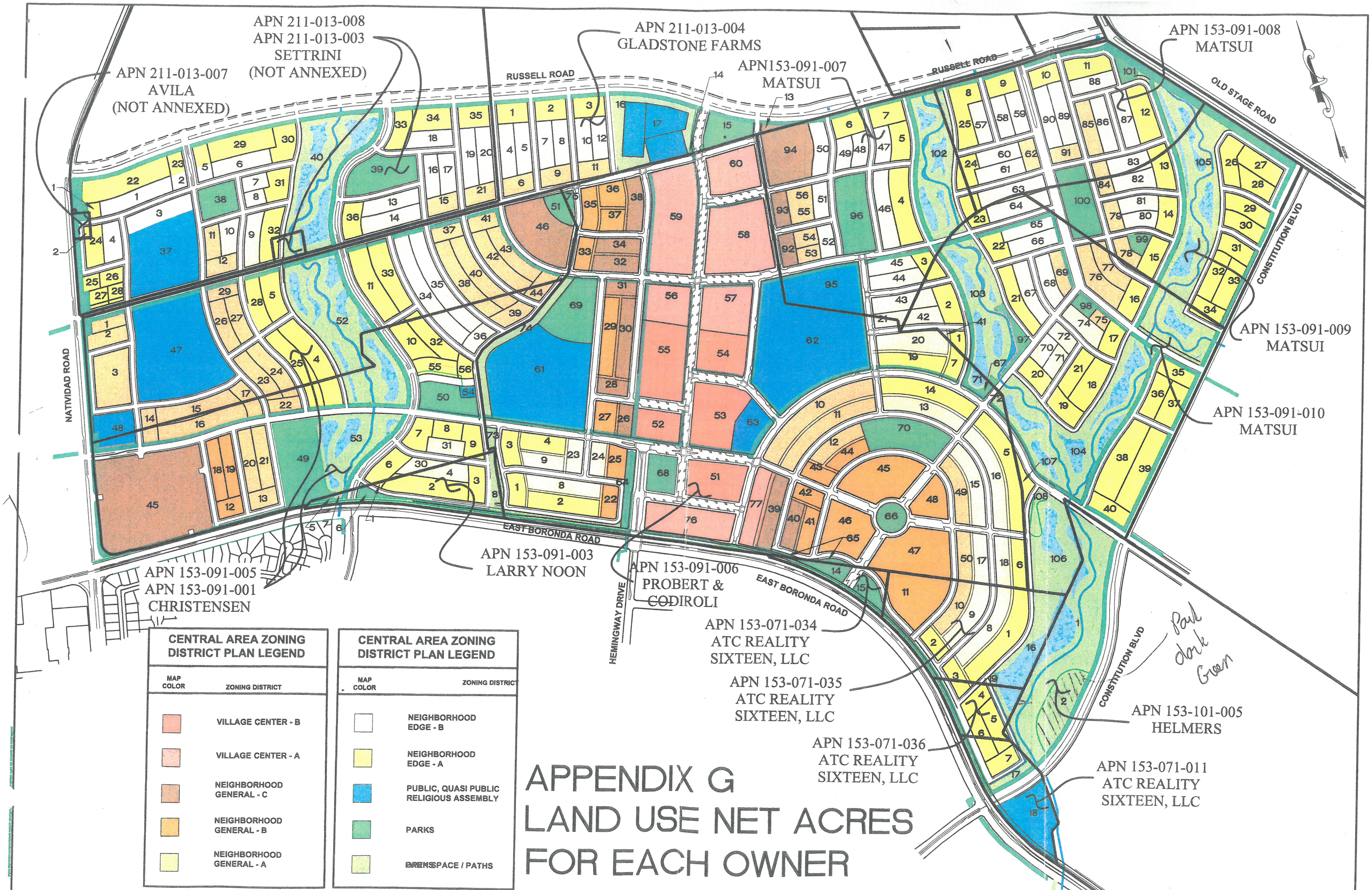
COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 153 PAGE 09



THIS MAP IS INTENDED TO BE USED FOR
PROPERTY TAX ASSESSMENT PURPOSES ONLY


TAX RATE AREA
COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 153 PAGE 07
1"=500 FT.
09
EAST BORONDA ROAD
Sp110
CREEKBRIDGE 8
20
17.516 ac.
10-30-89
1
44.402 ac.
ALVAREZ HIGH SCHOOL
PARCEL 1
SALINAS HIGH SCHOOL DISTRICT
FINAL MAP TRACT No.1066
VOL.16 C.& T. PG.30
RECORDED 11-6-87
6.598ac.
ROUND HILL FARMS
8-14-90
26
Hemingway Dr.
25
HERITAGE SQUARE UNIT 1
39.8060 ac.
7-16-90
3.29ac.
34
EAST BORONDA ROAD
35
20.875ac.
16S54
36
5.ac.
11
8.43ac.
10-1
10-2
24
7-3-90
UNIT 1
CANTERBURY ESTATES
24.8390 ac.
28
1-23-91
UNIT 3
ESTATES
TOTAL ACRES
UNITS 2 & 3
39.2350 Ac.
27
UNIT 2
CANTERBURY
11-29-90
CONSTITUTION
3-17-93
29
SUNFLOWER
46
HERITAGE SQUARE
UNIT 2
071
tanksite
0.267ac.
32
SEE PG. 61
37
PAR. B
15.478 AC.
11.012 ac
28
6S63
Sp110
NANTUCKET BOULEVARD
18
8-28-89
CREEKBRIDGE 6
11.353 ac.
9-29-89
CREEKBRIDGE 7
24.292ac.
19
FINAL MAP
CREEKBRIDGE
R Y Z
8-17-90
23
31.239ac.
INDEPENDENCE BLVD.
17
CREEKBRIDGE 5
6-30-89
16
CREEKBRIDGE 4
4-27-89
8-19-88
CREEKBRIDGE 1
13
14
CREEKBRIDGE 2
10-11-88
15
CREEKBRIDGE 3
12-23-88
08
08
Ro. EL SAUSAL
POR.OF THE SHERWOOD ESTATE
Por. of Lot C6
NATIVIDAD ROAD
Inglewood
36
Arcadia
Pescadero
Redondo
Glendora
35
261
Compton
BOOK
32
Sausal
El Sur
Saucito
Cambrian
31
Los Coches
Cupertino
34
Los Gatos
30
Saratoga

APPENDIX B


APPENDIX G
LAND USE NET ACRES
FOR EACH OWNER
APN 211-013-007
AVILA
(NOT ANNEXED)
APN 211-013-008
APN 211-013-003
SETTRINI
(NOT ANNEXED)
APN 211-013-004
GLADSTONE FARMS
APN153-091-007
MATSUI
APN 153-091-008
MATSUI
APN 153-091-009
MATSUI
APN 153-091-010
MATSUI
APN 153-091-003
LARRY NOON
APN 153-091-005
APN 153-091-001
CHRISTENSEN
APN 153-091-006
PROBERT &
CODIROLI
APN 153-071-034
ATC REALITY
SIXTEEN, LLC
APN 153-071-035
ATC REALITY
SIXTEEN, LLC
APN 153-071-036
ATC REALITY
SIXTEEN, LLC
APN 153-101-005
HELMERS
APN 153-071-011
ATC REALITY
SIXTEEN, LLC
Paul dark Green
RUSSELL ROAD
OLD STAGE ROAD
CONSTITUTION BLVD
NATIVIDAD ROAD
EAST BORONDA ROAD
HEMINGWAY DRIVE
CENTRAL AREA ZONING DISTRICT PLAN LEGEND
MAP COLOR
ZONING DISTRICT
VILLAGE CENTER - B
VILLAGE CENTER - A
NEIGHBORHOOD GENERAL - C
NEIGHBORHOOD GENERAL - B
NEIGHBORHOOD GENERAL - A
CENTRAL AREA ZONING DISTRICT PLAN LEGEND
MAP COLOR
ZONING DISTRICT
NEIGHBORHOOD EDGE - B
NEIGHBORHOOD EDGE - A
PUBLIC, QUASI PUBLIC RELIGIOUS ASSEMBLY
PARKS
OPENSPACE / PATHS

APPENDIX C

PHASE I ENVIRONMENTAL SITE ASSESSMENT
AND
LIMITED PHASE II SOIL TESTING

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

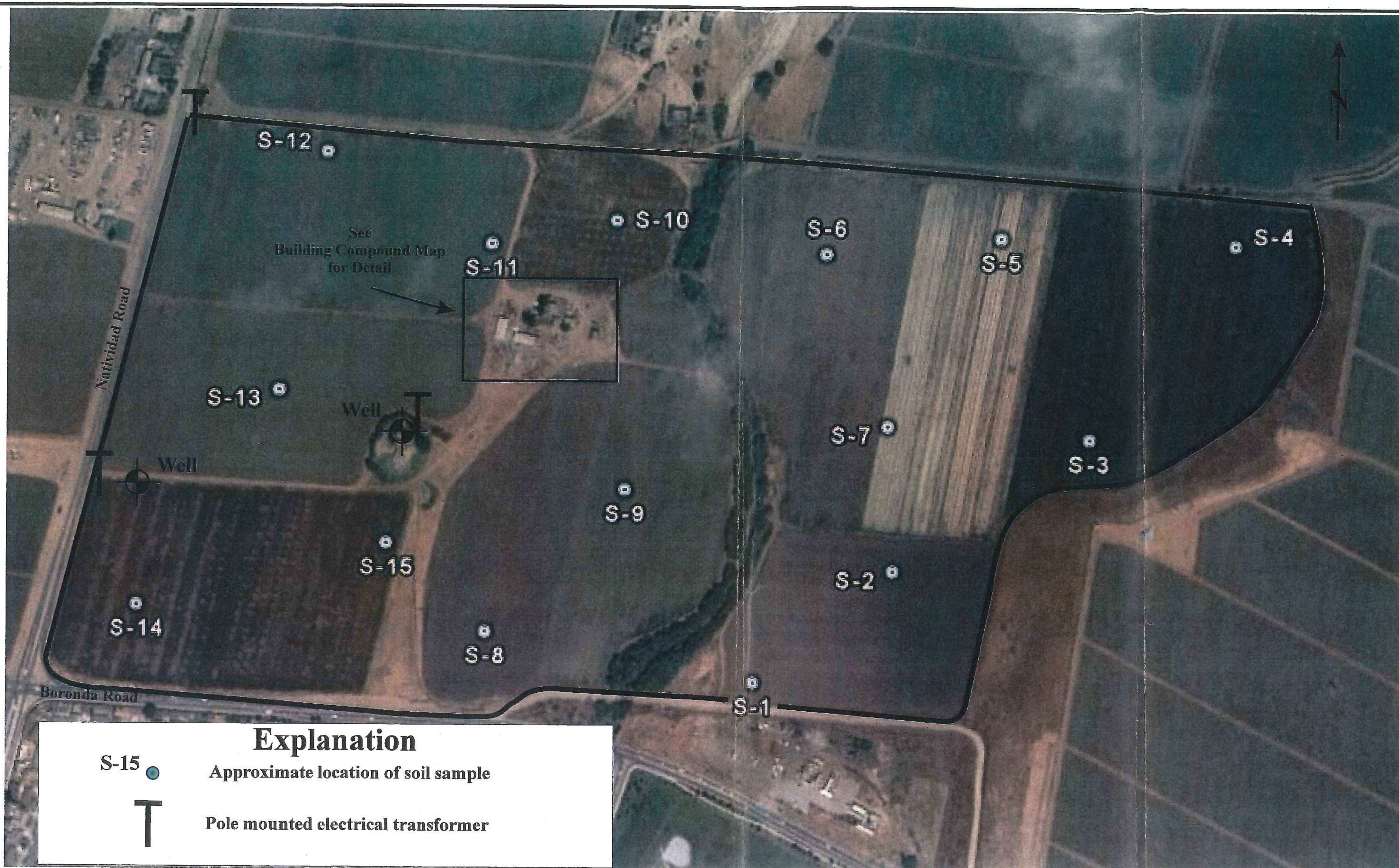
October 2007

Prepared for

Harrod Construction Company

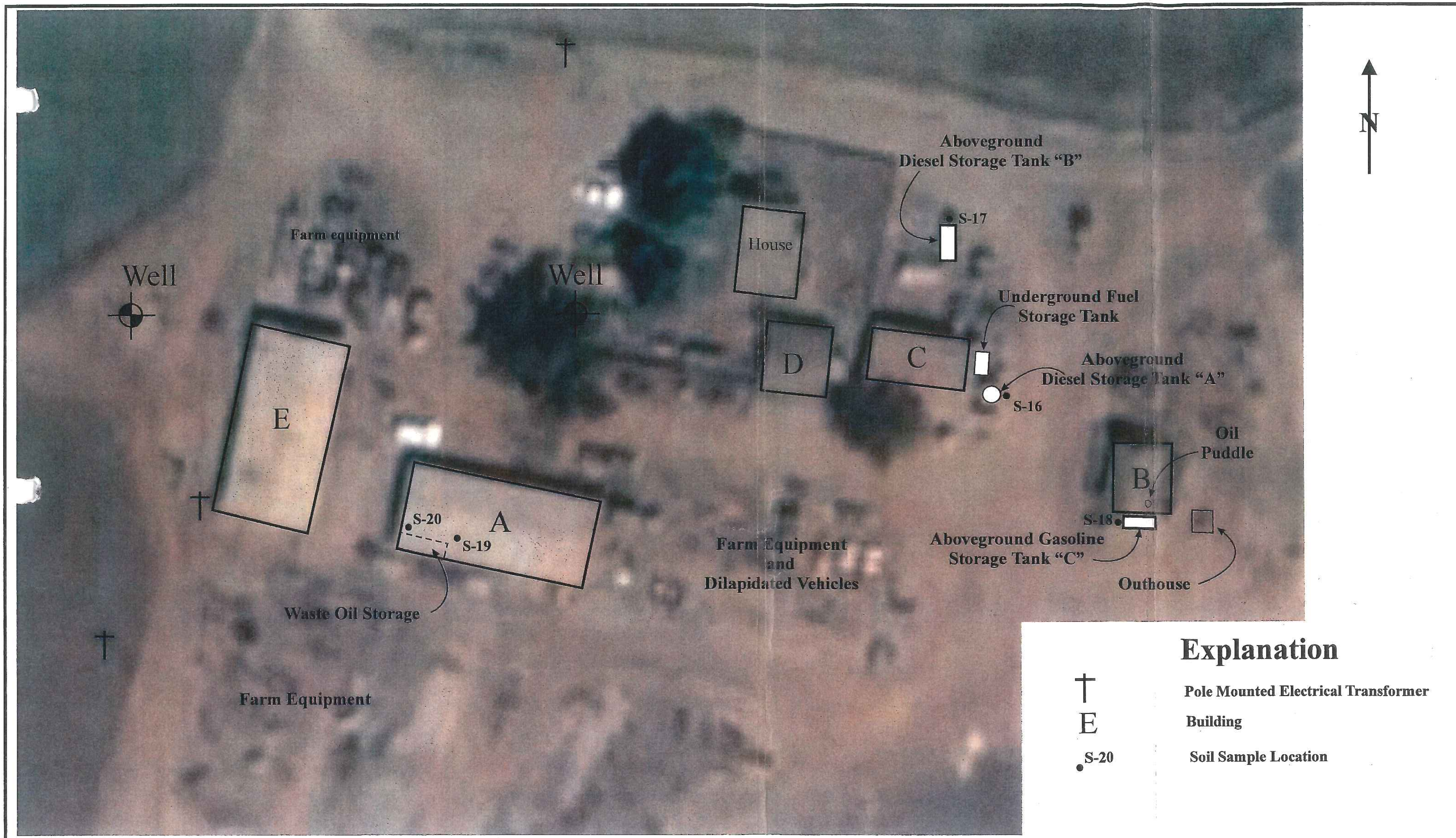
Prepared by

EARTH SYSTEMS PACIFC
400 Park Center Drive
Hollister, California 95023



Base Map: Google Earth Image, 2007

Earth Systems Pacific	Christensen Parcels NE Boronda and Natividad Roads Salinas, California	**Field Soil Sample Location Map**		
		October, 2007	No Scale	SH-10789-EB



Base: Google Earth Image - 2007

Earth Systems Pacific	Christensen Parcels NE Boronda and Natividad Roads Salinas, California	**Building Compound Sample Location Map** October, 2007 | No Scale | SH-10789-EB

TABLE 1

SUMMARY OF ORGANOCHLORINE PESTICIDES
AGRICULTURAL FIELD SOIL SAMPLES

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

(concentrations presented in parts per million (mg/kg))

Sample Location (sampling depth)	DDE	DDT	Dieldrin	Endrin
S-1 (0.5 ft)	0.078	0.016	**0.035**	0.003
S-2 (0.5 ft)	0.089	0.023	ND (<0.0020)	ND (<0.0020)
S-3 (0.5 ft)	0.130	0.045	0.019	ND (<0.0035)
S-4 (0.5 ft)	0.130	0.044	ND (<0.0050)	ND (<0.0050)
S-5 (0.5 ft)	0.080	0.019	0.024	ND (<0.0010)
S-6 (0.5 ft)	0.038	0.0065	0.023	ND (<0.0010)
S-7 (0.5 ft)	0.055	0.011	0.015	ND (<0.0010)
S-8 (0.5 ft)	0.067	0.011	**0.041**	0.0027
S-9 (0.5 ft)	0.035	0.0056	0.015	ND (<0.0010)
S-10 (0.5 ft)	0.027	0.0069	ND (<0.0010)	ND (<0.0010)
S-11 (0.5 ft)	0.0925	0.032	ND (<0.0020)	ND (<0.0020)
S-12 (0.5 ft)	0.066	0.026	ND (<0.0020)	ND (<0.0020)
S-13 (0.5 ft)	0.120	0.051	0.020	ND (<0.0050)
S-14 (0.5 ft)	0.150	0.043	**0.032**	ND (<0.0050)
S-15 (0.5 ft)	0.140	0.045	**0.033**	ND (<0.0035)
PRG Residential	1.7	1.7	0.030	18.0

TABLE 1

SUMMARY OF ORGANOCHLORINE PESTICIDES
AGRICULTURAL FIELD SOIL SAMPLES

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

(concentrations presented in parts per million (mg/kg))

Sample Location (sampling depth)	**DDE**	**DDT**	**Dieldrin**	**Endrin**
TTLC	1.0	1.0	8.0	0.20

TABLE 2

SUMMARY OF PETROLEUM HYDROCARBONS
ABOVEROUND FUEL STORAGE TANK SOIL SAMPLES

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

(concentrations presented in parts per million (mg/kg))

Sample Location (sampling depth)	**TPH gasoline**	**TPH diesel**	**BTEX**	**MTBE**
S-16				
(0.5 ft)	41	**4,000**	ND (<0.025)	ND (<0.25)
(3.0 ft)	ND (<1.0)	ND (<1.0)	ND (<0.005)	ND (<0.05)
S-17				
(0.5 ft)	ND (<1.0)	ND (<1.0)	ND (<0.005)	ND (<0.05)
(3.0 ft)	ND (<1.0)	ND (<1.0)	ND (<0.005)	ND (<0.05)
S-18				
(0.5 ft)	ND (<1.0)	5.0	ND (<0.005)	ND (<0.05)
(3.0 ft	ND (<1.0)	67	ND (<0.005)	ND (<0.05)
ESL	100	100	0.044	0.023

PHOTOGRAPHS

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

Photograph 1: Above ground diesel storage tanks (Tank A in foreground Tank B in right background of photograph).

Photograph 2: View of fill pipe for underground storage tank.

Earth Systems Pacific

400 Park Center Drive, Suite 1, Hollister, CA 95023
October 2007

(831) 637-2133 – (831) 637-0510 Fax
www.earthsys.com - e-mail:esc@earthsys.com
SH-10789-EB

PHOTOGRAPHS

CHRISTENSEN PARCELS
BORONDA AND NATIVIDAD ROADS
SALINAS, CALIFORNIA

Photograph 3: Above ground gasoline storage Tank C.

Photograph 4: View of oil puddle beneath Building B.

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND LIMITED PHASE II SOIL INVESTIGATION

Matsui/Codiroli Properties
600-acres Northeast of Boronda Rd. at Hemingway Dr.
Salinas, Monterey County, California

February 2001

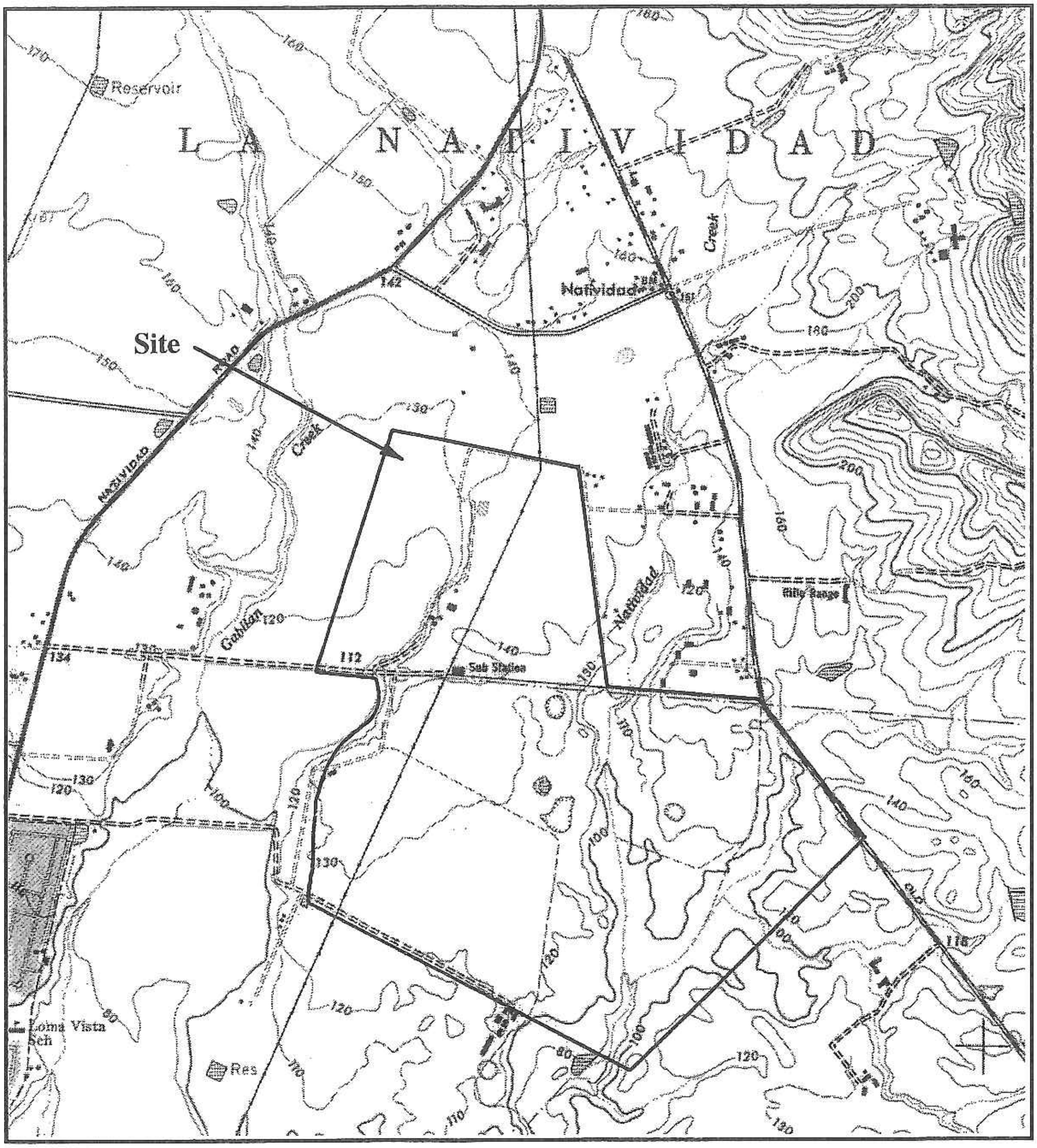
Prepared for

Matsui/Codiroli Properties

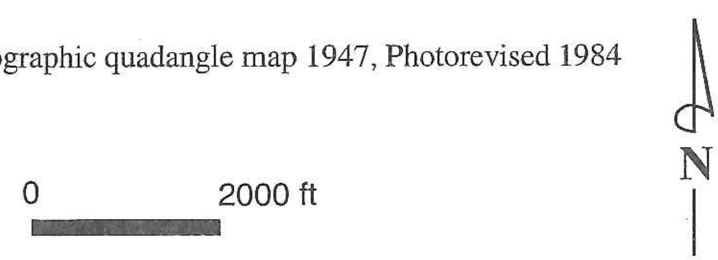
Prepared by

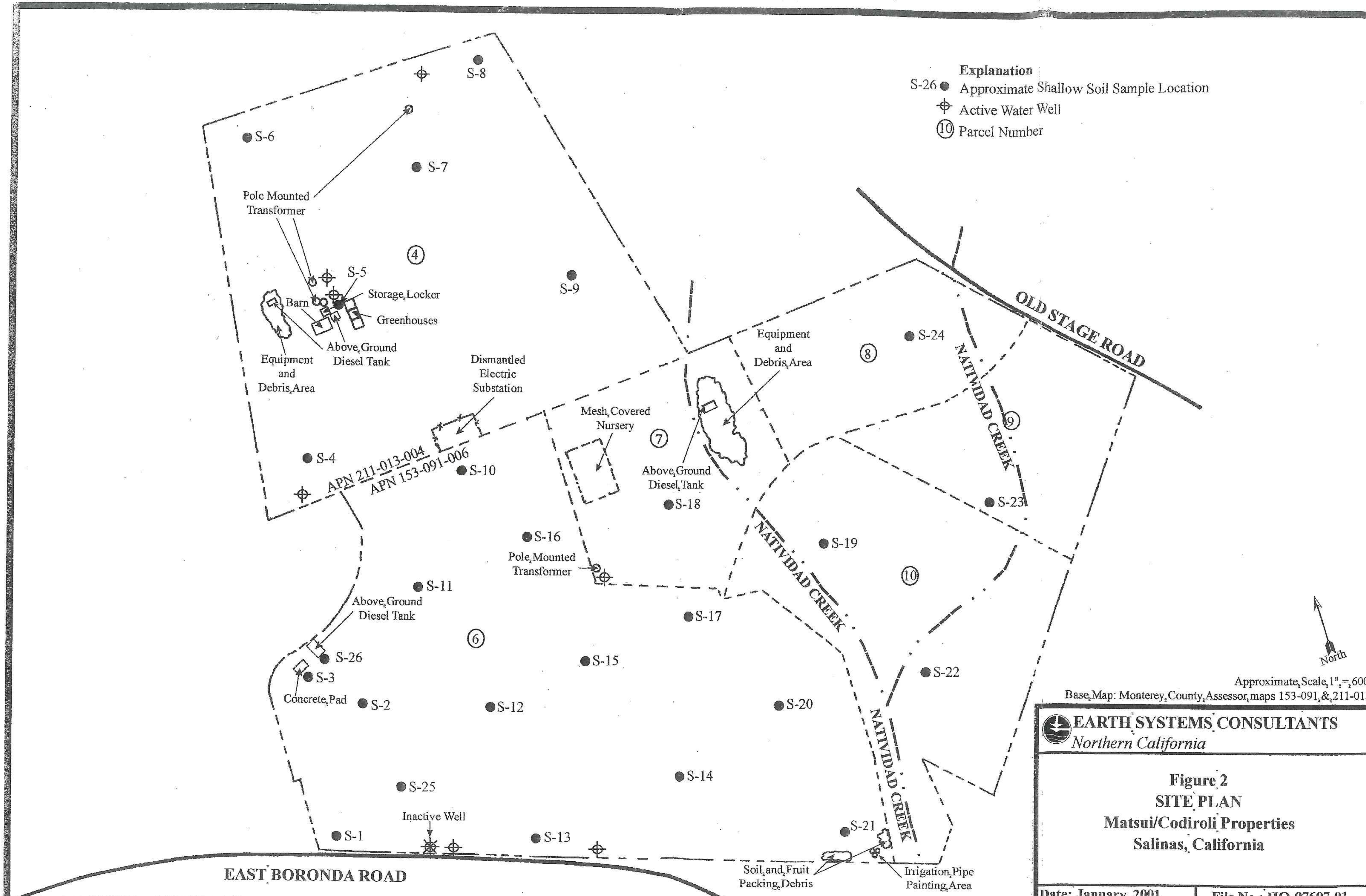
EARTH SYSTEMS CONSULTANTS
NORTHERN CALIFORNIA
400 Park Center Drive
Hollister, California 95023

Vicinity Map



Base: USGS Natividad 7.5' topographic quadangle map 1947, Photorevised 1984





EARTH SYSTEMS CONSULTANTS
Northern California

Figure 2
SITE PLAN
Matsui/Codiroli Properties
Salinas, California

Date: January, 2001 | **File No.: HO-07607-01**

TABLE 1
Summary of Soil Test Results

Matsui/Codiroli Properties
Salinas, California
(concentrations presented in parts per million (mg/kg))

Sample (6-inch sampling depth)	**Arsenic**	**Lead**	**Chlordane** (alpha & gamma)	**Dieldrin**	**DDE**	**DDD**	**DDT**	**Toxaphene**
S-1	ND	12	ND	**0.040**	0.17	0.31	0.15	ND
S-2	ND	8.6	ND	**0.038**	0.18	0.015	0.15	0.40
S-3	ND	79	0.0162	**(0.28) 0.25**	0.14	0.15	(1.4) **2.2**	ND
S-4	8.1	13	ND	**0.068**	(0.32) 0.38	0.047	(0.27) 0.32	0.99
S-5	ND	11	ND	**0.10**	(0.32) 0.34	ND	(0.22) 0.22	0.56
S-6	ND	8.5	ND	**0.079**	(0.22) 0.22	ND	0.13	0.32
S-7	ND	8.2	ND	**0.091**	(0.26) 0.27	ND	0.16	0.32
S-8	ND	10	ND	**0.048**	(0.22) 0.24	ND	0.13	0.31
S-9	7.7	8.0	ND	**0.048**	(0.21) 0.21	ND	0.14	0.25
S-10	ND	5.9	ND	**0.058**	0.19	ND	0.16	0.32
S-11	7.5	ND	ND	**0.052**	0.16	ND	0.16	0.64
S-12	ND	7.2	0.0199	**0.038**	0.16	ND	0.13	0.53
S-13	ND	5.8	0.0249	**0.083**	(0.31) 0.39	ND	(0.30) 0.33	1.0
S-14	ND	ND	0.013	**0.054**	0.15	ND	0.13	0.48
S-15	7.4	5.6	ND	**0.052**	0.17	ND	0.15	0.47
S-16	ND	ND	ND	**0.059**	0.15	ND	0.085	0.65

TABLE 1
Summary of Soil Test Results

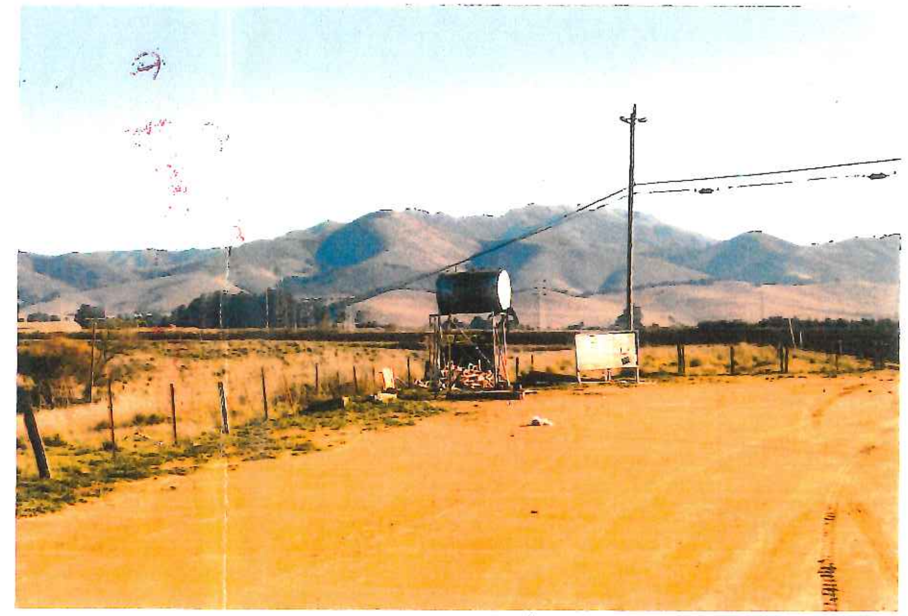
Matsui/Codiroli Properties
Salinas, California
(concentrations presented in parts per million (mg/kg))

Sample (6-inch sampling depth)	**Arsenic**	**Lead**	**Chlordane** (alpha & gamma)	**Dieldrin**	**DDE**	**DDD**	**DDT**	**Toxaphene**
S-17	ND	ND	ND	**0.051**	0.13	ND	0.095	0.63
S-18	ND	8.7	ND	ND	0.012	ND	ND	ND
S-19	ND	ND	ND	ND	0.013	ND	ND	ND
S-20	5.3	6.5	ND	ND	0.012	ND	ND	ND
S-21	18	ND	ND	ND	ND	ND	ND	ND
S-22	14	ND	ND	ND	ND	ND	ND	ND
S-23	20	ND	ND	ND	ND	ND	ND	ND
S-24	13	ND	ND	ND	ND	ND	ND	ND
S-25	19	ND	ND	**0.038**	0.16	ND	0.17	0.35
PRG	22	400	1.6	0.03	2.4	1.7	1.7	0.44
TTLC	500	1,000	2.5	8.0	1.0	1.0	1.0	---

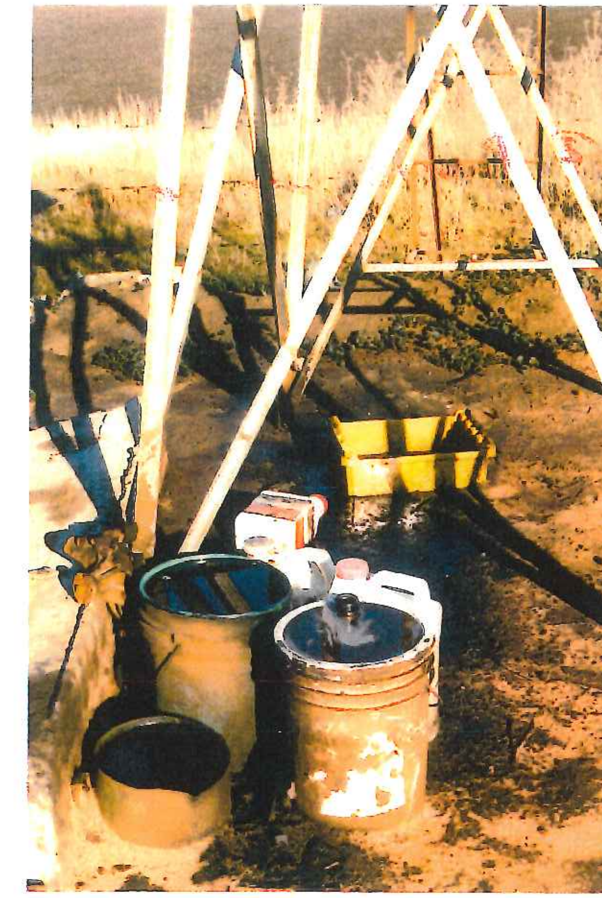
Sample (6-inch sampling depth)	**TPH Gasoline**	**TPH Diesel**	**Total oil and Grease**	**BTEX**	**MTBE**			
S-26	78*	12,000	17,000	ND	ND			

PRGs = Preliminary Remediation Goals for residential soil (USEPA, October 1, 1999).
TTLC = Total Threshold Limit Concentration (Title 22, Division 4 of the California Code of Regulations).
ND = Not Detected
--- = Not Applicable
( ) = Initial concentration, retest by lab presented below initial value
TPH = Total petroleum hydrocarbons
BTEX = Benzene, toluene, ethyl benzene, and xylenes
MTBE = Methyl-t-butyl ether
* = Not Characteristic of a Fuel Chromatograph Pattern.

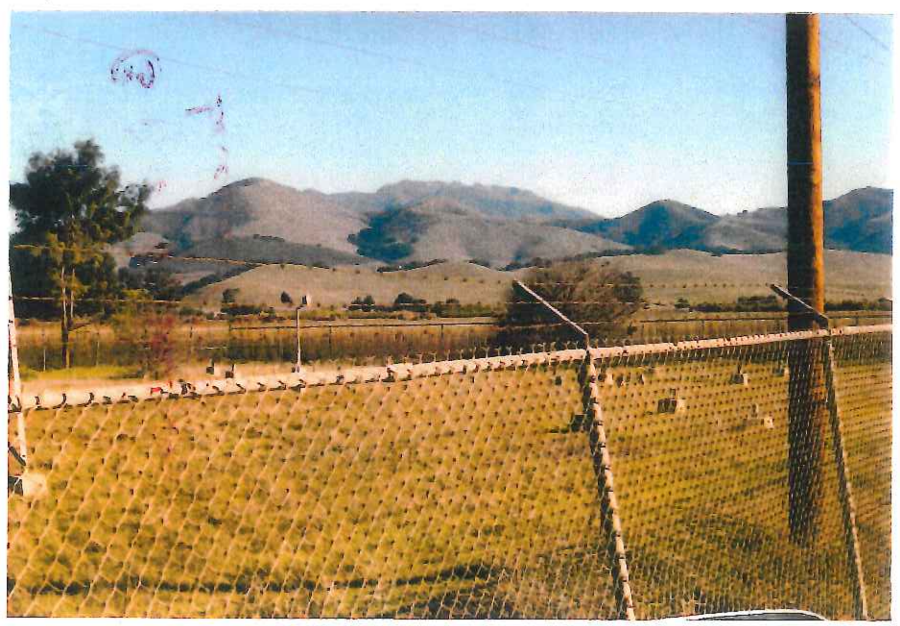
1. Parcel 6; Looking northward,



2. Parcel 6; Above-ground tank.



3. Parcel 6; Staining below tank.



4. Parcel 4; Electric substation.

5. Parcel 4; View looking eastward from ranch compound.

Parcel 4; View of ranch compound.

Earth Systems Consultants **Northern California**	Matsui / Codiroli Properties Salinas, California	**SITE PHOTOGRAPHS** Date: January 2001 File No: HO-07607-01 Appendix A1

7. *Parcel 4; View of side of barn.*

8. *Parcel 4; Above-ground tank in ranch compound.*

9. *Parcel 4; View of small burn piles and green-houses.*

10. *Parcel 4; Above-ground tank west of ranch compound.*

11. *Parcel 4; View of debris area and waste oil containers.*

12. *Parcel 7; Above-ground tank.*

Earth Systems Consultants Northern California	Matsui / Codiroli Properties Salinas, California	**SITE PHOTOGRAPHS** Date: January 2001 File No: HO-07607-01	Appendix A2

Earth Systems Consultants
Northern California

400 Park Center Drive, Suite 1
Hollister, California 95023

(831) 637-2133 • FAX (831) 637-0510
E-mail: eschol@earthsys.com

File No. HO-07609-01

March 7, 2001

Mr. Matthew Lewis
Creekbridge Homes
21025 E. Boronda Road
Salinas, California 93906

Project: **Matsui Codiroli Properties**
Salinas, California

Subject: Additional Deeper Soil Sampling and Testing

Dear Mr. Lewis:

This letter briefly describes Earth Systems Consultants Northern California (ESCNC) work performed and findings concerning additional deeper sampling and testing of near surface soils on the Matsui/Codiroli properties as requested by Creekbridge Homes. ESCNC recently performed a Phase I Environmental Site Assessment and Limted Phase II Soil Investigation for the subject properties revealing the presence of elevated levels of pesticides including dieldrin, and toxaphene in soil samples collected at a depth of 6-inches. Based on these findings, ESCNC recommended a health-based risk assessment in connection with residential use of the properties. Earth Systems Consultants Northern California (ESCNC)

On February 13, 2001, a registered geologist from our staff collected soil samples at a depth of 18-inches at six distributed locations (S-3A, S-5A, S-7A, S-10A, S-13A, and S-17A) corresponding to our previous sampling locations (see Figure 1, Site Plan). All the samples were collected in clean new brass sleeves and packaged with capped, Teflon-covered ends and placed in a field cooler with ice. The samples were then transferred to Entech Analytical Labs (ELAP #2346) for testing under standard chain-of-custody documentation. All the samples were individually tested for chlorinated pesticides using EPA Method 8080.

No chlorinated pesticides were found to be present in any of the deeper samples. Based on these results, it appears that agriculturally applied pesticides are limited to the upper 1-1½ feet of soil on the site.

LIMITATIONS

This letter and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. This is in lieu of all warranties, express or implied. Our sampling and testing program is necessarily limited.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please feel free to contact us at (831) 637-2133.

EARTH SYSTEMS CONSULTANTS NORTHERN CALIFORNIA
Northern California

Brett D. Faust

Brett D. Faust
Project Geologist, RG 7025

Distribution: Creekbridge Homes, Mr. Matt Lewis (3)

Attachments: Figure 1, Site Plan; Entech's Laboratory Report

Document No. 0103-508.LTR

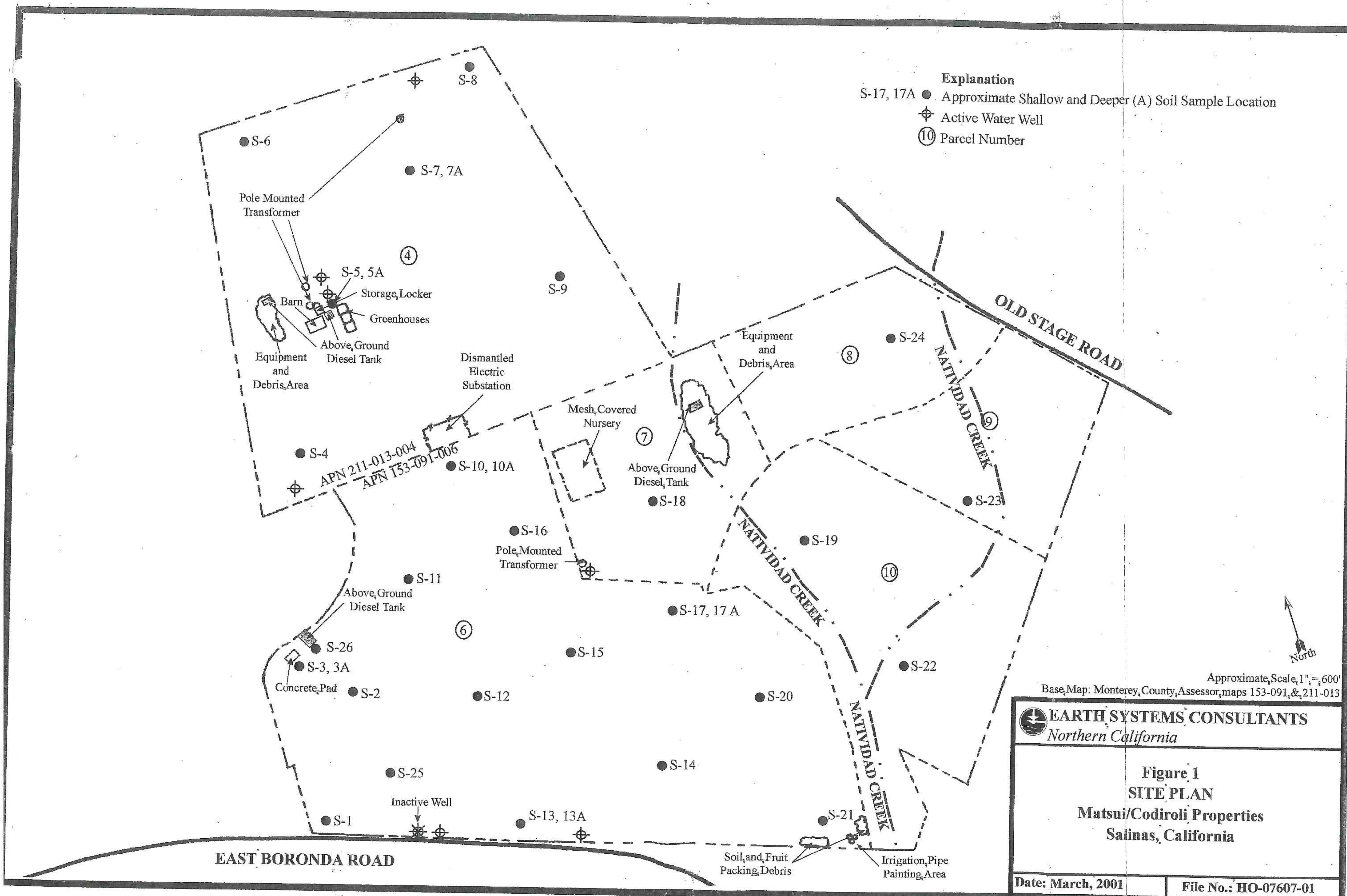


Figure 1
SITE PLAN
Matsui/Codiroli Properties
Salinas, California

PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED NEW SCHOOL SITE PROBERT/MATSUI PROPERTY NORTH OF EAST BORONDA ROAD SALINAS, CALIFORNIA

Prepared For: Salinas Union High School District
320 Rose Street
Salinas, California 93901

January 22, 2009

7. FINDINGS AND RECOMMENDATIONS

On behalf of the District, Kleinfelder performed this Phase I ESA for the site located northeast of East Boronda Road, which included portions of assessor's parcel numbers 153-091-006 and 153-091-007, in Salinas, California, in general conformance with the scope and limitations of ASTM Designation E 1527-05, Public Resources Code Section 21151.8, ECS 17213, SB 162 and AB 387, and CEQA Guidelines Section 15186, and in conformance with our proposal dated February 28, 2008, which was subsequently approved by the Salinas Union High School District. Kleinfelder's findings and conclusions about the site are summarized below.

A review of historical information indicates that the site was used for agricultural purposes from at least 1956 to the present day. The northeastern portion of the site (Matsui property) contained what appear to be ponds from at least 1956 to 1987. Starting sometime between 1987 and 1998, the Matsui property was use was converted to row crops, which appears to have continued to the present day. The southwestern portion of the site (Cordiroli property) appears to have been used for growing cops from at least 1956 to the present day. Legal application of pesticides on agricultural properties can results in elevated concentrations of metals and pesticides in soil. Further, some farming practices included mixing pesticides with irrigation water in ponds. Consequently, Kleinfelder recommends a soil investigation to assess concentrations of arsenic and OCPs in site soil.

A pole-mounted transformer was observed on site. Leaks of dielectric fluid from the transformer could result in PCBs in site soil. Therefore, Kleinfelder recommends a soil investigation in the vicinity of the transformer to assess PCB concentrations in soil.

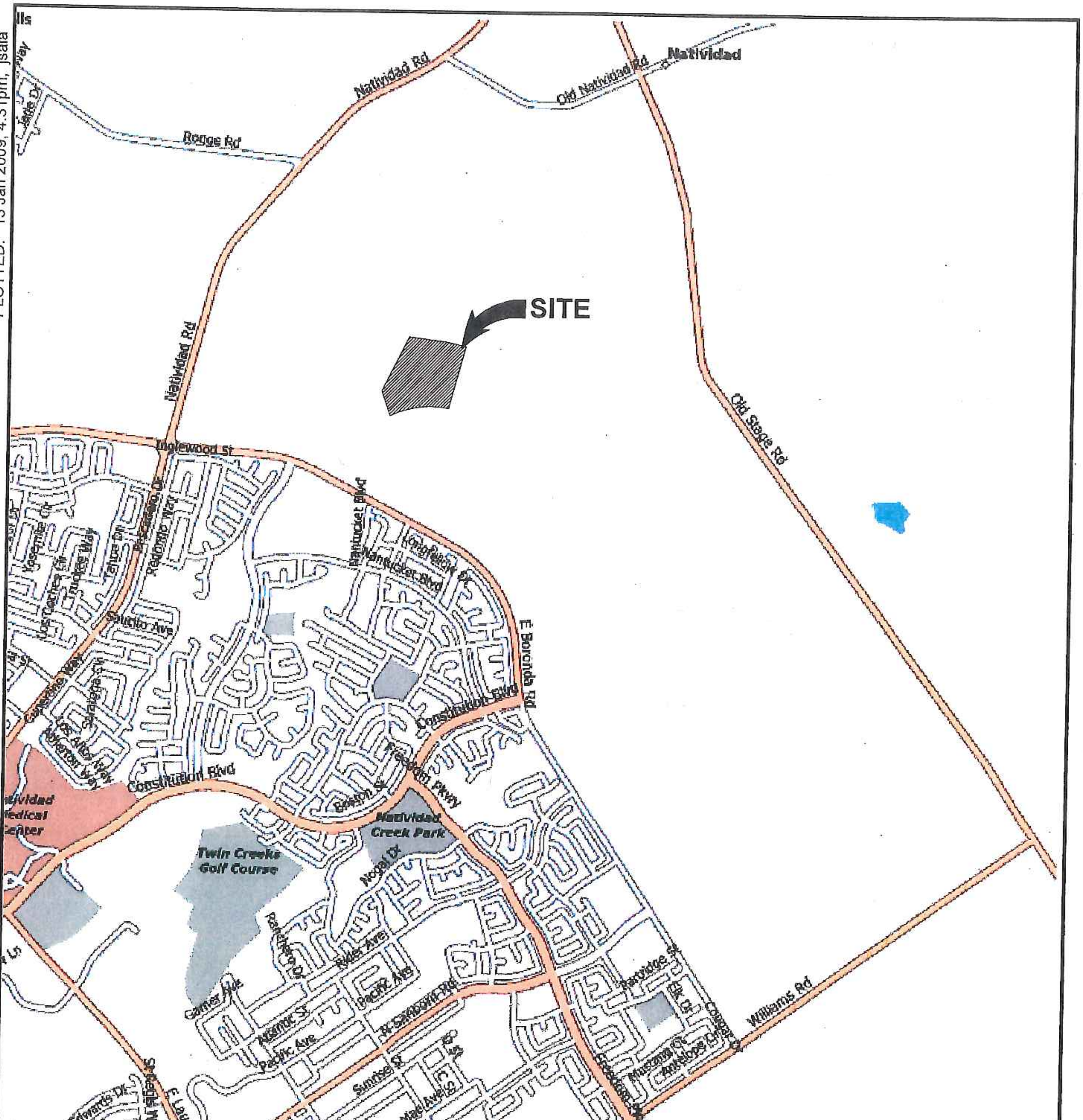
No structures are located on the site, nor is there evidence of residential or commercial buildings for five decades.

A five-gallon bucket containing hydraulic fluid was noted during the site reconnaissance. No indications of a release near the bucket were noted. Kleinfelder recommends that this bucket be removed prior to purchase of the property.

Limited amounts of burned material were noted during the site reconnaissance in a shallow trench on the east side of the site. Our observations indicated the material was placed in the trench and burned. Our observations did not indicate that the trench contains extensive amounts of buried burned material. Based on the apparent limited amount of burned material, Kleinfelder does not recommend an investigation related to the burned material.

The site is not listed in the regulatory databases searched. No properties within the ASTM-specified search distances were listed in the regulatory databases searched.

If the site is intended to be purchased for the purpose of building a school using funds provided by the State of California, Kleinfelder recommends that this Phase I ESA be submitted to the DTSC for review.



2000 1000 0 2000

APPROXIMATE SCALE (feet)

N

REFERENCE:
www.mapquest.com, 2008

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	94134
DRAWN:	JAN 2008
DRAWN BY:	LGS/JDS
CHECKED BY:	JW
FILE NAME:	PW001_plates.dwg

SITE VICINITY MAP

NEW HIGH SCHOOL - SALINAS UHSD PEA
APN-153-091-006 AND APN-153-091-007
NORTH OF EAST BORONDA ROAD
SALINAS, CALIFORNIA

PLATE

1

PLOTTED: 13 Jan 2009, 4:31pm, jsala
LAYOUT: SITE-VIC
ATTACHED IMAGES: Images: SITE-VIC.jpg Images: SITEPLAN.jpg
ATTACHED XREFS: XRef: Eng-A_8x11_P_StyleA
PLEASANTON, CA CAD FILE: D:_PROJECTS\94134\GRAPHICS\PW001\

N

600 300 0 600

APPROXIMATE SCALE (feet)

REFERENCE:
Google Earth Pro, 2008

LEGEND

APPROXIMATE LIMITS OF PROPOSED NEW SCHOOL PROPERTY

EXISTING PARCEL BOUNDARY (whilte lines)

IRRIGATION WELL AND DESANDER

POLE-MOUNTED TRASFORMER

NOTE: Locations are approximate.

PLOTTED: 21 Jan 2009, 2:55pm, jsala
LAYOUT: SITEPLAN
CAD FILE: L:\2009\09Projects\94134\GRAPHICs\PW001\
XRef: Eng-A_8x11_P_StyleA
Images: SITE-VIC.jpg Images: SITEPLAN.jpg
ATTACHED IMAGES:
ATTACHED XREFS:
PLEASANTON, CA

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO.	94134	**SITE PLAN**	PLATE
	DRAWN:	JAN 2008		
	DRAWN BY:	LGS/JSD		**2**
	CHECKED BY:	JW	NEW HIGH SCHOOL - SALINAS UHSD PEA APN-153-091-006 AND APN-153-091-007 NORTH OF EAST BORONDA ROAD SALINAS, CALIFORNIA	
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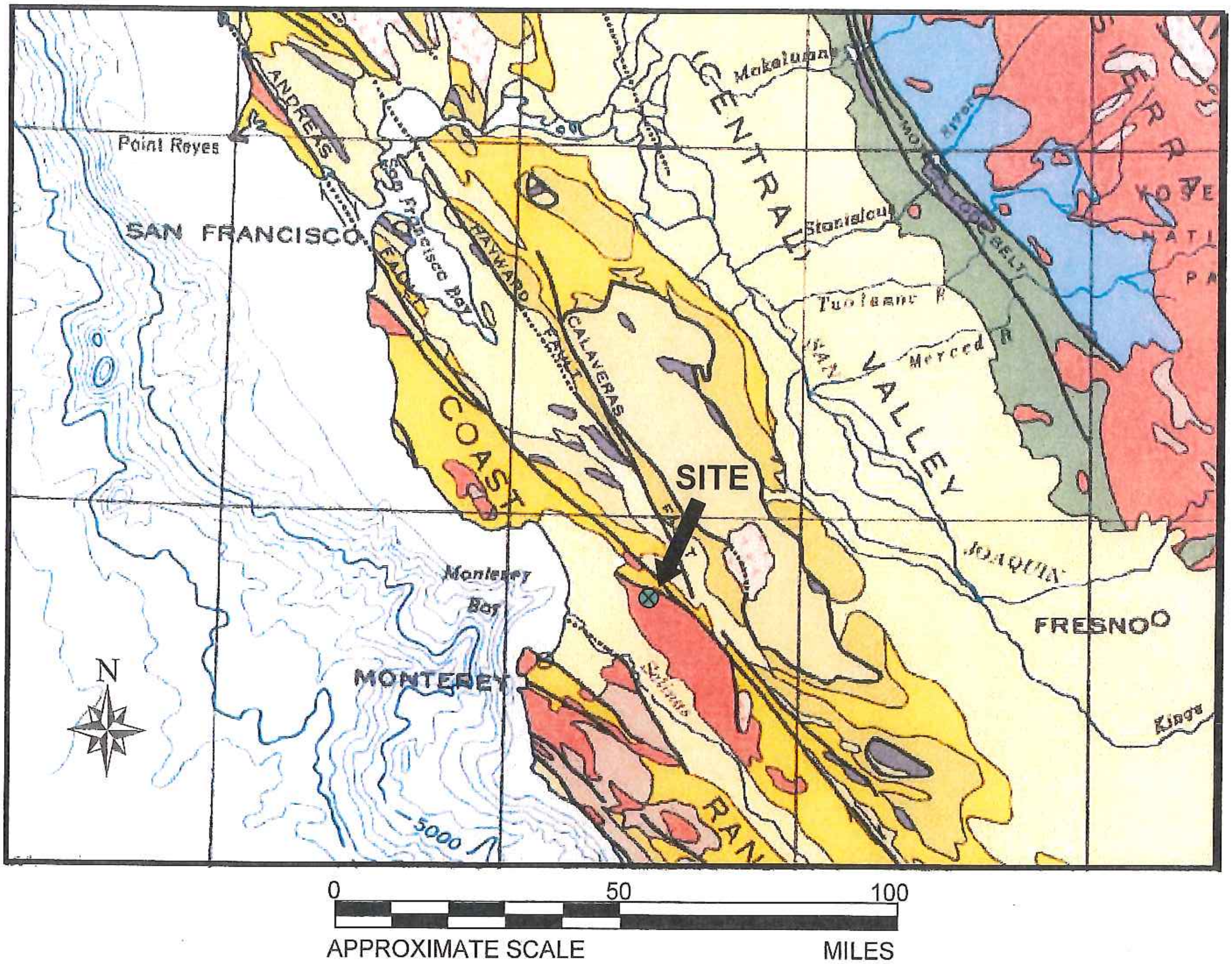


EXPLANATION

- Cenozoic nonmarine
- Cenozoic marine
- Late Mesozoic shelf and slope
- Late Mesozoic of the Franciscan Formation
- Fault, dotted where concealed, arrows indicate direction of movement
- Mesozoic Granitic rocks
- Mesozoic Ultramafic rocks

Map source: California Geological Survey, 2002, Geologic Map of California, California Department of Conservation, used with permission.

KLEINFELDER
Bright People. Right Solutions.

REGIONAL GEOLOGIC MAP

NEW HIGH SCHOOL - SALINAS UHSD PEA
APN-153-091-006 AND APN-153-091-007
NORTH OF EAST BORONDA ROAD
SALINAS, CALIFORNIA

PLATE 3

Compiled by: J. Woodard	Date: 12/09/08
Reviewed by: N. Stoopes	Revision date:

PROJECT NO.: 94134 – PW001

PHOTO 1: Looking southeast of site center towards main crop for south, west, and north fields (strawberries).

PHOTO 2: Looking north of site center, on-site electrical pole with transformer

PHOTO 3:Close-up of burned material in shallow trench on eastern portion of site

PHOTO 4: Looking west from east perimeter of site towards the irrigation well, desander, electrical panel, and northeast crop (broccoli). Although not on site, a 115kV electrical transmission line is in the background

KLEINFELDER *Bright People. Right Solutions.*		**SITE PHOTOGRAPHS** NEW HIGH SCHOOL - SALINAS UHSD PEA APN-153-091-006-000 AND APN-153-091-007-000 NORTH OF EAST BORONDA ROAD SALINAS, CALIFORNIA	PLATE **4**
Compiled by: J. Woodard	Date: 12/9/08		
Reviewed by: D. Davidson	Revision date:	PROJECT NO.: 94134-PW001	

PHOTO 5: Looking northeast of site center towards irrigation well, de-sander, and electrical panel

PHOTO 6: Looking south of de-sander towards irrigation well and electrical panel

PHOTO 7: Close-up of irrigation well and running motor with fluid oil in the motor's reserve.

PHOTO 8: Close-up of on-site bucket of hydraulic fluid at base of de-sander

KLEINFELDER Bright People. Right Solutions.		**SITE PHOTOGRAPHS** NEW HIGH SCHOOL - SALINAS UHSD PEA APN-153-091-006-000 AND APN-153-091-007-000 NORTH OF EAST BORONDA ROAD SALINAS, CALIFORNIA	PLATE **5**
Compiled by: J. Woodard	Date: 12/9/08		
Reviewed by: D. Davidson	Revision date:	PROJECT NO.: 94134-PW001	

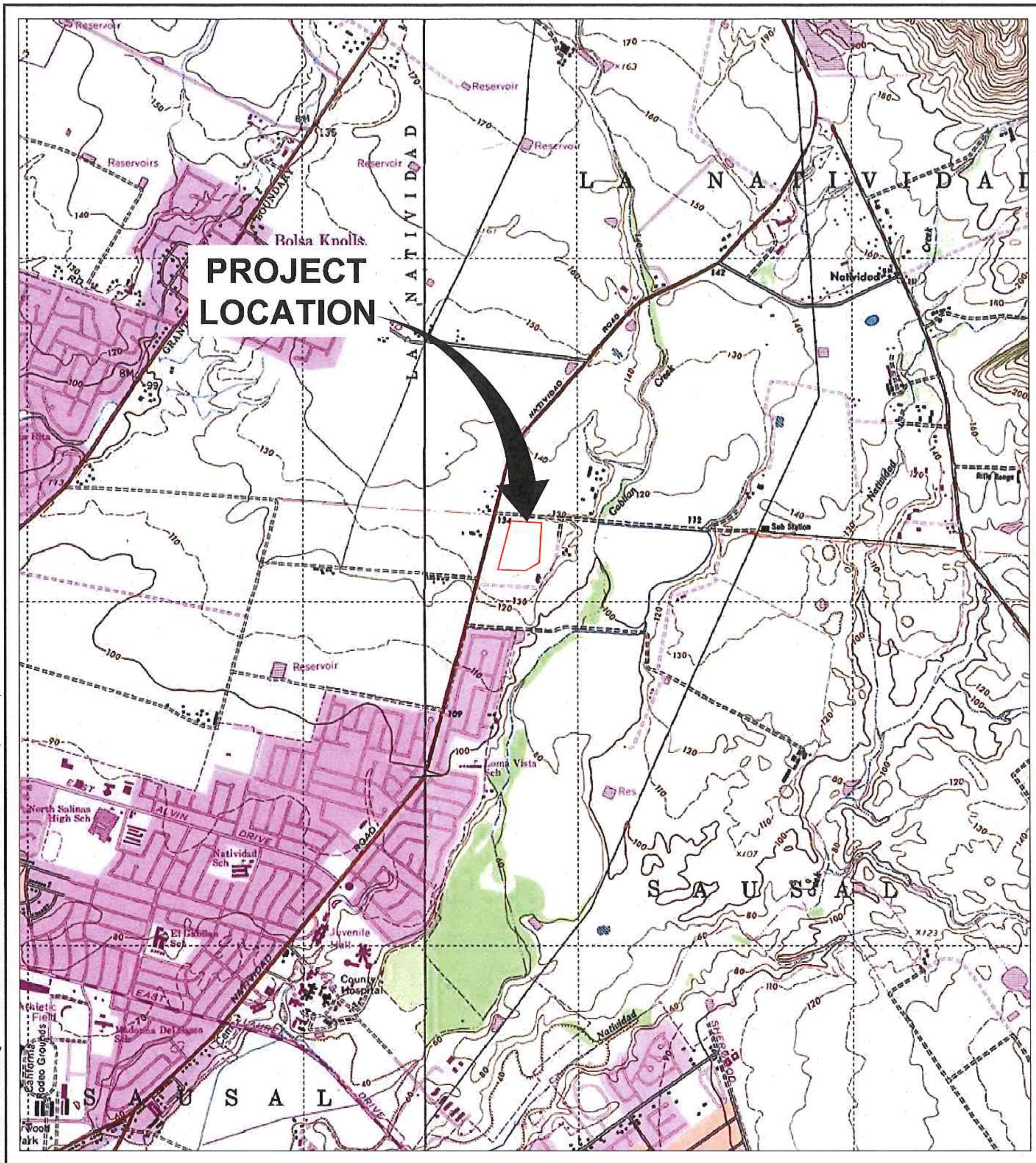
Targeted Site Investigation
Preliminary Environmental Assessment
Report for the
Harrod Property
East Boronda and Natividad Roads
Salinas, Monterey County, California
APN 153-091-001

March 26, 2010
RV009801.0000

Prepared for
California Department of Toxic Substances Control
Schools Unit, Brownfields and
Environmental Restoration Program
8800 Cal Center Drive
Sacramento, California 95826-3200

Prepared by
LFR Inc. an ARCADIS company
1410 Rocky Ridge Drive, Suite 330
Roseville, California 95661

LFR an ARCADIS company



REFERENCE: BASE MAP USGS 14.5 MIN. SALINAS CALIFORNIA 2001

0 2500' 5000'

Approximate Scale: 1 in. = 2500 ft.

CALIFORNIA

HARROD PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION
PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

AERIAL SOURCE: GOOGLE EARTH

APPROXIMATE SITE LOCATION (AREA = 12 ACRES)

0 250' 500'

Approximate Scale: 1 in. = 250 ft.

HARROD PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

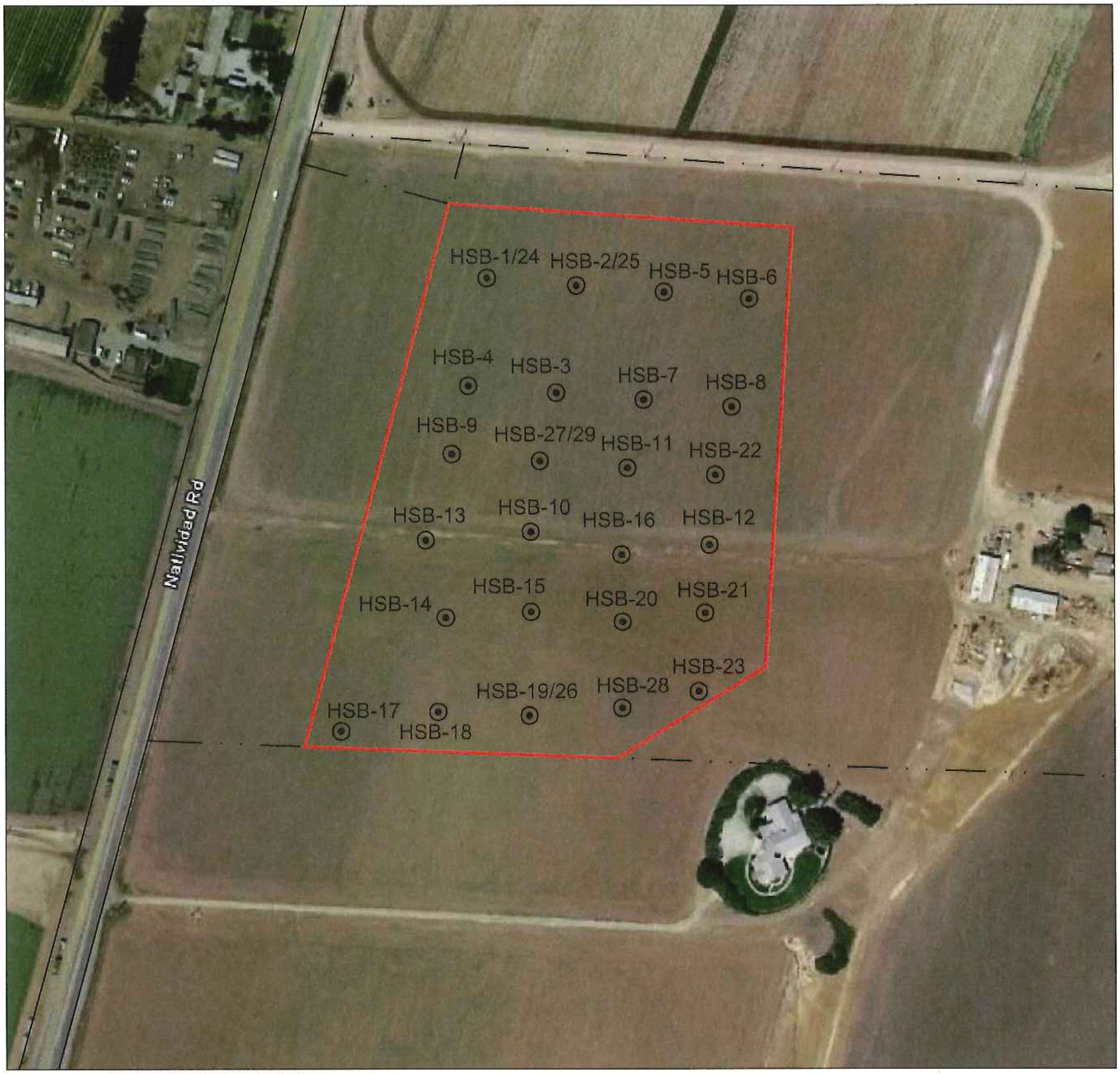
SITE PLAN

ARCADIS

FIGURE
2

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Emeryville\ACT\RV009801\0000\00001\2010\DTSC\DTSC Harrod Site Plan.dwg LAYOUT: 2 SAVED: 3/18/2010 1:37 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/19/2010 10:25 AM BY: REYES, ALEC

XREFS: IMAGES: PROJECTNAME: ---
Harrod-Site Plan.jpg
Harrod-Site Vicinity Map.jpg



AERIAL SOURCE: GOOGLE EARTH

APPROXIMATE SITE LOCATION (AREA = 12 ACRES)

HSB-11

SOIL SAMPLE LOCATION

0 250' 500'

Approximate Scale: 1 in. = 250 ft.

HARROD PROPERTY, SALINAS, CALIFORNIA

DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

SITE PLAN WITH SAMPLING LOCATIONS

ARCADIS

FIGURE

3

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Emeryville\ACT\RV009801\0000\00001\2010\DTSC\DTSC Harrod Site Plan.dwg LAYOUT: 3 SAVED: 3/25/2010 10:42 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/25/2010 11:34 AM BY: REYES, ALEC

XREFS: IMAGES: PROJECTNAME: ---
Harrod-Site Plan.jpg
Harrod-Site Vicinity Map.jpg

Table 1
Sampling and Analysis Summary
Harrod Property
Salinas, Monterey County, California

Sample ID	Matrix	Sample Depth (feet bgs)[1]	OCP[2]	Arsenic[3]	Hold
HSB-1-0.5	Soil	0.0-0.5	X	X	
HSB-2-0.5	Soil	0.0-0.5	X	X	
HSB-3-0.5	Soil	0.0-0.5	X		
HSB-4-0.5	Soil	0.0-0.5	X	X	
HSB-5-0.5	Soil	0.0-0.5	X		
HSB-6-0.5	Soil	0.0-0.5	X	X	
HSB-7-0.5	Soil	0.0-0.5	X	X	
HSB-8-0.5	Soil	0.0-0.5	X		
HSB-9-0.5	Soil	0.0-0.5	X	X	
HSB-10-0.5	Soil	0.0-0.5	X		
HSB-11-0.5	Soil	0.0-0.5	X		
HSB-12-0.5	Soil	0.0-0.5	X	X	
HSB-13-0.5	Soil	0.0-0.5	X		
HSB-14-0.5	Soil	0.0-0.5	X	X	
HSB-15-0.5	Soil	0.0-0.5	X		
HSB-16-0.5	Soil	0.0-0.5	X		
HSB-17-0.5	Soil	0.0-0.5	X	X	
HSB-18-0.5	Soil	0.0-0.5	X		
HSB-19-0.5	Soil	0.0-0.5	X		
HSB-20-0.5	Soil	0.0-0.5	X	X	
HSB-21-0.5	Soil	0.0-0.5	X		
HSB-22-0.5	Soil	0.0-0.5	X	X	
HSB-23-0.5	Soil	0.0-0.5	X		
HSB-27-0.5	Soil	0.0-0.5	X	X	
HSB-28-0.5	Soil	0.0-0.5			X

Table 1
Sampling and Analysis Summary
Harrod Property
Salinas, Monterey County, California

Sample ID	Matrix	Sample Depth (feet bgs)[1]	OCP[2]	Arsenic[3]	Hold
QA/QC Samples					
Duplicate Samples					
HSB-24-0.5 (co-located with sample HSB-1)	Soil	0.0-0.5	X	X	
HSB-25-0.5 (co-located with sample HSB-2)	Soil	0.0-0.5			X
HSB-26-0.5 (co-located with sample HSB-19)	Soil	0.0-0.5	X		
HSB-29-0.5 (co-located with sample HSB-27)	Soil	0.0-0.5	X	X	
Equipment and Field Blanks					
Equipment Blank	Water	NA	X	X	
Field Blank	Water	NA	X	X	
Total Number of Soil Samples Analyzed per Analyte:			27	16	2

Total Number of Soil SamplesCollected (including duplicates): 29
Total Number of Soil SamplesAnalyzed (including duplicates): 27

Notes:

"X" indicates sample analyzed for noted compound during analytical event.
1. Sample identification indicates bottom depth of soil sample.
2. OCPs will be analyzed using U.S. EPA Method 8081B.
3. Arsenic will be analyzed using U.S. EPA Method 6010B.

bgs = below ground surface
OCP = organochlorine pesticides
QA/QC = quality assurance/quality control

Table 2
Summary of Analytical Results
Harrod Property, Salinas, Monterey County, CA.

Sample ID	Sample Depth (feet bgs)	Analyte: / Method: / Units: / Date Sampled	Arsenic EPA 6010B mg/Kg	4,4'-DDD EPA 8081A µg/Kg	4,4'-DDE EPA 8081A µg/Kg	4,4'-DDT EPA 8081A µg/Kg	Aldrin EPA 8081A µg/Kg	alpha-BHC EPA 8081A µg/Kg	beta-BHC EPA 8081A µg/Kg	Chlordane (Technical) EPA 8081A µg/Kg	delta-BHC EPA 8081A µg/Kg	Dieldrin EPA 8081A µg/Kg	Endosulfan I EPA 8081A µg/Kg	Endosulfan II EPA 8081A µg/Kg	Endosulfan sulfate EPA 8081A µg/Kg	Endrin EPA 8081A µg/Kg	Endrin aldehyde EPA 8081A µg/Kg	gamma-BHC EPA 8081A µg/Kg	Heptachlor EPA 8081A µg/Kg	Heptachlor epoxide EPA 8081A µg/Kg	Methoxychlor EPA 8081A µg/Kg	Toxaphene EPA 8081A µg/Kg
HSB-1-0.5	0.0-0.5	03/09/10	2.0	5.1	170	120	<1.7	<1.7	<1.7	<30	<1.7	18	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-2-0.5	0.0-0.5	03/09/10	2.2	<3.3	140	81	<1.7	<1.7	<1.7	<30	<1.7	<3.3	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<61
HSB-3-0.5	0.0-0.5	03/09/10	--	7.1	130	81	<1.7	<1.7	<1.7	<30	<1.7	14	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-4-0.5	0.0-0.5	03/09/10	2.1	7.5	140	84	<1.7	<1.7	<1.7	<30	<1.7	16	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-5-0.5	0.0-0.5	03/09/10	--	11	170	100	<1.7	<1.7	<1.7	<30	<1.7	15	<1.7	<3.3	<3.3	<3.3	4.0	<1.7	<1.7	<1.7	<17	<60
HSB-6-0.5	0.0-0.5	03/09/10	2.6	14	220	130	<1.7	<1.7	<1.7	<30	<1.7	7.6	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-7-0.5	0.0-0.5	03/09/10	2.8	16	280	190	<1.7	<1.7	<1.7	<30	<1.7	32	<1.7	6.6	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-8-0.5	0.0-0.5	03/09/10	--	18	230	130	<1.7	<1.7	<1.7	<30	<1.7	8.5	<1.7	4.0	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-9-0.5	0.0-0.5	03/09/10	2.3	9.1	180	97	<1.7	<1.7	<1.7	<30	<1.7	20	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-10-0.5	0.0-0.5	03/09/10	--	24	210	120	<1.7	<1.7	<1.7	<30	<1.7	22	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-11-0.5	0.0-0.5	03/09/10	--	20	420	330	<1.7	<1.7	<1.7	<30	<1.7	24	<1.7	<3.2	<3.2	<3.2	<3.2	<1.7	<1.7	<1.7	<17	<59
HSB-12-0.5	0.0-0.5	03/09/10	2.5	31	820	590	<1.7	<1.7	<1.7	<30	<1.7	15	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-13-0.5	0.0-0.5	03/09/10	--	33	1000	1000	<1.7	<1.7	<1.7	<30	<1.7	**120**	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-14-0.5	0.0-0.5	03/09/10	2.5	24	470	390	<1.7	<1.7	<1.7	<30	<1.7	23	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
HSB-15-0.5	0.0-0.5	03/09/10	--	27	400	340	<1.7	<1.7	<1.7	<30	<1.7	23	<1.7	<3.3	<3.3	<3.3	3.8	<1.7	<1.7	<1.7	<17	<60
HSB-16-0.5	0.0-0.5	03/09/10	--	<3.3	1200	800	<1.7	<1.7	<1.7	<30	<1.7	**110**	<1.7	<3.3	5.2	<3.3	3.3	<1.7	<1.7	<1.7	<17	<59
HSB-17-0.5	0.0-0.5	03/09/10	2.5	<3.3	380	280	<1.7	<1.7	<1.7	<30	<1.7	21	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-18-0.5	0.0-0.5	03/09/10	--	7.6	290	240	<1.7	<1.7	<1.7	<30	<1.7	32	<1.7	<3.3	<3.3	<3.3	3.5	<1.7	<1.7	<1.7	<17	<60
HSB-19-0.5	0.0-0.5	03/09/10	--	10	290	230	<1.7	<1.7	<1.7	<30	<1.7	28	<1.7	<3.3	3.5	<3.3	6.1	<1.7	<1.7	<1.7	<17	<60
HSB-20-0.5	0.0-0.5	03/09/10	2.7	11	320	240	<1.7	<1.7	<1.7	<30	<1.7	33	<1.7	<3.3	<3.3	<3.3	6.8	<1.7	<1.7	<1.7	<17	<60
HSB-21-0.5	0.0-0.5	03/09/10	--	7.1	340	260	<1.7	<1.7	<1.7	<30	<1.7	18	<1.7	<3.3	<3.3	<3.3	3.9	<1.7	<1.7	<1.7	<17	<59
HSB-22-0.5	0.0-0.5	03/09/10	2.6	9.7	400	270	<1.7	<1.7	<1.7	<30	<1.7	18	<1.7	<3.3	4.6	<3.3	5.0	<1.7	<1.7	<1.7	<17	<59
HSB-23-0.5	0.0-0.5	03/09/10	--	4.2	200	130	<1.7	<1.7	<1.7	<30	<1.7	10	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
HSB-27-0.5	0.0-0.5	03/09/10	2.6	7.2	290	200	<1.7	<1.7	<1.7	<30	<1.7	24	<1.7	<3.3	<3.3	<3.3	5.2	<1.7	<1.7	<1.7	<17	<59
Screening Levels:																						
	DTSC Risk Management Level		12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		CHHSLs:	--	2,300	1,600	1,600	33	--	--	430	--	35	--	--	--	21,000	--	--	130	--	340,000	460
Duplicate Summary																						
HSB-24-0.5 (Duplicate of HSB-1-0.5)	0.5	03/09/10	2.2	4.2	210	140	<1.7	<1.7	<1.7	<30	<1.7	24	<1.7	<3.3	4.7	<3.3	6.1	<1.7	<1.7	<1.7	<17	<60
HSB-26-0.5 (Duplicate of HSB-19-0.5)	0.5	03/09/10	--	9.6	330	230	<1.7	<1.7	<1.7	<30	<1.7	28	<1.7	<3.3	<3.3	<3.3	5.3	<1.7	<1.7	<1.7	<17	<60
HSB-29-0.5 (Duplicate of HSB-27-0.5)	0.5	03/09/10	2.5	5.2	360	260	<1.7	<1.7	<1.7	<30	<1.7	31	<1.7	<3.3	<3.3	<3.3	3.8	<1.7	<1.7	<1.7	<17	<60
QA/QC Summary *(Samples analyzed in mg/L for Arsenic and µg/L for Pesticides)*																						
EQUIP BLANK	--	03/09/10	<5.0	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.9	<0.05	<0.09	<0.05	<0.09	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.5	<0.9
FIELD BLANK	--	03/09/10	<5.0	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.9	<0.05	<0.09	<0.05	<0.09	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.5	<0.9

< = Not detected above laboratory reporting limit indicated.
-- = Not Analyzed
bgs = below ground surface
mg/Kg = Milligrams per kilogram.
µg/Kg = Micrograms per kilogram.
mg/L = Milligrams per liter.
µg/L = Micrograms per liter.
CHHSL: California Human Health Screening Levels for Soil, Residential Land Use
Bold = Concentration above CHHSL

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maziar Movassaghi
Acting Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Arnold Schwarzenegger
Governor

April 30, 2010

Mr. Michael A. Brusa
Superintendent
Santa Rita Union School District
57 Russell Road
Salinas, California 93906

APPROVAL OF TSI PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT, PROPOSED ELEMENTARY SCHOOL NO 5 – HARROD PROPERTY, NORTHEAST OF EAST BORONDA AND NATIVIDAD ROADS, SALINAS (SITE CODE 204852-83)

Dear Mr. Brusa:

The Santa Rita Union School District (District) via their consultant School Site Solutions, Inc. notified the Department of Toxic Substances Control (DTSC) on April 30, 2010 that it has complied with all public review and comment requirements for the Targeted Site Investigation Preliminary Environmental Assessment (TSI PEA) Report pursuant to Education Code section 17213.1(a)(6)(A). The District made the TSI PEA Report available for public review and comment from March 31, 2010 through April 29, 2010, and a public hearing was held on April 22, 2010. No public comments were received regarding the PEA Report.

In addition, DTSC reviewed the TSI PEA Report (LFR an ARCADIS Company, March 26, 2010) received April 8, 2010. The PEA Report presented investigation results and conclusions based on a health risk screening evaluation for the site.

According to the PEA Report, the proposed site consists of approximately 12.27-acre area located approximately 1,000 feet northeast of the intersection of East Boronda and Natividad Roads in Salinas, Monterey County, California (Site). The Site is located in an area predominantly used for agricultural purposes. The Monterey County Assessor's Office designates the parcel comprising the Site as Assessor's Parcel Number (APN) 153-091-001.

The PEA investigation was conducted to evaluate the Site for the presence of residual pesticides and arsenic in soil associated with the past agricultural activities and assess whether the residual pesticides and/or arsenic pose an unacceptable health risk. The

PEA Report identified organochlorine pesticides (OCPs) above the laboratory reporting limit in the soil samples analyzed. The concentrations of OCPs were compared to their respective California Human Health Screen Level (CHHSL) as established for residential soil by the Cal-EPA, Office of Environmental Health Hazard Assessment (OEHHA 2005). Dieldrin was the only OCP detected above its CHHSL of 35 micrograms per kilogram (μg/kg) for residential soil. Dieldrin was detected in samples HSB-13-0.5 at a concentration of 120 μg/kg and HSB-16-0.5 at 110 μg/kg. The concentrations of dieldrin in the remaining samples range from 8.5 μg/kg to 33 μg/kg with a 95% Upper Confidence Limit of 52.6 μg/kg using the dieldrin results from each of the 27 samples analyzed for OCPs (including samples HSB-13-0.5 and HSB-16-0.5). The 95% UCL of 52.6 μg/kg for dieldrin provides an estimated cancer risk of 2×10^{-6} which is within a risk management range of 1×10^{-6} to 5×10^{-6}. The PEA Report recommends no further environmental evaluation of the Site.

Based on review of the PEA Report, neither a release of hazardous material nor the presence of a naturally occurring hazardous material which would pose a threat to public health or the environment under unrestricted land use was indicated at the Site. Therefore, DTSC concurs with the conclusion of the PEA Report that further environmental investigation of the Site is not required and hereby approves the PEA Report as final.

Chemicals associated with agricultural activities may result in potential risks to human health or the environment. If agricultural activities continue on the subject Site after DTSC issues a no further action determination on the PEA report, DTSC cannot ensure the no further action determination will remain in effect.

This may have impacts for school projects where a District elects to postpone school construction and allow continued agricultural use of the property. The most recent chemical use documentation (i.e., local Agricultural Commissioner Pesticide Application Permits) regarding the quantity and types of agricultural chemicals used on the property was provided in the PEA Report. If the type of agricultural chemicals applied to the Site change after DTSC's no further action determination, DTSC recommends submittal of the chemical use documentation to DTSC at least three months prior to commencement of grading or other construction activities at the school site. DTSC will review the information, and if necessary, may recommend additional sample collection and analyses to assess potential impacts and ensure school site safety.

Pursuant to Education Code section 17213.2(e), if a previously unidentified release or threatened release of a hazardous material or the presence of a naturally occurring hazardous material is discovered anytime during construction at the Site, the District shall cease all construction activities at the Site and notify DTSC. Additional assessment, investigation or cleanup may be required.

If you have any questions regarding this project, you may contact the Project Manager at (916) 255-3577 or by e-mail at JLuevano@dtsc.ca.gov.

Sincerely,

for

Mr. Harold "Bud" Duke, P.G.
Acting Team Leader
Schools Team - Sacramento Office
Brownfields and Environmental Restoration Program

cc: (via e-mail)

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DTSC QA Manager
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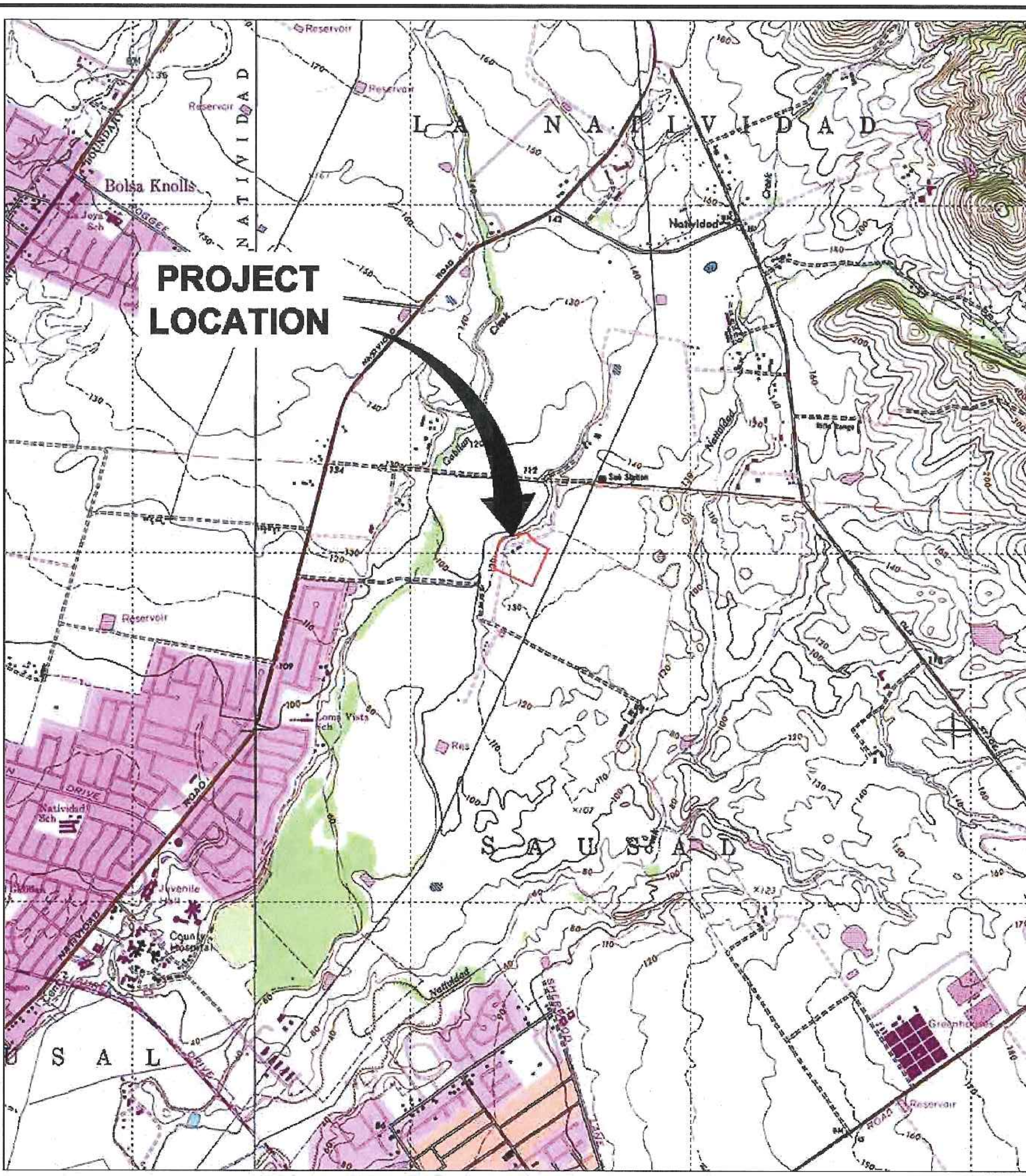
Schools Reading File – Sacramento Office

Targeted Site Investigation
Preliminary Environmental Assessment
Report for the
Creek Bridge Property
East Boronda Road and Hemingway Drive
Salinas, Monterey County, California
APN 153-091-006

April 28, 2010
RV009802.0000

Prepared for
California Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826-3200

Prepared by
LFR Inc. an ARCADIS company
1410 Rocky Ridge Drive, Suite 330
Roseville, California 95661



REFERENCE: BASE MAP USGS 14.5 MIN. SALINAS CALIFORNIA 2001

0 2500' 5000'

Approximate Scale: 1 In. = 2500 ft.

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION
PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

AERIAL SOURCE: GOOGLE EARTH

APPROXIMATE SITE LOCATION (AREA = 12 ACRES)

0 200' 400'

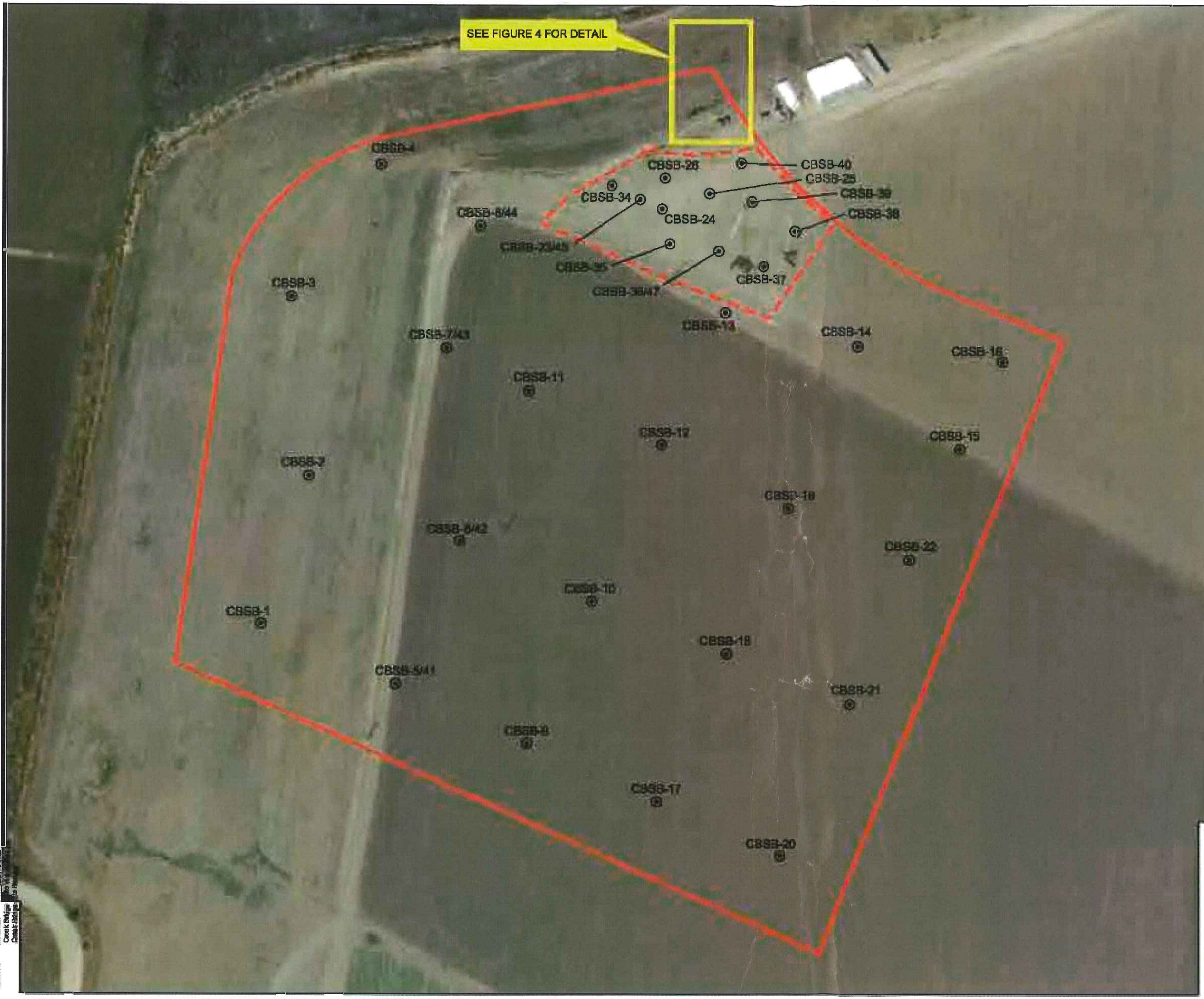
Approximate Scale: 1 in. = 250 ft.

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

SITE PLAN

ARCADIS

FIGURE
2



LEGEND:

APPROXIMATE SITE LOCATION (AREA = 12 ACRES)

POTENTIAL STAGING AREA

CBSB-9 SOIL SAMPLE LOCATION

0 100' 200'

Approximate Scale: 1 in. = 100 ft.

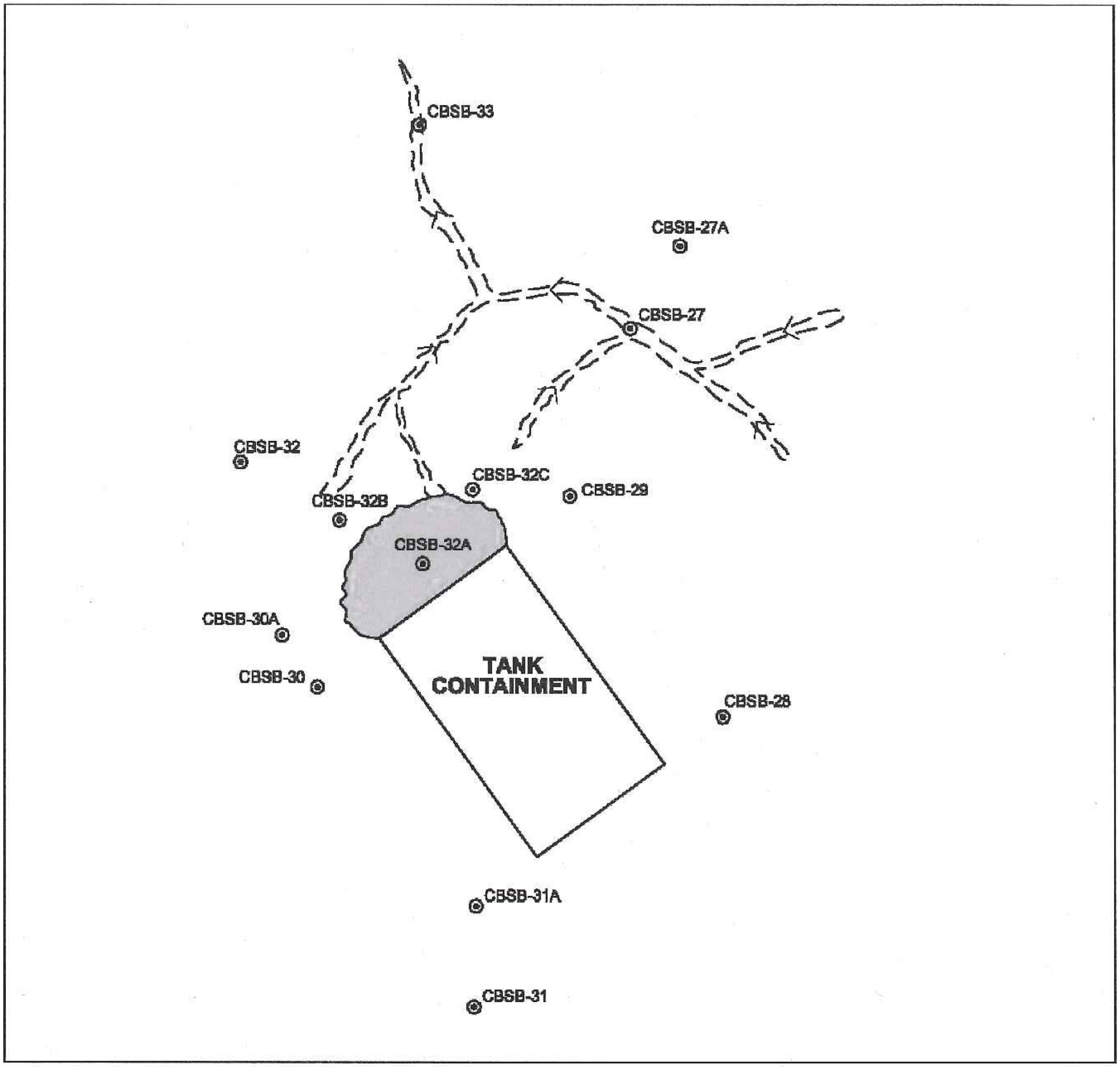
AERIAL SOURCE: GOOGLE EARTH

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

SAMPLING LOCATIONS

ARCADIS

FIGURE
3



CBSB-31 SOIL SAMPLE

LIGHTLY STAINED SURFACE SOIL

SURFACE WATER DRAINAGE CHANNEL

0 5' 10'

Approximate Scale: 1 in. = 5 ft.

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

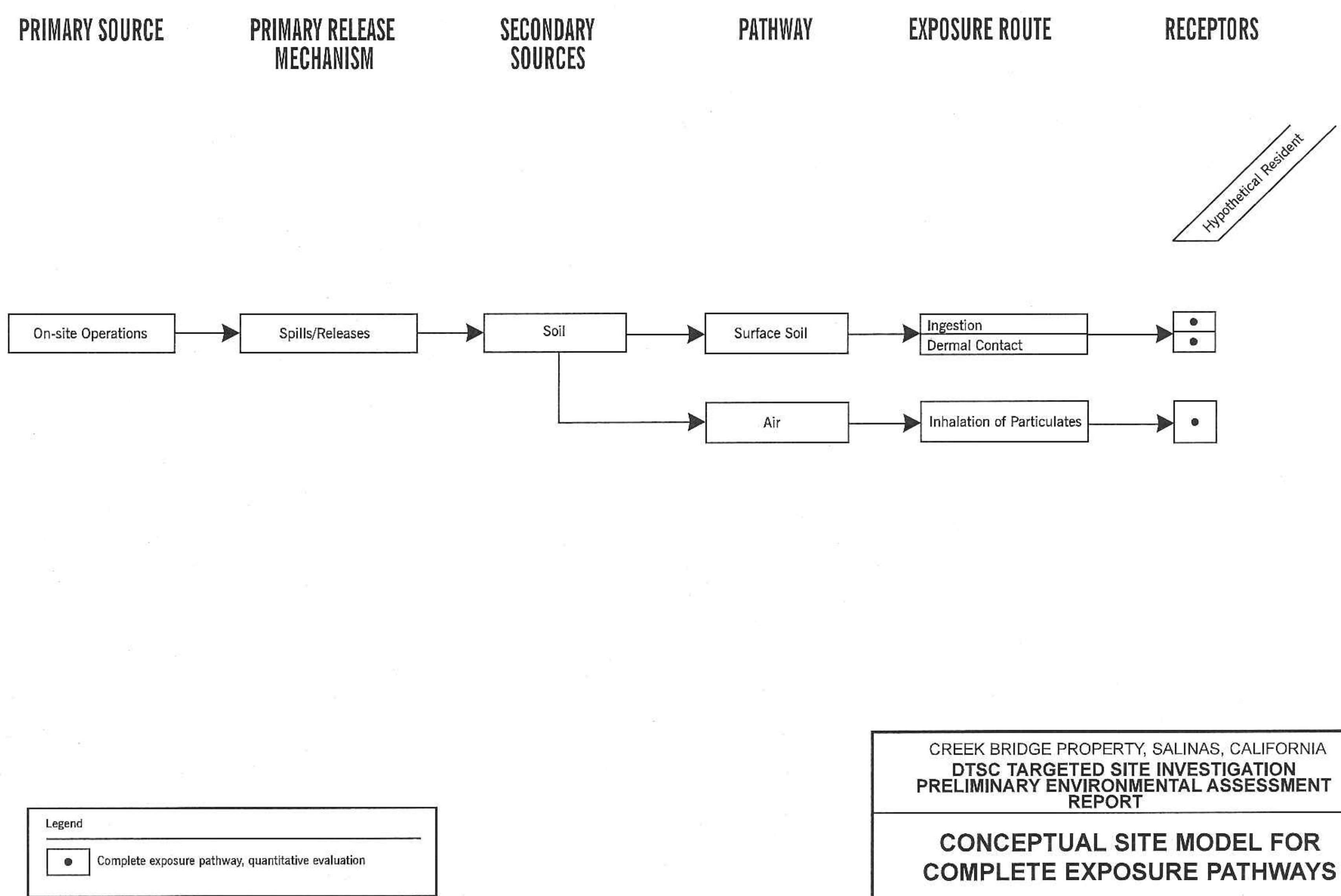
AST SAMPLING LOCATIONS

ARCADIS

FIGURE
4

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
LAYOUT: 4 SAVED: 3/23/2010 2:21 PM ACADVER: 17.1S (LMS TECH) PAGESETUP: — PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/29/2010 10:33 AM BY: REYES, ALEC
XREFS: IMAGES: PROJECTNAME: —
Creek Bridge - Site Vicinity Map.jpg
Creek Bridge-Site Plan.jpg

G:\ENVCAD\Emeryville\ACT\RV009802\0000\00001\2010DTSC\DTSC CREEK BRIDGE Conceptual Site Model.ai

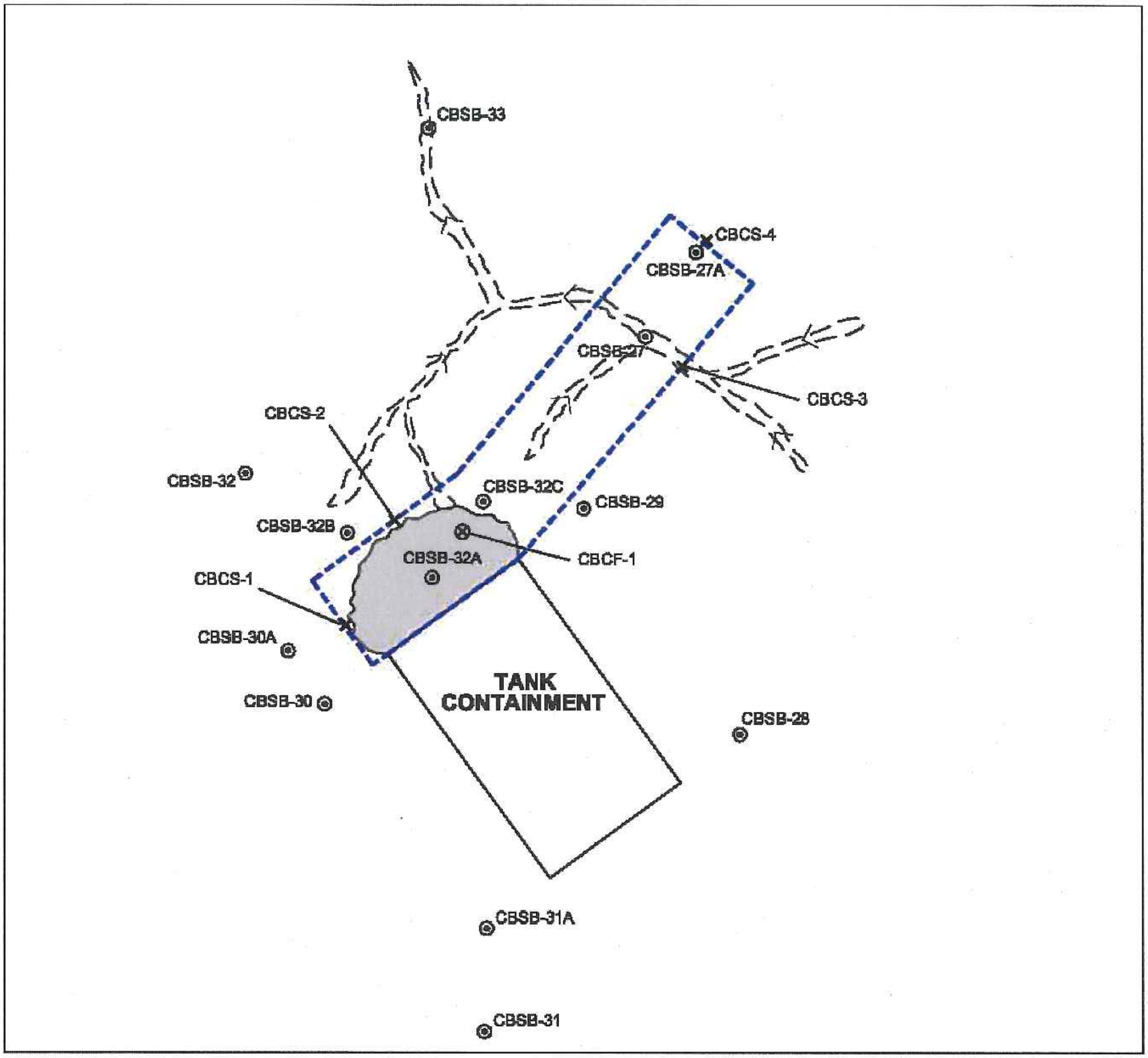


CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

CONCEPTUAL SITE MODEL FOR COMPLETE EXPOSURE PATHWAYS

ARCADIS

FIGURE
5



CBSB-31 PEA SOIL SAMPLE LOCATION

CBCS-2 HOUSEKEEPING SIDEWALL SAMPLE LOCATION

CBCF-1 HOUSEKEEPING BOTTOM SAMPLE LOCATION

LIGHTLY STAINED SURFACE SOIL

SURFACE WATER DRAINAGE CHANNEL

HOUSEKEEPING AREA

0 5' 10'

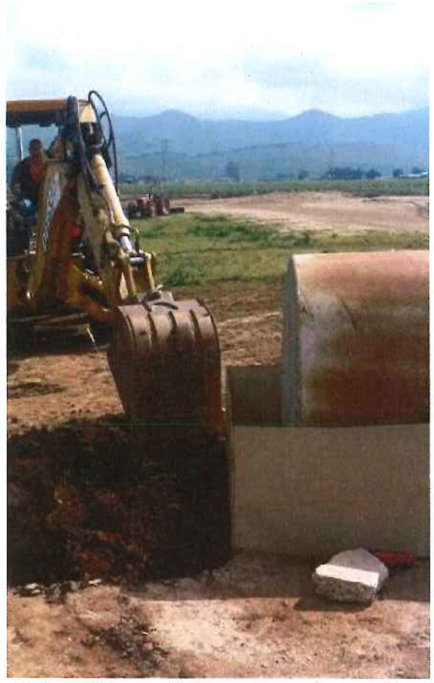
Approximate Scale: 1 in. = 5 ft.

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

HOUSEKEEPING AREA CONFIRMATION SAMPLING LOCATIONS

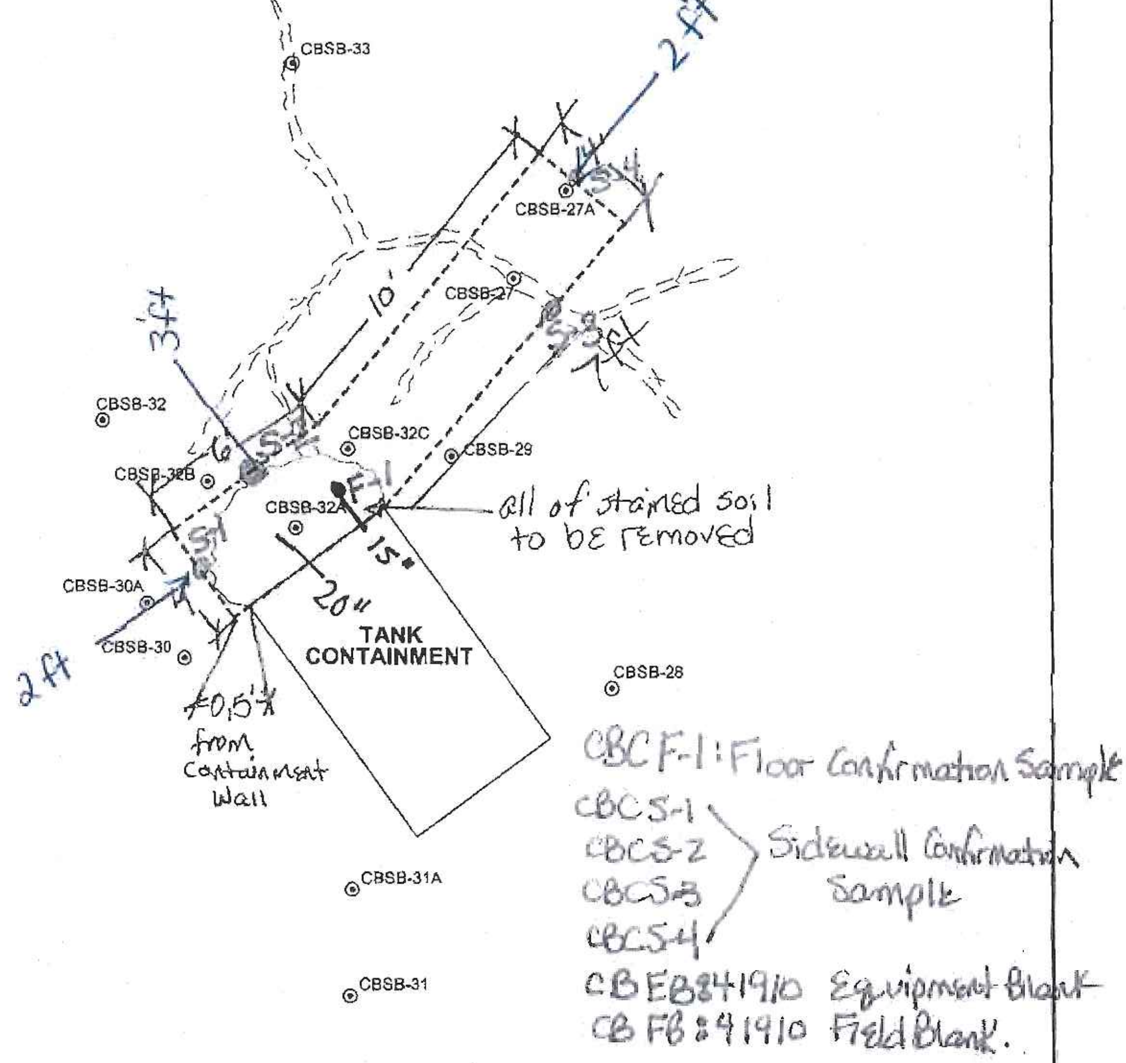
ARCADIS

FIGURE
6



Photograph 1: View of housekeeping soil assessment

Photograph 2: View of soil loading during housekeeping soil assessment



CBSB-31 PEA SOIL SAMPLE LOCATION

LIGHTLY STAINED SURFACE SOIL

SURFACE WATER DRAINAGE CHANNEL

HOUSEKEEPING AREA

0 5' 10'

Approximate Scale: 1 In. = 5 ft.

CREEK BRIDGE PROPERTY, SALINAS, CALIFORNIA
DTSC TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT

HOUSEKEEPING AREA

ARCADIS

FIGURE 2

Table 1
Sampling and Analysis Summary
Creek Bridge Property
Salinas, Monterey County, California

Sample ID	Matrix	Sample Depth (feet bgs)[1]	OCP[2]	Arsenic[3]	Lead[3]	TPH[4]	VOCs[5]	PAHs[6]	Hold
Agricultural Land Area									
CBSB-1,2,3,4-0.5 COMP	Soil	0.0-0.5	X						
CBSB-1-0.5	Soil	0.0-0.5		X					
CBSB-2-0.5	Soil	0.0-0.5							
CBSB-3-0.5	Soil	0.0-0.5							
CBSB-4-0.5	Soil	0.0-0.5							
CBSB-1-2.5	Soil	2.0-2.5							X
CBSB-2-2.5	Soil	2.0-2.5							X
CBSB-3-2.5	Soil	2.0-2.5							X
CBSB-4-2.5	Soil	2.0-2.5							X
CBSB-5,6,7,8-0.5 COMP	Soil	0.0-0.5	X						
CBSB-5-0.5	Soil	0.0-0.5		X					
CBSB-6-0.5	Soil	0.0-0.5							
CBSB-7-0.5	Soil	0.0-0.5		X					
CBSB-8-0.5	Soil	0.0-0.5							
CBSB-5-2.5	Soil	2.0-2.5							X
CBSB-6-2.5	Soil	2.0-2.5							X
CBSB-7-2.5	Soil	2.0-2.5							X
CBSB-8-2.5	Soil	2.0-2.5							X
CBSB-9,10,11,12-0.5 COMP	Soil	0.0-0.5	X						
CBSB-9-0.5	Soil	0.0-0.5							
CBSB-10-0.5	Soil	0.0-0.5		X					
CBSB-11-0.5	Soil	0.0-0.5							
CBSB-12-0.5	Soil	0.0-0.5							
CBSB-13,14,15,16-0.5 COMP	Soil	0.0-0.5	X						
CBSB-13-0.5	Soil	0.0-0.5							
CBSB-14-0.5	Soil	0.0-0.5							
CBSB-15-0.5	Soil	0.0-0.5							
CBSB-16-0.5	Soil	0.0-0.5		X					
CBSB-13-2.5	Soil	2.0-2.5							X
CBSB-14-2.5	Soil	2.0-2.5							X
CBSB-15-2.5	Soil	2.0-2.5							X
CBSB-16-2.5	Soil	2.0-2.5							X
CBSB-17,18,19-0.5 COMP	Soil	0.0-0.5	X						
CBSB-17-0.5	Soil	0.0-0.5		X					
CBSB-18-0.5	Soil	0.0-0.5							
CBSB-19-0.5	Soil	0.0-0.5							
CBSB-17-2.5	Soil	2.0-2.5							X
CBSB-18-2.5	Soil	2.0-2.5							X
CBSB-19-2.5	Soil	2.0-2.5							X

Table 1
Sampling and Analysis Summary
Creek Bridge Property
Salinas, Monterey County, California

Sample ID	Matrix	Sample Depth (feet bgs)[1]	OCP[2]	Arsenic[3]	Lead[3]	TPH[4]	VOCs[5]	PAHs[6]	Hold
CBSB-20,21,22-0.5 COMP	Soil	0.0-0.5	X						
CBSB-20-0.5	Soil	0.0-0.5							
CBSB-21-0.5	Soil	0.0-0.5							
CBSB-22-0.5	Soil	0.0-0.5		X					
Former Structure									
CBSB-23-0.5	Soil	0.0-0.5	X	X	X				
CBSB-24-0.5	Soil	0.0-0.5	X	X	X				
CBSB-25-0.5	Soil	0.0-0.5	X	X	X				
CBSB-26-0.5	Soil	0.0-0.5	X	X	X				
CBSB-23-2.5	Soil	2.0-2.5							X
CBSB-24-2.5	Soil	2.0-2.5							X
CBSB-25-2.5	Soil	2.0-2.5							X
CBSB-26-2.5	Soil	2.0-2.5							X
Aboveground Storage Tank Area									
Sample Locations No Longer In-Place Following The Housekeeping Activity									
CBSB-27-0.5	*Soil*	*0.0-0.5*			*X*	*X*	*X*	*X*	
CBSB-27A-0.5	*Soil*	*0.0-0.5*				*X*			
CBSB-32A-0.5	*Soil*	*0.0-0.5*				*X*			
CBSB-32C-0.5	*Soil*	*0.0-0.5*							*X*
Sample Locations In-Place Following The Housekeeping Activity									
CBSB-28-0.5	Soil	0.0-0.5			X	X		X	
CBSB-29-0.5	Soil	0.0-0.5			X	X		X	
CBSB-30-0.5	Soil	0.0-0.5			X	X		X	
CBSB-30A-0.5	Soil	0.0-0.5				X			
CBSB-31-0.5	Soil	0.0-0.5							X
CBSB-31A-0.5	Soil	0.0-0.5			X	X		X	
CBSB-32-0.5	Soil	0.0-0.5			X	X		X	
CBSB-32B-0.5	Soil	0.0-0.5				X			
CBSB-33-0.5	Soil	0.0-0.5			X	X		X	
CBCF-1	Soil	2.0				X			
CBCS-1	Soil	0.5				X			
CBCS-2	Soil	0.5				X			
CBCS-3	Soil	0.5				X			
CBCS-4	Soil	0.5				X			
CBSB-27-2.5	Soil	2.0-2.5				X			
CBSB-32A-2.5	Soil	2.0-2.5				X			
CBSB-27-4.0	Soil	3.5-4.0							*
CBSB-28-4.0	Soil	3.5-4.0							*
CBSB-29-4.0	Soil	3.5-4.0							*
CBSB-30-4.0	Soil	3.5-4.0							*
CBSB-31-4.0	Soil	3.5-4.0							*
CBSB-32-4.0	Soil	3.5-4.0							*
CBSB-33-4.0	Soil	3.5-4.0							*

Table 1
Sampling and Analysis Summary
Creek Bridge Property
Salinas, Monterey County, California

Sample ID	Matrix	Sample Depth (feet bgs)[1]	OCP[2]	Arsenic[3]	Lead[3]	TPH[4]	VOCs[5]	PAHs[6]	Hold
Potential Storage Area									
CBSB-34-0.5	Soil	0.0-0.5	X	X					
CBSB-35-0.5	Soil	0.0-0.5	X	X					
CBSB-36-0.5	Soil	0.0-0.5	X	X					
CBSB-37-0.5	Soil	0.0-0.5	X	X					
CBSB-38-0.5	Soil	0.0-0.5	X	X					
CBSB-39-0.5	Soil	0.0-0.5	X	X					
CBSB-40-0.5	Soil	0.0-0.5	X	X					
QA/QC Samples									
Duplicate Samples									
CBSB-41,42,43,44-0.5 COMP	Soil	0.0-0.5	X						
CBSB-41-0.5 (co-located with sample CBSB-5)	Soil	0.0-0.5	X	X					
CBSB-42-0.5 (co-located with sample CBSB-6)	Soil	0.0-0.5	X						
CBSB-43-0.5 (co-located with sample CBSB-7)	Soil	0.0-0.5	X						
CBSB-44-0.5 (co-located with sample CBSB-8)	Soil	0.0-0.5	X						
CBSB-45-0.5 (co-located with sample CBSB-23)	Soil	0.0-0.5	X						
CBSB-46-0.5 (co-located with sample CBSB-27); No Longer In-Place	*Soil*	*0.0-0.5*			*X*	*X*	*X*	*X*	
CBSB-47-0.5 (co-located with sample CBSB-36)	Soil	0.0-0.5		X					
CBCF-2 (co-collected with sample CBCF-1)	Soil	2.0				X			
Equipment and Field Blanks									
EB	Water	--	X	X	X	X	X	X	
FB	Water	--	X	X	X	X	X	X	
Total Number of Soil Samples Analyzed:			23	20	12	20	2	8	21

Notes:
bgs = Below Ground Surface
"X" indicates sample to be analyzed for noted compound during initial analytical event.
* = Samples not collected
1. Sample identification indicates bottom depth of soil sample.
2. Organochlorine pesticides (OCPs) were analyzed using U.S. EPA Method 8081B.
3. Arsenic and lead were analyzed using U.S. EPA Method 6020.
4. Total petroleum hydrocarbons (TPH) were analyzed using modified U.S. EPA Method 8015D to include carbon chain distinction
5. Volatile organic compounds (VOCs) were analyzed using U.S. EPA Method including BTEX, napthalene, MTBE, and oxygenate compounds
6. Polycyclic aromatic hydrocarbons (PAH) including napthalene were analyzed using U.S. EPA Method 8270SIM

Table 2
Summary of Anlytical Results, Pesticides
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth*	Date Sampled	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	Chlordane (Technical)	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	gamma-BHC	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
		Method:	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B
		Units:	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
CBSB-1,2,3,4-0.0-0.5 COMP	0.0-0.5	03/10/10	<3.3	12	4.6	<1.7	<1.7	<1.7	<30	<1.7	<3.3	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
CBSB-5,6,7,8-0.0-0.5 COMP	0.0-0.5	03/10/10	62	140	95	<1.7	<1.7	<1.7	<30	<1.7	22	<1.7	<3.3	3.4	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
CBSB-9,10,11,12-0.0-0.5 COMP	0.0-0.5	03/10/10	<33	120	100	<1.7	<1.7	<1.7	<30	<1.7	21	<1.7	5	4.5	<3.3	4	<1.7	<1.7	<1.7	<17	<60
CBSB-17,18,19-0.0-0.5 COMP	0.0-0.5	03/10/10	39	110	81	<1.7	<1.7	<1.7	<30	<1.7	21	<1.7	<3.3	<3.3	<3.3	4.4	<1.7	<1.7	<1.7	<17	<60
CBSB-20,21,22-0.0-0.5 COMP	0.0-0.5	03/10/10	<16	160	110	<1.7	<1.7	<1.7	<30	<1.7	22	<1.7	6.2	4.4	<3.3	4.4	<1.7	<1.7	<1.7	<17	<60
CBSB-41,42,43,44-0.5 COMP	0.0-0.5	03/10/10	<33	110	60	<17	<17	<17	<300	<17	55	<17	<33	<33	<33	<33	<17	<17	<17	<170	<600
CBSB-23-0.0-0.5	0.0-0.5	03/10/10	<3.3	17	26	<1.7	<1.7	<1.7	<30	<1.7	5.7	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
CBSB-24-0.0-0.5	0.0-0.5	03/10/10	19	130	140	<1.7	<1.7	<1.7	<30	<1.7	19	<1.7	7.2	5.5	<3.3	5.3	<1.7	<1.7	<1.7	<17	<60
CBSB-25-0.0-0.5	0.0-0.5	03/10/10	<16	120	73	<1.7	<1.7	<1.7	<30	<1.7	13	<1.7	5	4.4	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
CBSB-26-0.0-0.5	0.0-0.5	03/10/10	5.0	21	43	<1.7	<1.7	<1.7	<30	<1.7	4.0	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
CBSB-34-0.0-0.5	0.0-0.5	03/10/10	7.4	88	110	<1.7	<1.7	<1.7	<30	<1.7	9.0	<1.7	4.8	<3.2	<3.2	3.9	<1.7	<1.7	<1.7	<17	<59
CBSB-35-0.0-0.5	0.0-0.5	03/10/10	20	53	65	<1.7	<1.7	<1.7	<30	<1.7	<3.3	<1.7	3.8	5.4	5.3	<3.3	2.9	<1.7	<1.7	<17	<60
CBSB-36-0.0-0.5	0.0-0.5	03/10/10	8.6	39	41	<1.7	<1.7	<1.7	<30	<1.7	<3.3	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<59
CBSB-37-0.0-0.5	0.0-0.5	03/10/10	14	120	100	<1.7	<1.7	<1.7	<30	<1.7	19	<1.7	<3.3	4.3	4.0	<3.3	<1.7	<1.7	<1.7	33	<60
CBSB-38-0.0-0.5	0.0-0.5	03/10/10	37	94	81	<1.7	<1.7	<1.7	<30	<1.7	18	<1.7	<3.3	4.4	3.8	<3.3	<1.7	<1.7	<1.7	33	<59
CBSB-39-0.0-0.5	0.0-0.5	03/10/10	11	210	110	<1.7	<1.7	<1.7	<30	<1.7	15	<1.7	<3.3	4.2	<3.3	<3.3	<1.7	<1.7	<1.7	21	<60
CBSB-40-0.0-0.5	0.0-0.5	03/10/10	12	40	30	<1.7	<1.7	<1.7	<30	<1.7	12	<1.7	<3.3	<3.3	<3.3	<3.3	<1.7	<1.7	<1.7	<17	<60
CBSB-41-0.5	0.0-0.5	03/10/10	<33	62	<33	<17	<17	<17	<300	<17	<33	<17	<33	<33	<33	<33	<17	<17	<17	<170	<600
CBSB-42-0.5	0.0-0.5	03/10/10	<33	45	<33	<17	<17	<17	<300	<17	<33	<17	<33	<33	<33	<33	<17	<17	<17	<170	<590
CBSB-43-0.5	0.0-0.5	03/10/10	<33	60	<33	<17	<17	<17	<300	<17	<33	<17	<33	<33	<33	<33	<17	<17	<17	<170	<600
CBSB-44-0.5	0.0-0.5	03/10/10	<33	55	42	<17	<17	<17	<300	<17	<33	<17	<33	<33	<33	<33	<17	<17	<17	<170	<600
Statisitical Summary																					
		Number of Samples:	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		Number of Detects:	11	20	17	0	0	0	0	0	13	0	6	9	3	5	1	0	0	3	0
		Minimum:	<3.3	12	4.6	<1.7	<1.7	1.7	<30	<1.7	<3.3	<1.7	<3.3	<3.2	<3.2	<3.3	<1.7	<1.7	<1.7	<17	<59
		Maximum:	62	210	140	<17	<17	17	<300	<17	55	<17	<33	<33	<33	<33	<17	<17	<17	<170	<600
		Average:	22.46	86.00	67.17	5.34	5.34	5.34	94.29	5.34	18.93	5.34	10.95	10.88	10.52	10.63	5.40	5.34	5.34	55.14	187.86
		Standard Deviation:	15.14	52.04	36.47	6.68	6.68	6.68	117.84	6.68	13.13	6.68	12.67	12.69	12.89	12.82	6.65	6.68	6.68	65.96	234.95
		95% UCL:	23.60	105.33	80.59	--	--	--	--	--	20.55	--	11.38	11.36	10.85	11.02	--	--	--	--	--
Screening Levels																					
		CHHSL:	2300	1600	1600	33	--	--	430	--	35	--	--	--	21000	--	--	130	--	340000	460
Duplicate Summary																					
CBSB-45-0.0-0.5 (Duplicate of CBSB-23-0.0-0.5)	0.0-0.5	03/10/10	<3.3	49	57	<1.7	<1.7	<1.7	<30	<1.7	<33	<1.7	<3.3	<3.3	<33	<33	<1.7	<1.7	<1.7	<170	<60
CBSB-47-0.0-0.5 (Duplicate of CBSB-36-0.0-0.5)	0.0-0.5	03/10/10	10	78	77	9.3	<1.7	2.9	<30	<1.7	<3.2	<1.7	<3.2	<3.2	<3.2	<3.2	<1.7	<1.7	<1.7	<17	<59

Table 2
Summary of Anlytical Results, Pesticides
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth*	Date Sampled	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	Chlordane (Technical)	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	gamma-BHC	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
		Method:	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B	EPA 8081B
		Units:	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
QA/QC Summary																					
EQUIP BLANK	--	03/10/10	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.9	<0.05	<0.09	<0.05	<0.09	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.0-0.5	<0.9
FIELD BLANK	--	03/10/10	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.9	<0.05	<0.09	<0.05	<0.09	<0.09	<0.09	<0.09	<0.05	<0.05	<0.05	<0.0-0.5	<0.9

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-- = Not Analyzed
mg/Kg = Milligrams per kilogram.
µg/Kg = Micrograms per kilogram.
mg/L = Milligrams per liter.
µg/L = Micrograms per liter.
CHHSL = California Human Health Screening Levels for Soil, Residential Land Use
ESL = Environmental Screening Levels
Y = Sample exhibits chromatographic pattern which does not resemble standard
* = sample Depth measured in feet below ground surface
** = DTSC Risk Management Level

Table 3
Summary of Anlytical Results, Metals and Total Petroleum Hydrocarbons
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth	Date Sampled	Arsenic	Lead	Gasoline C7-C12	Diesel C10-C24	Motor Oil C24-C36
		Method:	EPA 6010B	EPA 6010B	EPA 8015B	EPA 8015B	EPA 8015B
		Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Samples No Longer In-Place Following The Housekeeping Activity							
CBSB-27-0.5	*0.0-0.5*	*03/10/10*	--	*5.1*	*<0.97*	***990***	*62*
CBSB-27A-0.5	*0.0-0.5*	*03/18/10*	--	--	--	***190***	*45*
CBSB-32A-0.5	*0.0-0.5*	*03/18/10*	--	--	--	***6600***	***800***
Samples In-Place Following The Housekeeping Activity							
CBSB-1-0.5	0.0-0.5	03/10/10	3.2	--	--	--	--
CBSB-5-0.5	0.0-0.5	03/10/10	2.6	--	--	--	--
CBSB-7-0.5	0.0-0.5	03/10/10	2.2	--	--	--	--
CBSB-10-0.5	0.0-0.5	03/10/10	2.7	--	--	--	--
CBSB-16-0.5	0.0-0.5	03/10/10	2.8	--	--	--	--
CBSB-17-0.5	0.0-0.5	03/10/10	2.5	--	--	--	--
CBSB-22-0.5	0.0-0.5	03/10/10	2.5	--	--	--	--
CBSB-23-0.5	0.0-0.5	03/10/10	2.3	4.7	--	--	--
CBSB-24-0.5	0.0-0.5	03/10/10	2.4	5.9	--	--	--
CBSB-25-0.5	0.0-0.5	03/10/10	2.8	5.6	--	--	--
CBSB-26-0.5	0.0-0.5	03/10/10	2.1	4.1	--	--	--
CBSB-28-0.5	0.0-0.5	03/09/10	--	4.7	<0.98	1.8	17
CBSB-29-0.5	0.0-0.5	03/09/10	--	4.7	<1.1	1.2	6.4
CBSB-30-0.5	0.0-0.5	03/09/10	--	4.6	<1.0	4.3	18
CBSB-30A-0.5	0.0-0.5	03/18/10	--	--	--	8.4	43
CBSB-31-0.5	0.0-0.5	03/09/10	--	--	<1.1	--	--
CBSB-31A-0.5	0.0-0.5	03/10/10	--	5.1	<1.0	22	40
CBSB-32-0.5	0.0-0.5	03/10/10	--	4.4	<1.0	8.4	43
CBSB-32B-0.5	0.0-0.5	03/18/10	--	--	--	7.3 Y	43
CBSB-33-0.5	0.0-0.5	03/10/10	--	4.8	<0.96	9.2	23
CBSB-34-0.5	0.0-0.5	03/10/10	2.4	--	--	--	--
CBSB-35-0.5	0.0-0.5	03/10/10	2.4	--	--	--	--
CBSB-36-0.5	0.0-0.5	03/10/10	2.5	--	--	--	--
CBSB-37-0.5	0.0-0.5	03/10/10	2.6	--	--	--	--
CBSB-38-0.5	0.0-0.5	03/10/10	3.0	--	--	--	--
CBSB-39-0.5	0.0-0.5	03/10/10	3.0	--	--	--	--
CBSB-40-0.5	0.0-0.5	03/10/10	2.3	--	--	--	--
CBCF-1	2.0	04/19/10	--	--	--	1.7 Y	<5.0
CBCS-1	0.5	04/19/10	--	--	--	<1.0	<5.0
CBCS-2	0.5	04/19/10	--	--	--	<1.0	<5.0
CBCS-3	0.5	04/19/10	--	--	--	1.5 Y	9.3

Table 3
Summary of Anlytical Results, Metals and Total Petroleum Hydrocarbons
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth	Date Sampled	Arsenic EPA 6010B mg/Kg	Lead EPA 6010B mg/Kg	Gasoline C7-C12 EPA 8015B mg/Kg	Diesel C10-C24 EPA 8015B mg/Kg	Motor Oil C24-C36 EPA 8015B mg/Kg
CBCS-4	0.5	04/19/10	--	--	--	2.1 Y	8.8
CBSB-27-2.5	2.0-2.5	03/18/10	--	--	--	10	<5.0
CBSB-32A-2.5	2.0-2.5	03/18/10	--	--	--	22	<5.0
Statisitical Summary							
		Number of Samples:	18	11	8	15	15
		Number of Detects:	18	11	0	13	10
		Minimum:	2.1	4.1	<0.96	<1.0	<5.0
		Maximum:	3.2	5.9	1.1	22	43
		Standard Deviation:	0.30	0.54	0.06	7.02	15.86
		95% UCL:	2.69	5.16	--	11.62	29.71
Screening Levels							
		DTSC Risk Management Level:	12	--	--	--	--
		CHHSL:	--	80	--	--	--
		ESL:	--	--	83	83	370
Duplicate Summary							
CBSB-41-0.5 (Duplicate of CBSB-5-0.5)	0.0-0.5	3/10/2010	2.4	--	--	--	--
CBSB-46-0.5 (Duplicate of CBSB-27-0.5)	*0.0-0.5*	*03/10/10*	--	*4.8*	*<1*	***130***	*26*
CBSB-47-0.5 (Duplicate of CBSB-36-0.5)	0.0-0.5	03/10/10	2.6	--	--	--	--
CBCF-2 (Duplicate of CBCF-	2.0	04/19/10	--	--	--	1.3 Y	<5.0
QA/QC Summary							
EQUIP BLANK	--	03/10/10	<5	<5	<50	<50	<300
FIELD BLANK	--	03/10/10	<5	<5	<50	<50	<300

< = Not detected above laboratory reporting limit indicated.
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mg/Kg = Milligrams per kilogram.
µg/Kg = Micrograms per kilogram.
mg/L = Milligrams per liter.
µg/L = Micrograms per liter.
CHHSL = California Human Health Screening Levels for Soil, Residential Land Use
ESL = Environmental Screening Levels
Y = Sample exhibits chromatographic pattern which does not resemble standard
* = sample Depth measured in feet below ground surface
** = DTSC Risk Management Level

Table 4
Summary of Anlytical Results, Volatile Organic Compounds
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth*	Date Sampled	1,2-Dibromoethane	1,2-Dichloroethane	Benzene	Ethyl tert-Butyl Ether (ETBE)	Ethylbenzene	Isopropyl Ether (DIPE)	m,p-Xylenes	Methyl tert-Amyl Ether (TAME)	MTBE	o-Xylene	tert-Butyl Alcohol (TBA)	Toluene
		Method:	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B
		Units:	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
CBSB-27-0.5	0.0-0.5	03/10/10	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1	<100	<5.1
Screening Levels														
Duplicate Summary														
CBSB-46-0.5 (Duplicate of CBSB-27-0.5)	0.5	03/10/10	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<91	<4.6

< = Not detected above laboratory reporting limit indicated.
-- = Not Analyzed
mg/Kg = Milligrams per kilogram.
µg/Kg = Micrograms per kilogram.
mg/L = Milligrams per liter.
µg/L = Micrograms per liter.
CHHSL = California Human Health Screening Levels for Soil, Residential Land Use
ESL = Environmental Screening Levels
Y = Sample exhibits chromatographic pattern which does not resemble standard
* = sample Depth measured in feet below ground surface
** = DTSC Risk Management Level

Table 5
Summary of Anlytical Results, PAHs
Creek Bridge, Salinas, Monterey County, CA.

Sample ID	Sample Depth*	Date Sampled	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Method:	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM	EPA 8270C-SIM
		Units:	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
CBSB-27-0.5	0.5	03/10/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	11
CBSB-28-0.5	0.5	03/09/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CBSB-29-0.5	0.5	03/09/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CBSB-30-0.5	0.5	03/09/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CBSB-31A-0.5	0.5	03/10/10	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
CBSB-32-0.5	0.5	03/10/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CBSB-33-0.5	0.5	03/10/10	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
Screening Levels																		
Duplicate Summary																		
CBSB-46-0.5 (Duplicate of CBSB-27-0.5)	0.5	03/10/10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
QA/QC Summary																		
EQUIP BLANK	--	03/10/10	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
FIELD BLANK	--	03/10/10	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09

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mg/Kg = Milligrams per kilogram.
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CHHSL = California Human Health Screening Levels for Soil, Residential Land Use
ESL = Environmental Screening Levels
Y = Sample exhibits chromatographic pattern which does not resemble standard
* = sample Depth measured in feet below ground surface
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Table 6
Carcinogenic Risk Estimate for Compounds of Potential Concern
Using Maximum Concentrations of Site Data
Creek Bridge
Salinas, California

Chemical	Oral Cancer Slope Factor (Sfo) $(mg/kg\text{-}day)^{-1}$	Inhalation Cancer Slope Factor (Sfi) $(mg/kg\text{-}day)^{-1}$	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil[1] (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m^3)	RISK for Soil Pathway	RISK for Air Pathway
Pesticides							
DDD	3.40E-01	3.40E-01	0.05	0.062	3.1E-09	**5.E-08**	**2.E-10**
DDE	3.40E-01	3.40E-01	0.05	0.210	1.1E-08	**2.E-07**	**5.E-10**
DDT	3.40E-01	3.40E-01	0.05	0.140	7.0E-09	**1.E-07**	**4.E-10**
Dieldrin	1.6E+01	1.6E+01	0.05	0.055	2.8E-09	**2.E-06**	**7.E-09**
Risk for Pathway						**2.6.E-06**	**7.6.E-09**
TOTAL RISK (across all chemicals and exposure routes):			**3.E-06**				

Notes:

[1] Maximum detected concentration in soil

mg/kg = mlligrams per kilogram
mg/kg-day = milligrams per kilogram per day
mg/m^3 = milligrams per cubic meter

DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyltrichloroethylene

<u>For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):</u>
RISK = ((Cs x SFo) x (1.57 x 10^{-6})) + ((Cs x SFo) x (1.87 x 10^{-5}) x ABS)

<u>For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):</u>
RISK = (Ca x SFi) x 0.149
where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):
Ca = Cs x (5.0 x 10^{-8} kg/m^3)

Table 7
Noncarcinogenic Hazard Estimate for Compounds of Potential Concern
Using Maximum Concentrations of Site Data
Creek Bridge
Salinas, California

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil1 (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m3)	HAZARD for Soil Pathway	HAZARD for Air Pathway
Pesticides							
4,4-DDD	---	---	0.05	0.062	3.1E-09	--	--
4,4-DDE	---	---	0.05	0.210	1.1E-08	--	--
4,4-DDT	5.0E-04	5.0E-04	0.05	0.140	7.0E-09	**5.E-03**	**9.E-06**
Dieldrin	5.0E-05	--	0.05	0.055	2.8E-09	**2.E-02**	--
Hazard Index for Pathway						**0.03**	**8.95E-06**
TOTAL HAZARD (across all chemicals and exposure routes):			**0.03**				

Notes:

[1] Maximum detected concentration in soil

mg/kg = milligrams per kilogram

mg/kg-day = milligrams per kilogram per day

mg/m^3 = mlligrams per cubic meter

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenyltrichloroethylene

DDT = dichlorodiphenyltrichloroethane

For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):

HAZARD = ((Cs/RfDo) x (1.28 x 10-5)) + ((Cs/RfDo) x (1.28 x 10-4) x ABS)

For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):

HAZARD = (Ca/RfDi) x 0.639

where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):

Ca = Cs x (5.0 x 10^{-8} kg/m^3)

Department of Toxic Substances Control

Maziar Movassaghi
Acting Director
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Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

April 30, 2010

Mr. Jim Koenig
Business Services, Assistant Superintendent
Alisal Union Elementary School District
1205 East Market Street
Salinas, California 93905

APPROVAL OF TARGETED SITE INVESTIGATION PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT, ELEMENTARY SCHOOL NUMBER 12 – CREEK BRIDGE PROPERTY, EAST BORONDA ROAD AND HEMINGWAY DRIVE, SALINAS (SITE CODE 201851)

Dear Mr. Koenig:

The Department of Toxic Substances Control (DTSC) reviewed the revised Targeted Site Investigation Preliminary Environmental Report (TSI PEA - LFR Inc. an ARCADIS Company, April 28, 2010) received on April 29, 2010. The TSI PEA Report was revised in response to DTSC comments on the draft version submitted on April 20, 2010. The revised TSI PEA Report presents investigation results and conclusions based on a health risk screening evaluation for the site.

In addition, the Alisal Union Elementary School District (District) notified DTSC on April 29, 2010, that it has complied with all public review and comment requirements for the TSI PEA Report pursuant to Education Code § 17213.1, (a)(6)(A). The District made the TSI PEA Report available for public review and comment from March 31, 2010 through April 29, 2010, and a public hearing was held on April 14, 2010. No public comments were received regarding the TSI PEA Report.

According to the TSI PEA Report, the site is 12.01 acres located approximately 1,000 feet north of the intersection of East Boronda Road and Hemingway Drive in Salinas, Monterey County, California. The site is designated as Assessor's Parcel Number (APN) 153-091-006. The District plans to acquire and develop the site for use as an elementary school (K-6 grades). The proposed school is anticipated to have approximately 800 students with 40 classrooms.

A TSI PEA soil investigation was conducted at the site to evaluate the potential presence of lead from lead-based paint and organochlorine pesticides (OCPs) from termiticide in soils adjacent to the former wooden structure; potential residual pesticides and arsenic in site soils from historic and current application of agricultural chemicals; and, total petroleum hydrocarbons (TPHs), including associated compounds lead, volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs) in soils from potential releases of petroleum hydrocarbons adjacent to the above storage tank (AST). The TSI PEA sampling results were used to assess if lead, arsenic, OCPs, and/or TPH, including associated TPH compounds, in soil pose an unacceptable health risk under unrestricted land use standards.

The TSI PEA Report indicated that concentrations of OCPs and lead in soil were below their respective California Human Health Screening Levels (CHHSLs) as established by the Office of Environmental Health Hazard Assessment. TPH as gasoline, VOCs and PAHs were not detected above the laboratory reporting limits. Concentrations of arsenic in soil were below levels of concern. In addition, after conducting a housekeeping action adjacent to the AST, analytical results indicated that residual concentrations of diesel and motor oil were below their respective residential soil Environmental Screening Levels established by the California Regional Water Quality Control Board. The TSI PEA Report concludes no further action is required on the site.

Based on review of the TSI PEA Report, neither a release of hazardous material nor the presence of a naturally occurring hazardous material which would pose a threat to public health or the environment under unrestricted land use was indicated at the site. Therefore, DTSC concurs with the conclusion of the TSI PEA Report that further environmental investigation of the site is not required and hereby approves the TSI PEA Report.

Chemicals associated with agricultural activities may result in potential risks to human health or the environment. If agricultural activities continue on the subject site after DTSC issues a no further action determination on the TSI PEA Report, DTSC cannot ensure the no further action determination will remain in effect.

This may have impacts for school projects where a District elects to postpone school construction and allow continued agricultural use of the property. The most recent chemical use documentation (i.e., local Agricultural Commissioner Pesticide Application Permits) regarding the quantity and types of agricultural chemicals used on the property was provided in the PEA Report. If the type of agricultural chemicals applied to the site change after DTSC's no further action determination, DTSC recommends submittal of the chemical use documentation to DTSC at least three months prior to commencement of grading or other construction activities at the school site. DTSC will review the information, and if necessary, may recommend additional sample collection and analyses to assess potential impacts and ensure school site safety.

Pursuant to Education Code §17213.2(e), if a previously unidentified release or threatened release of a hazardous material or the presence of a naturally occurring hazardous material is discovered anytime during construction at the site, the district shall cease all construction activities at the site and notify DTSC. Additional assessment, investigation or cleanup may be required.

If you have any questions regarding the project, please contact Ms. Mellan Songco, the DTSC Project Manager at (916) 255-6527 or via e-mail at MSongco@dtsc.ca.gov or myself at (916) 255-3695 or vial e-mail at BDuke@dtsc.ca.gov.

Sincerely,

for

Harold "Bud" Duke, P.G., Acting Team Leader
School Team - Sacramento Office
Brownfields Environmental Restoration Program

cc: (via e-mail)

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PRELIMINARY ENVIRONMENTAL ASSESSMENT
PROPOSED CREEKBRIDGE MIDDLE SCHOOL SITE
APN 153-091-006; 153-091-007
SALINAS, CALIFORNIA

PREPARED FOR:	SALINAS UNION HIGH SCHOOL DISTRICT 320 ROSE STREET SALINAS, CALIFORNIA 93901
BY:	KLEINFELDER 40 CLARK STREET, SUITE J SALINAS, CA 93901
DATE:	May 13, 2010
REVISED DATE:	***August 19, 2010***

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Project No.: 94134/PW004

Analytical results for arsenic in the thirteen surface soil samples were all below DTSC's working arsenic threshold value for schools of 12 mg/kg, and are presented in ***Table 4***. Copies of the analytical laboratory reports and the chain-of-custody form are included in Appendix *C*.

TABLE 4

ANALYTICAL RESULTS FOR ARSENIC IN SOIL

Sample ID	Sample Depth (feet)	Arsenic (mg/kg)
KHA1-01	0–0.5	3.0
KHA2-01	0–0.5	2.3
KHA3-01	0–0.5	2.6
KHA4-01	0–0.5	2.5
KHA5-01	0–0.5	2.8
KHA5 DUP	0-0.5	2.2
KHA6-01	0–0.5	2.4
KHA7-01	0–0.5	3.3
KHA8-01	4.5-5.0	3.8
KHA10-01	0-0.5	1.9
KHA10-04	0-0.5	4.0
KHA10-05	0-0.5	2.2
KHA11-01	0-0.5	2.6
KHA11-02	0-0.5	2.5

7.5.2 Sample Analyses for PCBs in Soil

The two surface soil samples collected from within one foot of the pole-mounted transformer were analyzed by Torrent for PCBs using EPA Method 8082. The subsurface soil sample collected at this location was held for potential future analysis, in accordance with the PEA Workplan.

Analytical results for PCBs in the two surface soil samples were all below the reporting limit of EPA Method 8082 and are presented in ***Table 5***. Because PCB concentrations were below the detectable limit of the method (none detected) in both of the surface samples, the remaining subsurface PCB sample (PCB-02) was not tested. Copies of the analytical laboratory reports and the chain-of-custody form are included in ***Appendix C***.

TABLE 5

ANALYTICAL RESULTS FOR PCBS IN SOIL

	Sample ID	**PCB-01**	**PCB-01 Duplicate**	**PCB-02**
	Sample Depth (feet)	0-0.5	0-0.5	2.0-2.5
Analyte Concentration (mg/kg)	Arochlor 1016	< 0.1	< 0.1	Not tested
	Arochlor 1221	< 0.2	< 0.2	Not tested
	Arochlor 1232	< 0.1	< 0.1	Not tested
	Arochlor 1242	< 0.1	< 0.1	Not tested
	Arochlor 1248	< 0.1	< 0.1	Not tested
	Arochlor 1254	< 0.1	< 0.1	Not tested
	Arochlor 1260	< 0.1	< 0.1	Not tested

7.5.3 Sample Analyses for OCPs in Soil

Nine composite and five discrete soil samples were analyzed by Torrent for OCPs in soil using EPA Method 8081A.

Analytical results for OCPs in the nine composite surface soil samples are presented in ***Table 6****.* The toxaphene concentration or 0.47 mg/kg detected in composite sample KHA6(-01 to -04) was slightly above its California Human Health Screening Level (CHHSL) for residential soil of 0.46 mg/kg. All other OCP concentrations detected in composite samples were at or below their respective CHHSLs. Copies of the analytical laboratory reports and the chain-of-custody forms are included in Appendix *C*.

TABLE 6

ANALYTICAL RESULTS FOR COMPOSITE OCP SAMPLES

	Sample ID	**KHA1-01 to 04**	**KHA2-01 to 04**	**KHA3-01 to 04**	**KHA4-01 to 04**	**KHA5-01 to 04**	**KHA5-01 to 04 DUP**	**KHA6-01 to 04**	**KHA7-01 to 04**	**KHA10-01 to 03**
Analyte Concentration (mg/kg)	Sample Depth (feet)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Aldrin	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	alpha-BHC	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	beta-BHC	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	delta-BHC	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	gamma-BHC (Lindane)	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Chlordane (tech)	< 0.020	< 0.0200	< 0.0200	< 0.020	< 0.0200	< 0.020	< 0.020	< 0.020	< 0.020
	4,4'-DDD	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	4,4'-DDE	**0.140**	**0.0052**	**0.0052**	**0.120**	**0.160**	**0.170**	**0.170**	**0.093**	**0.065**
	4,4'-DDT	**0.072**	< 0.0020	< 0.0020	**0.078**	**0.079**	**0.085**	**0.091**	**0.036**	**0.062**
	Dieldrin	**0.035**	<0.0020	< 0.0020	**0.023**	**0.027**	**0.029**	**0.025**	**0.015**	**0.015**
	Endosulfan I	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Endosulfan II	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020

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TABLE 6 CONTINUED
ANALYTICAL RESULTS FOR COMPOSITE OCP SAMPLES

	Sample ID	KHA1-01 to 04	KHA2-01 to 04	KHA3-01 to 04	KHA4-01 to 04	KHA5-01 to 04	KHA5-01 to 04 DUP	KHA6-01 to 04	KHA7-01 to 04	KHA10-01 to 03
Analyte Concentration (mg/kg)	Endosulfan sulfate	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Endrin	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Endrin aldehyde	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Endrin ketone	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Heptachlor	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Heptachlor epoxide	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
	Methoxy-chlor	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	Toxaphene	< 0.100	< 0.100	< 0.400	<0.400	< 0.100	**0.440**	**0.470**	< 0.100	**0.200**

Analytical results for discrete OCP samples are presented below in ***Table 7***. Copies of the analytical laboratory reports and the chain-of-custody form are included in Appendix *C*. All OCPs detected in discrete samples were less than their respective CHHSLs.

TABLE 7
ANALYTICAL RESULTS FOR DISCRETE OCP SAMPLES

	Sample ID	KHA08-01	KHA10-04	KHA10-05	KHA11-01	KHA11-02
Analyte Concentration (mg/kg)	Sample Depth (feet)	4.5-5.0	0-0.5	0-0.5	0–0.5	0-0.5
	Aldrin	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	alpha-BHC	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	beta-BHC	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	delta-BHC	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	gamma-BHC (Lindane)	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Chlordane (tech)	< 0.020	< 0.20	< 0.020	< 0.020	< 0.020
	4,4'-DDD	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	4,4'-DDE	< 0.002	**0.044**	**0.044**	**0.059**	**0.017**
	4,4'-DDT	< 0.002	**0.037**	< 0.002	**0.0081**	< 0.002
	Dieldrin	< 0.002	**0.0089**	< 0.002	**0.011**	< 0.002
	Endosulfan I	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Endosulfan II	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Endosulfan Sulfate	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Endrin	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Endrin aldehyde	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Endrin ketone	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Heptachlor	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Heptachlor epoxide	< 0.002	< 0.002	< 0.008	< 0.002	< 0.008
	Methoxychlor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	Toxaphene	<0.100	**0.12**	<0.100	<0.100	<0.100

7.5.4 Sample Analyses for TPH in Soil

Two samples were collected in the open areas around the irrigation well and de-sander. *The results are shown in Table 8 below.*

TABLE 8
ANALYTICAL RESULTS FOR DISCRETE TPH SAMPLES

	Sample ID	TPH-01	TPH-02
	Sample Depth (feet)	0–0.5	0–0.5
(mg/kg)	TPH - Diesel	<2.0	4.91
	TPH - Hydraulic Fluid	<4.0	<4.0
	TPH – Motor Oil	18	140

7.6 BACKGROUND SOIL SAMPLING

Background soil sampling was not performed as a part of this PEA investigation since PCBs, TPH, and OCPs are not naturally occurring and, if present, would be localized near the sources. Background sampling for arsenic was not required per the workplan.

7.6.1 Statistical Evaluation of Arsenic in Soil

Arsenic is often present in soils due to its ubiquitous natural occurrence in the soils of California and potentially as an agricultural site residue of historical pesticide formulations that contained arsenic. The DTSC provides guidance for sampling arsenic in soil at agricultural sites in Interim Guidance for Sampling Agricultural Fields (DTSC 2008a). Naturally occurring and anthropogenically elevated regional concentrations of arsenic at agricultural sites, such as the Creekbridge property, are often greater than risk-based screening levels for soil. According to the Interim Guidance, if a proposed school property has been adequately characterized for arsenic and all the arsenic data are equal to or less

TABLE 9

ANALYTICAL RESULTS FOR INORGANICS IN IRRIGATION WELL WATER SAMPLES

Analyte	Result	Units	*MCL*	*Units*
Alkalinity (as $CaCO_3$)	170	mg/L	***120***	***mg/L***
Aluminum	< 0.050	mg/L	***1.0***	***mg/L***
Antimony	< 2	µg/L	***6***	***µg/L***
Arsenic	24	µg/L	***10***	***µg/L***
Barium	0.062	mg/L	***1.0***	***mg/L***
Beryllium	< 1.0	µg/L	***4***	***µg/L***
Bicarbonate (as $CaCO_3$)	170	mg/L	***120***	***mg/L***
Cadmium	< 1.0	µg/L	***5***	***µg/L***
Calcium	58	mg/L	***30***	***mg/L***
Carbonate (as $CaCO_3$)	< 1.0	mg/L	***120***	***mg/L***
Chloride	96	mg/L	***500***	***mg/L***
Total Chromium	< 10	µg/L	***50***	***µg/L***
Copper	< 0.050	mg/L	***1.0***	***mg/L***
Cyanide	< 20	µg/L	***150***	***µg/L***
Fluoride	0.35	mg/L	***2***	***mg/L***
Hardness (as $CaCO_3$)	240	mg/L	***120***	***mg/L***
Hydroxide (as $CaCO_3$)	< 1.0	mg/L	***120***	***mg/L***
Iron	< 0.050	mg/L	***0.30***	***mg/L***
Lead	< 5.0	µg/L	***15***	***µg/L***
Magnesium	24	mg/L	***125***	***mg/L***
Manganese	< 0.010	mg/L	***0.05***	***mg/L***
Mercury	< 0.40	µg/L	***2***	***µg/L***
Nickel	< 10	µg/L	***100***	***µg/L***
Nitrates (as NO_3)	80	mg/L	***45***	***mg/L***
Nitrite (as NO_2-N	< 0.050	mg/L	***10***	***mg/L***
Perchlorate	< 4.0	µg/L	***6***	***µg/L***
Total Selenium	9.4	µg/L	***50***	***µg/L***
Silver	< 0.010	mg/L	***0.1***	***mg/L***
Sodium	57	mg/L	***20***	***mg/L***
Sulfate	26	mg/L	***500***	***mg/L***
Thallium	< 1.0	µg/L	***2***	***µg/L***
Total Dissolved Solids	520	mg/L	***1000***	***mg/L***
Zinc	<0.050	mg/L	***5.0***	***mg/L***

TABLE 10

ANALYTICAL RESULTS FOR INORGANIC PROPERTIES IN IRRIGATION WELL WATER SAMPLES

Analyte	Result	Units
Color	< 1.0	units
Odor	< 1.0	TON
Specific Conductivity at 25°C	880	µmho/cm
Saturation Index	0.61	unitless
pH at 22.10°C	7.9	Std. unit
Turbidity	< 0.10	NTUs

TABLE 11

ANALYTICAL RESULTS FOR ORGANICS IN IRRIGATION WELL WATER SAMPLES

Analyte	Concentration	Units
Dibromochloropropane	< 0.010	µg/L
Ethyldibromide	< 0.020	µg/L
Aldrin	< 0.075	µg/L
Chlordane	< 0.10	µg/L
Chlorothalanil	< 5.0	µg/L
Dieldrin	< 0.020	µg/L
Endrin	< 0.10	µg/L
Heptachlor	< 0.010	µg/L
Heptachlor epoxide	< 0.010	µg/L
Hexachlorobenzene	< 0.50	µg/L
Hexachlorocyclopentadiene	< 1.0	µg/L
Lindane	< 0.20	µg/L
Methoxychlor	< 10	µg/L
PCBs (Arochlor Screen)	< 0.50	µg/L
Toxaphene	< 1.0	µg/L
Trifluralin	< 1.0	µg/L
2,4,5-T	< 1.0	µg/L
2,4,5-TP (Silvex)	< 1.0	µg/L
2,4 D	< 10	µg/L
Bentazam (Basagran)	< 2.0	µg/L
Dalapon	< 10	µg/L
Dicamba	< 1.5	µg/L
Dinsoeb	< 2.0	µg/L

TABLE 11 CONTINUED

ANALYTICAL RESULTS FOR ORGANICS IN IRRIGATION WELL WATER SAMPLES

Analyte	Concentration	Units
Pentachlorophenol	< 0.20	μg/L
Picloram	< 1.0	μg/L
1,1,1,2-Tetrachloroethane	< 0.50	μg/L
1,1,1-trichloroethane	< 0.50	μg/L
1,1,2,2-Tetrachloroethane	< 0.50	μg/L
1,1,2-Trichloro-1,2,2-trifluoroethane	< 10	μg/L
1,1,2-Trichloroethane	< 0.50	μg/L
1,1-Dichloroethane	< 0.50	μg/L
1,1-Dichloroethane	< 0.50	μg/L
1,1-Dichloropropane	< 0.50	μg/L
1,2,3-Trichlorobenzene	< 0.50	μg/L
1,2,3-Trichloropropane	< 0.50	μg/L
1,2,4-Trichlorobenzene	< 0.50	μg/L
1,2,4-Trimethylbenzene	< 0.50	μg/L
1,2-Dichlorobenzene	< 0.50	μg/L
1,2-Dichloroethane	< 0.50	μg/L
1,2-Dichloropropane	< 0.50	μg/L
3,3,5-Trimethylbenzene	< 0.50	μg/L
1,3-Dichlorobenzene	< 0.50	μg/L
1,3-Dichloropropane	< 0.50	μg/L
1,4-Dichlorobenzene	< 0.50	μg/L
2,2-Dichloropropane	< 0.50	μg/L
2-Butanone	< 10	μg/L
2-Chlorotoluene	< 0.50	μg/L
2-Hexanone	< 10	μg/L
4-Chlorotoluene	< 0.50	μg/L
4-Methyl-2-pentanone	< 10	μg/L
Acetone	< 10	μg/L
Benzene	< 0.50	μg/L
Bromobenzene	< 0.50	μg/L
Bromochloromethane	< 0.50	μg/L
Bromodichloromethane	< 0.50	μg/L
Bromoform	< 0.50	μg/L

TABLE 11 CONTINUED

ANALYTICAL RESULTS FOR ORGANICS IN IRRIGATION WELL WATER SAMPLES

Analyte	Concentration	Units
Bromomethane	< 0.50	µg/L
Carbon tetrachloride	< 0.50	µg/L
Chlorobenzene	< 0.50	µg/L
Chloroethane	< 0.50	µg/L
Chloroform	< 0.50	µg/L
Chloromethane	< 0.50	µg/L
cis-1,2 dichloroethene	< 0.50	µg/L
cis- 1,3 dichloropropene	< 0.50	µg/L
Dibromocloromethane	< 0.50	µg/L
Dibromomethane	< 0.50	µg/L
Dichlorodifluormethane	< 0.50	µg/L
Ethyl 1-butyl ether	< 3.0	µg/L
Ethylbenzene	< 0.50	µg/L
Hexachlorobutadiene	< 0.50	µg/L
Isopropylbenzene	< 0.50	µg/L
m,p xylenes	< 0.50	µg/L
Methylene chloride	< 0.50	µg/L
Methyl-t-butyl ether	< 3.0	µg/L
Napthalene	< 1.0	µg/L
n-Butylbenzene	< 0.50	µg/L
n-Propylbenzene	< 0.50	µg/L
o-Xylene	< 0.50	µg/L
p-Isopropyltoluene	< 0.50	µg/L
sec-Butylbenzene	< 0.50	µg/L
Styrene	< 0.50	µg/L
t-Amyl Methyl Ether	< 3.0	µg/L
tert-Butylbenzene	< 0.50	µg/L
Tetrachloroethene (PCE)	< 0.50	µg/L
Toluene	< 0.50	µg/L
Total 1,3-Dichloropropene	< 0.50	µg/L
Total Xylene Isomers	< 0.50	µg/L
trans-1,2 Dichloroethene	< 0.50	µg/L
trans-1,3 Dichloropropene	< 0.50	µg/L

TABLE 11 CONTINUED

ANALYTICAL RESULTS FOR ORGANICS IN IRRIGATION WELL WATER SAMPLES

Analyte	Concentration	Units
Trichlorethene (TCE)	< 0.50	µg/L
Trichlorofluoroethane	< 5.0	µg/L
Vinyl chloride	< 0.50	µg/L
Alachlor	< 1.0	µg/L
Atrazine	< 0.50	µg/L
Benzo(a)pyrene	< 0.10	µg/L
bis(2-ethylhexyl) adiapate	< 3.0	µg/L
bis(2-ethylhexyl) phthalate	< 3.0	µg/L
Bromacil	< 10	µg/L
Butachlor	< 0.38	µg/L
Diazinon	< 0.25	µg/L
Dimethoate	< 10	µg/L
Metochlor	< 0.50	µg/L
Metribuzin	< 0.50	µg/L
Molinate	< 2.0	µg/L
Propachlor	< 0.50	µg/L
Simazine	< 1.0	µg/L
Thiobencarb	< 1.0	µg/L
3-hydroxycarbofuran	< 3.0	µg/L
Aldicarb	< 3.0	µg/L
Aldicarb sulfone	< 2.0	µg/L
Aldicarb sulfoxide	< 3.0	µg/L
Carbaryl	< 5.0	µg/L
Carbofuran	< 5.0	µg/L
Methomyl	< 2.0	µg/L
Oxamyl	< 20	µg/L
Glyphosate	< 25	µg/L
Endothall	< 45	µg/L
Diquat	< 4.0	µg/L

calculations were the maximum concentrations of the chemicals for both the discrete and composite soil samples. Air EPCs were estimated from the soil EPCs.

In accordance with recommendations from DTSC for this HHSE (DTSC, 2010), the evaluation of potential risks and hazards from TPH-diesel and TPH-motor oil were evaluated using methodology adapted from the Commonwealth of Massachusetts Executive Office of Environmental Affairs Department of Environmental Protection (2003). As specifically requested by DTSC for this site (DTSC, 2010), the sum of the maximum TPH-diesel and TPH-motor oil detected (145 mg/kg) was used as the initial exposure point concentration for TPH. Because the TPH methodology includes an evaluation of both aliphatic components and aromatic TPH components separately, a weighted approach was required by DTSC. That is, the sum of the maximum detected TPH was multiplied by 50 percent and each of the two EPCs were evaluated separately as aliphatic and aromatic components of TPH splitting the exposure point concentration in half and comparing each half to the RfD.

Table 12 presents the soil EPCs.

TABLE 12

EXPOSURE POINT CONCENTRATIONS FOR SOIL INGESTION AND DERMAL CONTACT

Chemical	Exposure Point Concentration (mg/kg)
DDE	0.17
DDT	0.091
Dieldrin	0.035
Toxaphene	0.47
TPH-diesel/TPH-motor oil – as aliphatics	*72.5 (50% of the sum of 140 mg/kg TPH-motor oil and 5 mg/kg TPH-Diesel)*
TPH-diesel/TPH-motor oil – as aromatics	*72.5 (50% of the sum of 140 mg/kg TPH-motor oil and 5 mg/kg TPH-Diesel)*

The PEA guidance manual also recommends the evaluation of exposure to fugitive dust emissions for non-VOCs (non-volatile organic compounds) based on the assumption that chemicals of concern in surface soil may become airborne due to wind erosion.

The following equation was used to estimate air concentrations (Ca) of the COPC relative to the soil concentration (Cs) at the subject Site:

$$C_a = C_s/PEF$$

The particulate emission factor (PEF) of 5.42 x 10^8 m^3/kg was calculated according to Equation 5 in the Soil Screening Guidance: User's Guide (EPA, 1996, Publication Number 9355.4-23) and incorporated the Q/C value for a 10-acre site in Fresno (37.36 g/m2-s/kg/m3) [Exhibit 11, EPA, 1996]. ***The Q/C value is a site-specific dispersion factor for wind erosion of soil-borne constituents. The Q/C value is the inverse of the geometric mean air concentration to the emission flux at the center of a 0.5-acre-square source (g/M2-s per kg/m3) and a value is selected for a given project when the size of the site and location are known and a similar reference value is available from EPA.***

The estimated air EPCs are presented in ***Table 13*** below. The ***air EPCs*** presented in ***Table 13*** were used to estimate the cancer risk and noncancer hazard that may be associated with inhalation of fugitive dust.

TABLE 13

ESTIMATED AIR CONCENTRATIONS OF THE CHEMICALS OF CONCERN

Chemical	Exposure Point Concentration (mg/kg)	Estimated Air Concentration (mg/m^3)
DDE	0.170	3.14 E-10
DDT	0.091	1.68 E-10
Dieldrin	0.035	6.46 E-11
Toxaphene	0.470	8.67 E-10
TPH-diesel/TPH-motor oil – as aliphatics	***72.5***	***1.34E-07***
TPH-diesel/TPH-motor oil – as aromatics	***72.5***	***1.34E-07***

TABLE 14

TOXICITY VALUES FOR THE CHEMICALS OF CONCERN

Chemical	**SF_o (kg-day/mg)**	**note**	**RfD_o (mg/kg-day)**	**note**	**SF_i (kg-day/mg)**	**note**	**RfD_i (mg/kg-day)**	**note**
DDE	3.40E-01	i,o	NA	-	3.40E-01	o,r	NA	-
DDT	3.40E-01	i,o	5.00E-04	i	3.40E-01	i,o	5.00E-04	r
Dieldrin	1.60E+01	i.o	5.00E-05	i	1.60E+01	i,o	5.00E-05	r
Toxaphene	1.1E+00	i,o	NA	-	1.1E+00	i,o	NA	-
TPH-diesel/TPH-motor oil – as aliphatics	***NA***		***0.1***	***a***	***NA***		***0.2***	***a***
TPH-diesel/TPH-motor oil – as aromatics	***NA***		***0.03***	***a***	***NA***		***0.05***	***a***

i, IRIS, IRIS values are current as of January, 2010
o. OEHHA, July 21, 2009
r. Route-to-route extrapolation
a. Based on C9-C18 hydrocarbon chain

8.2.4 Risk Characterization And Summary Tables

In accordance with the PEA guidance (DTSC, 1994), estimates of excess cancer risk and noncancer hazard for the soil ingestion, dermal contact, and inhalation exposure pathways using the equations provided in Figures 2.3 and 2.4 of the PEA guidance manual (CalEPA 1994).

Calculation of Cancer Risk for Soil (DTSC, 1994)

$$Risk_{soil} = (SF \times C_s \times (1.57 \times 10^{-6})) + (SF \times C_s \times (3.71 \times 10^{-6}) \times ABS)$$

where:

SF	=	cancer slope factor in units of kg-day/mg
C_s	=	soil concentration in units of mg/kg
ABS	=	chemical-specific dermal absorption fraction (DTSC, 1994), which is unitless

TABLE 15

ESTIMATED CANCER RISK FOR EXPOSURE TO SOIL AND AIRBORNE DUST

Chemicals	Soil Cancer Risk	Airborne Dust Cancer Risk
DDE	1E-07	2E-11
DDT	5E-08	9E-12
Dieldrin	1E-06	2E-10
Toxaphene	1E-06	2E-10
TPHdiesel/TPH-motor oil – as aliphatics	***NA***	***NA***
TPHdiesel/TPH-motor oil – as aromatics	***NA***	***NA***
Sum of Cancer Risk by Medium	***2E-06***	***3E-10***
Cumulative Residential Cancer Risk by all Pathways[1]	***2E-06***	

NA = not applicable because chemical is not considered a carcinogen

TABLE 16

ESTIMATED NONCANCER HAZARD INDEX FOR EXPOSURE TO SOIL AND AIRBORNE DUST

Chemicals	Soil Noncancer Hazard Index	Airborne Dust Noncancer Hazard Index
DDE	NA	NA
DDT	0.003	< 0.001
Dieldrin	0.001	< 0.001
Toxaphene	NA	NA
TPHdiesel/TPH-motor oil – as aliphatics	**0.012**	**< 0.001**
TPHdiesel/TPH-motor oil – as aromatics	**0.040**	**< 0.001**
Noncancer Hazard Index by Medium[1]	**0.065**	**< 0.001**
Residential Noncancer Hazard Index for all Pathways[1]	**0.065**	

NA = not applicable (no RfD values available)
1 = Hazard Index for all chemicals evaluated but values were not segregated by target organ

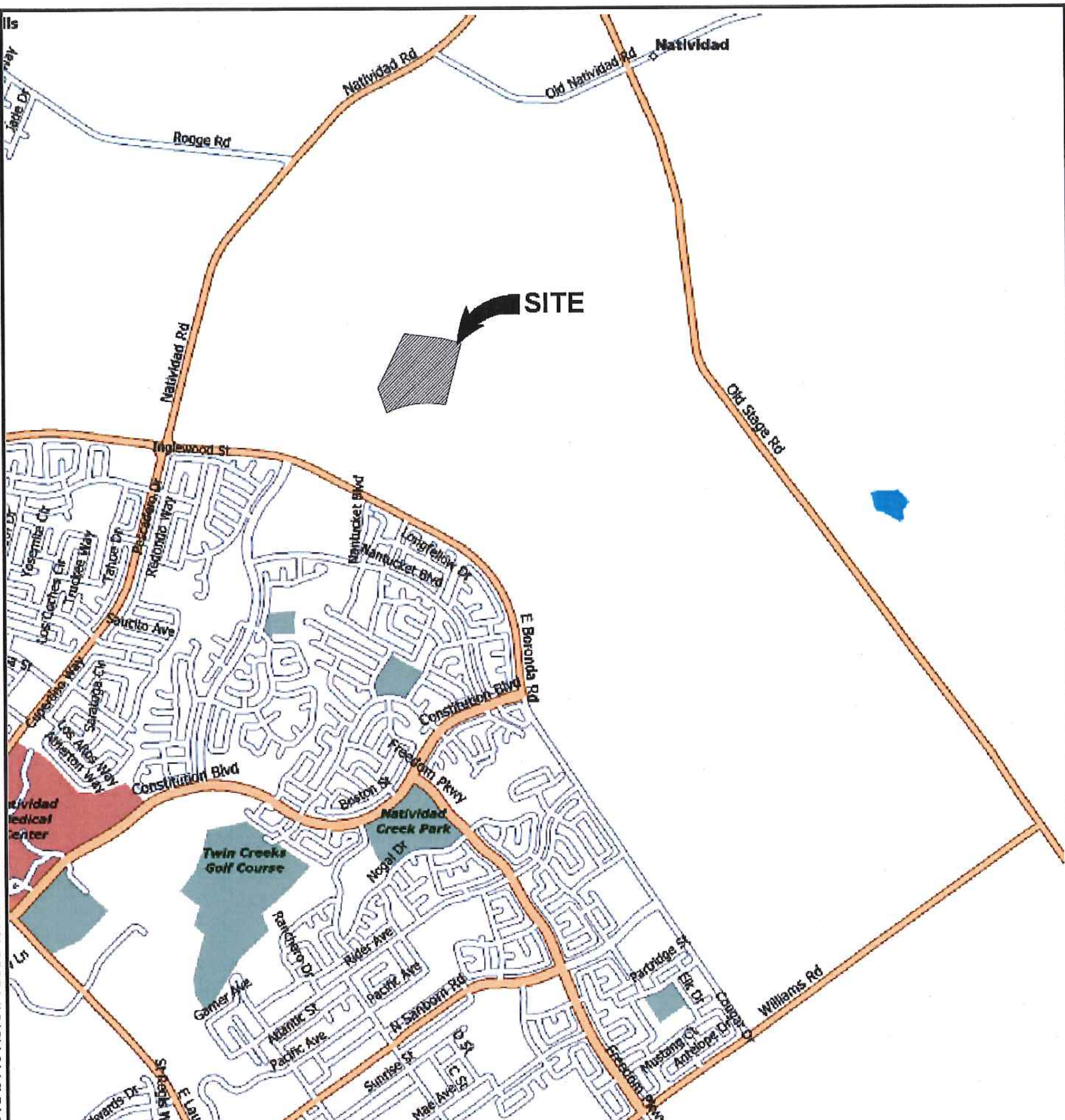
PLOTTED: 13 Jan 2009, 4:31pm, jsala LAYOUT: SITE-VIC

CAD FILE: D:_PROJECTS\94134\GRAPHICS\PW001\

XRef: Eng-A_8x11_P_StyleA

ATTACHED XREFS:

PLEASANTON, CA



2000 1000 0 2000

APPROXIMATE SCALE (feet)

N

REFERENCE:
www.mapquest.com, 2008

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www.kleinfelder.com

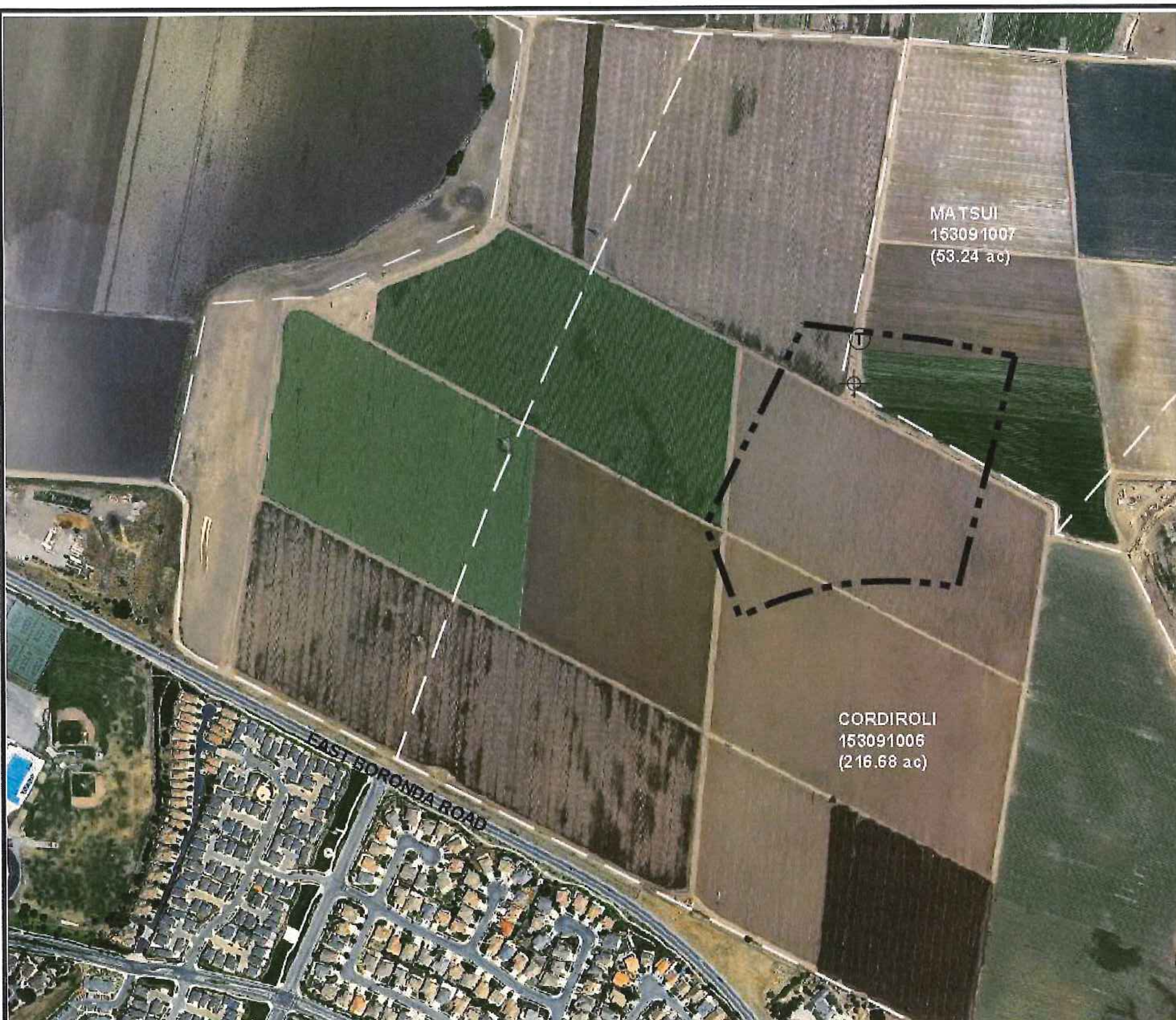
PROJECT NO.	94134
DRAWN:	JAN 2008
DRAWN BY:	LGS/JDS
CHECKED BY:	JW
FILE NAME:	PW001_plates.dwg

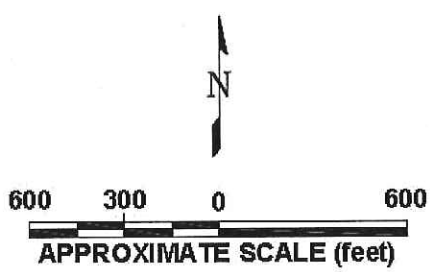
SITE VICINITY MAP

PRELIMINARY ENVIRONMENTAL ASSESSMENT
CREEKBRIDGE SCHOOL SITE
PROBERT/MATSUI PROPERTY
SALINAS, CALIFORNIA

PLATE

1





REFERENCE:
Google Earth Pro, 2008

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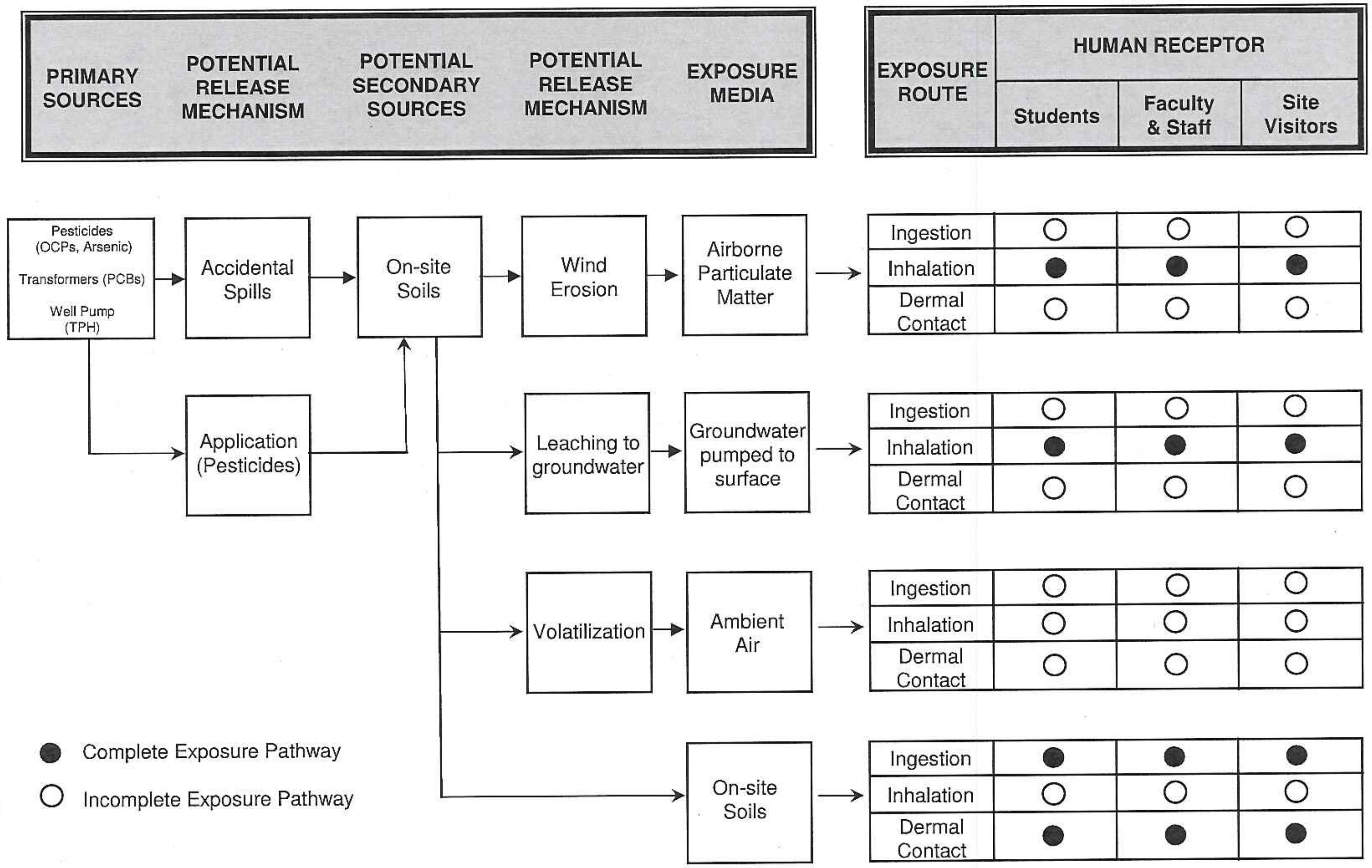
LEGEND

- APPROXIMATE LIMITS OF PROPOSED NEW SCHOOL PROPERTY
- EXISTING PARCEL BOUNDARY (whilte lines)
- IRRIGATION WELL AND DESANDER
- (T) POLE-MOUNTED TRASFORMER

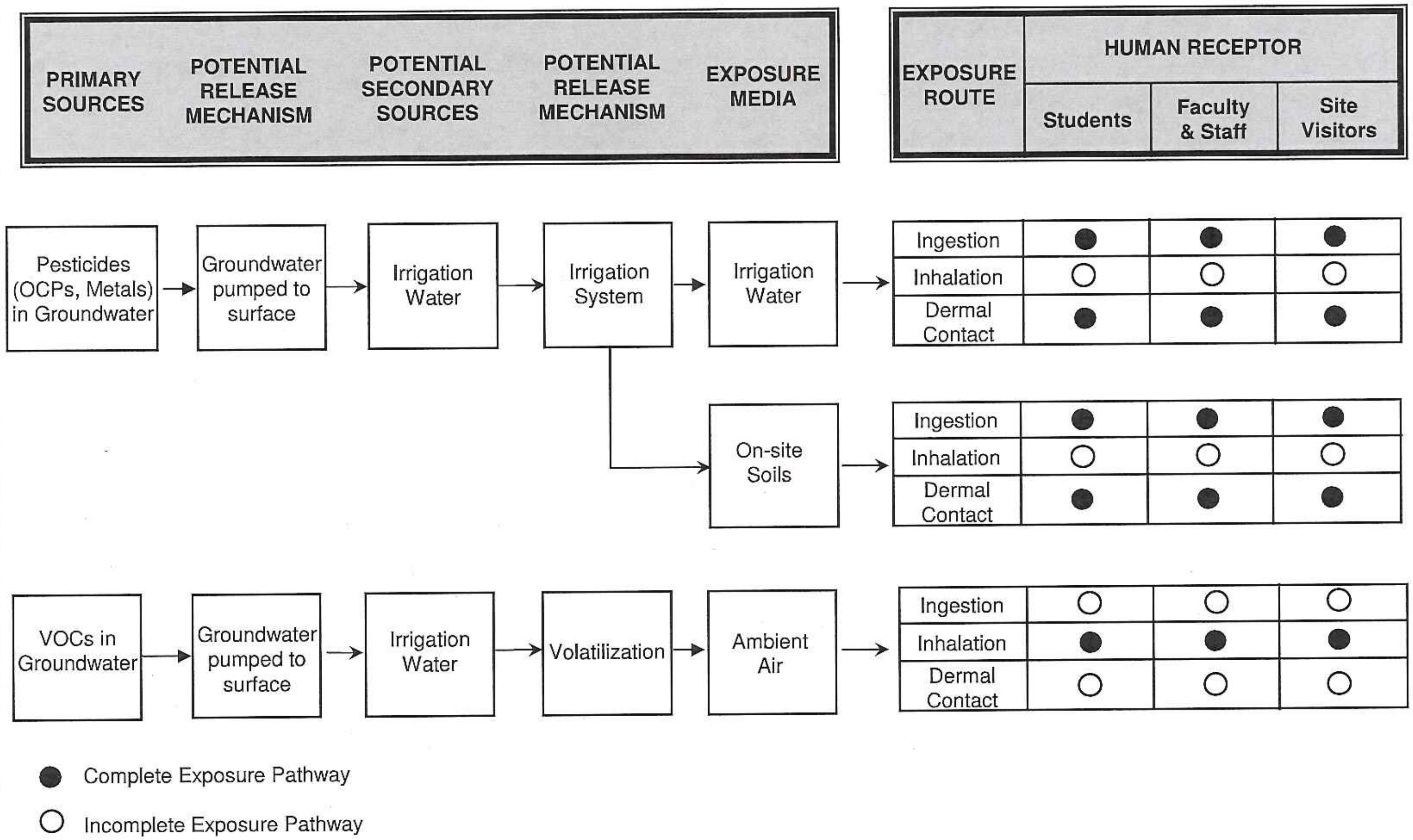
NOTE: Locations are approximate.

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 94134 DRAWN: JAN 2008 DRAWN BY: LGS/JSD CHECKED BY: JW FILE NAME: PW001_plates.dwg	**SITE PLAN** **PRELIMINARY ENVIRONMENTAL ASSESSMENT** CREEKBRIDGE SCHOOL SITE PROBERT/MATSUI PROPERTY SALINAS, CALIFORNIA	PLATE **2**

PLOTTED: 21 Jan 2009, 2:55pm, jsala LAYOUT: SITEPLAN CAD FILE: L:\2009\09Projects\94134\GRAPHICS\PW001\ XRef: Eng-A_8x11_P_StyleA ATTACHED XREFS: PLEASANTON, CA



KLEINFELDER Bright People. Right Solutions.		**CONCEPTUAL SITE MODEL DIAGRAM – PART I** **Preliminary Environmental Assessment** Creekbridge Middle School Site APN 153-091-006;153-091-007 Salinas, California	**PLATE** **3a**
Compiled by: J. Woodard	Date: 04/15/09		
Reviewed by: D. Davidson	Revision date:	PROJECT NO.: 94134/PW002	



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CONCEPTUAL SITE MODEL DIAGRAM – PART II

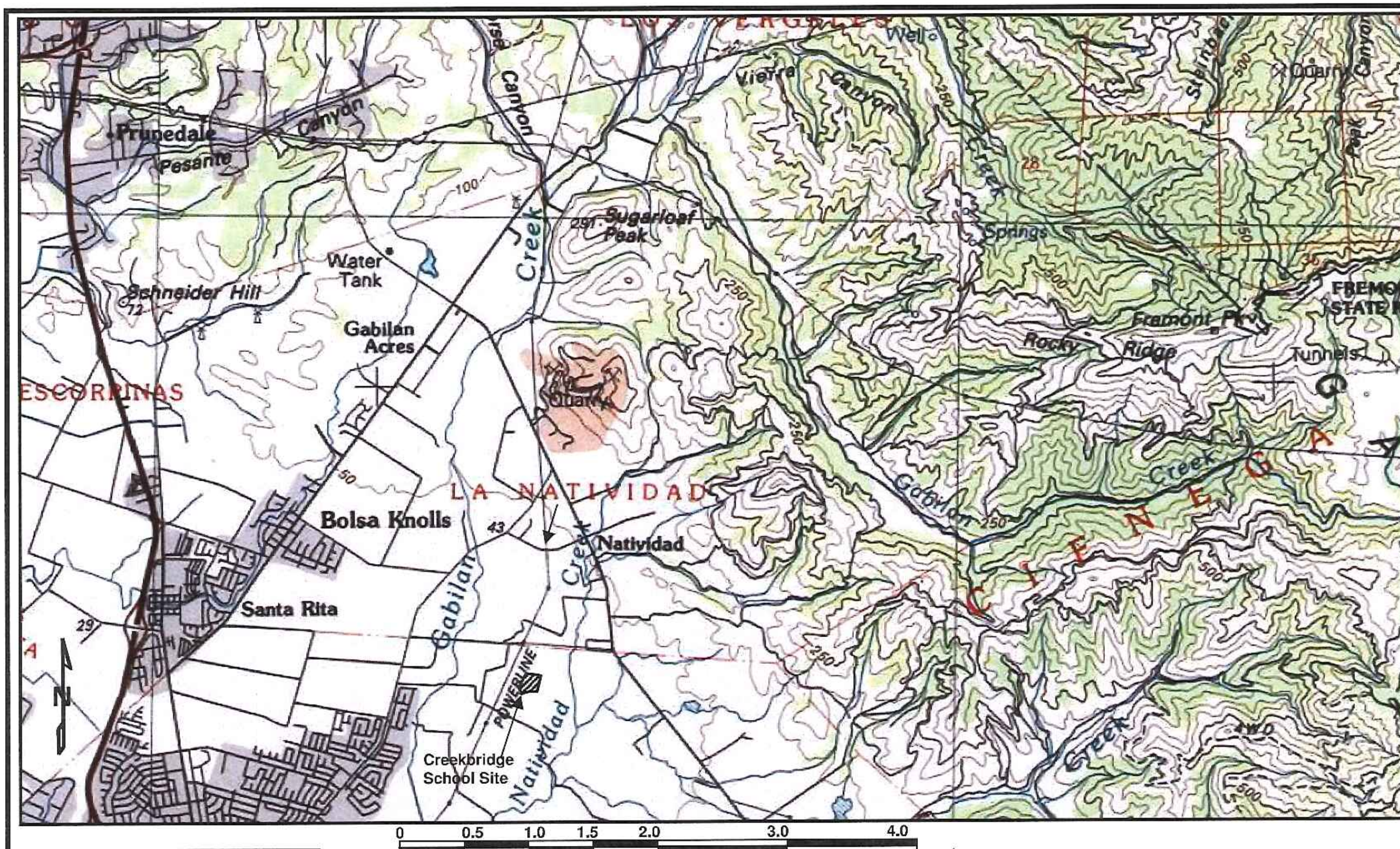
Preliminary Environmental Assessment
Creekbridge Middle School Site
APN 153-091-006;153-091-007
Salinas, California

PROJECT NO.: 94134/PW002

PLATE

3b

Compiled by: J. Woodard	Date: 04/15/09
Reviewed by: D. Davidson	Revision date:



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REFERENCE:
USGS 7.5 Minute Quadrangle, 1984; Salinas, California
TeleAtlas, NGHT, Inc. 2007

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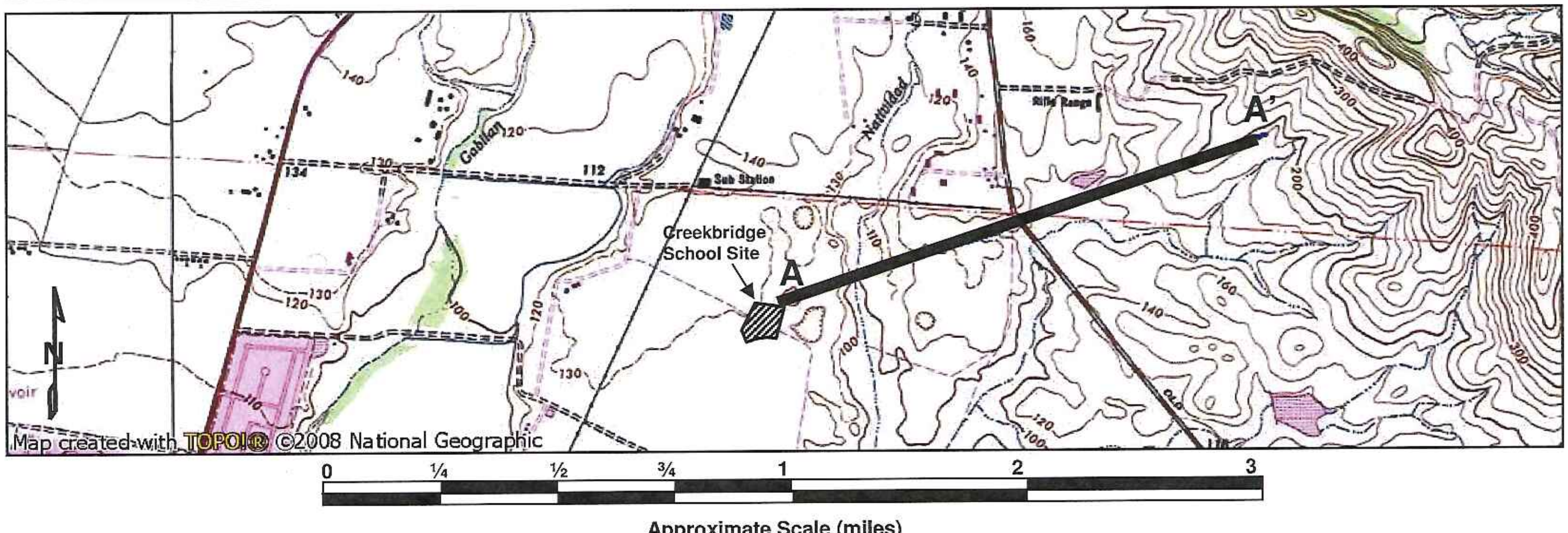
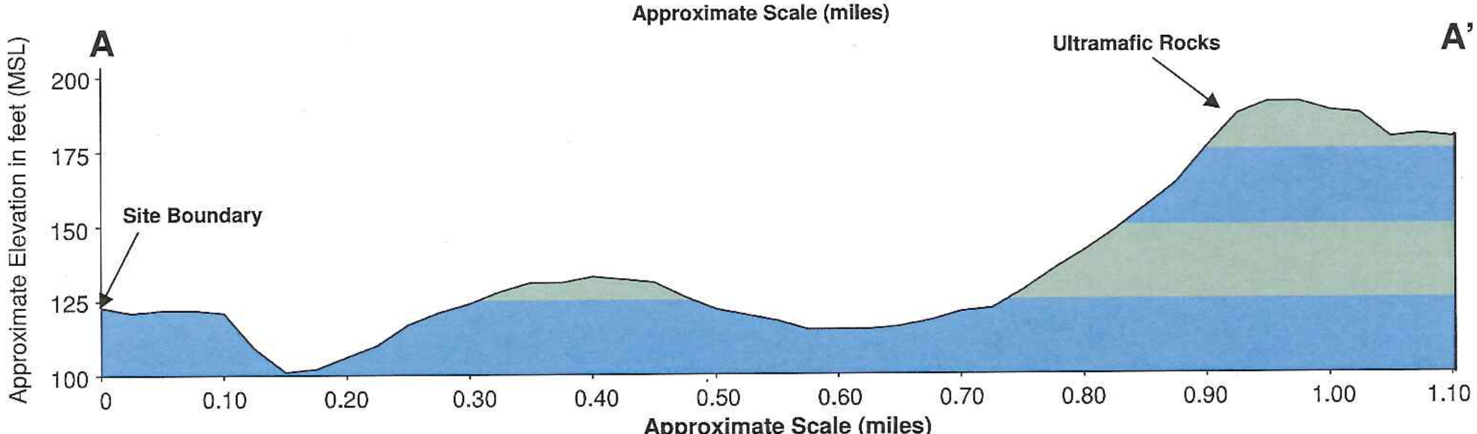
Compiled by: J. Woodard	Date: 07/08/09	**TOPOGRAPHIC PROFILE TO SITE** **Preliminary Environmental Assessment** Creekbridge Middle School Site APN 153-091-006;153-091-007 Salinas, California	**PLATE** **4**
Reviewed by: D. Davidson	Revision date:	PROJECT NO.: 94134- PW002	





REFERENCE:
USGS 7.5 Minute Quadrangle, 1984; Salinas, California
TeleAtlas, NGHT, Inc. 2007

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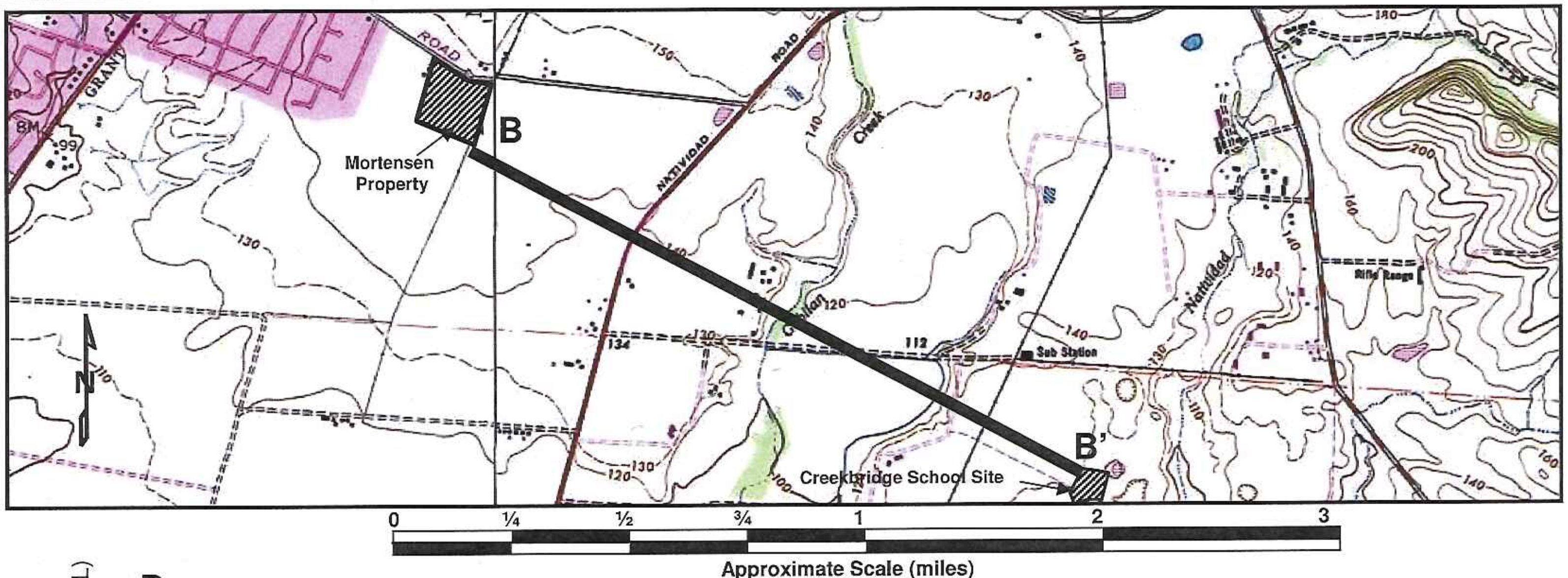
TOPOGRAPHIC PROFILE TO SITE

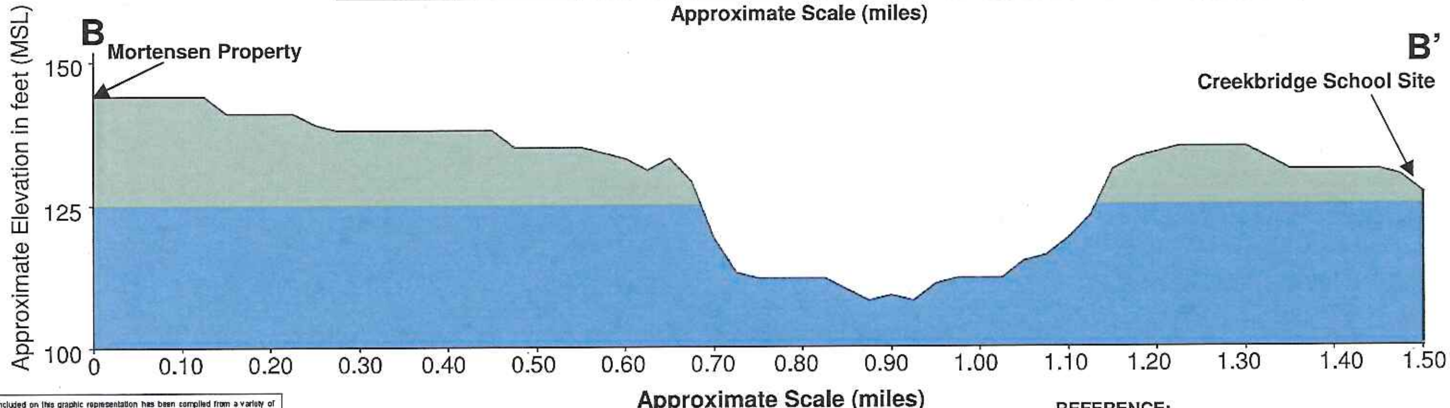
Preliminary Environmental Assessment
Creekbridge Middle School Site
APN 153-091-006;153-091-007
Salinas, California

Compiled by: J. Woodard	Date: 07/08/09
Reviewed by: D. Davidson	Revision date:

PROJECT NO.: 94134- PW002

PLATE
5





REFERENCE:
USGS 7.5 Minute Quadrangle, 1984; Salinas, California
TeleAtlas, NGHT, Inc. 2007

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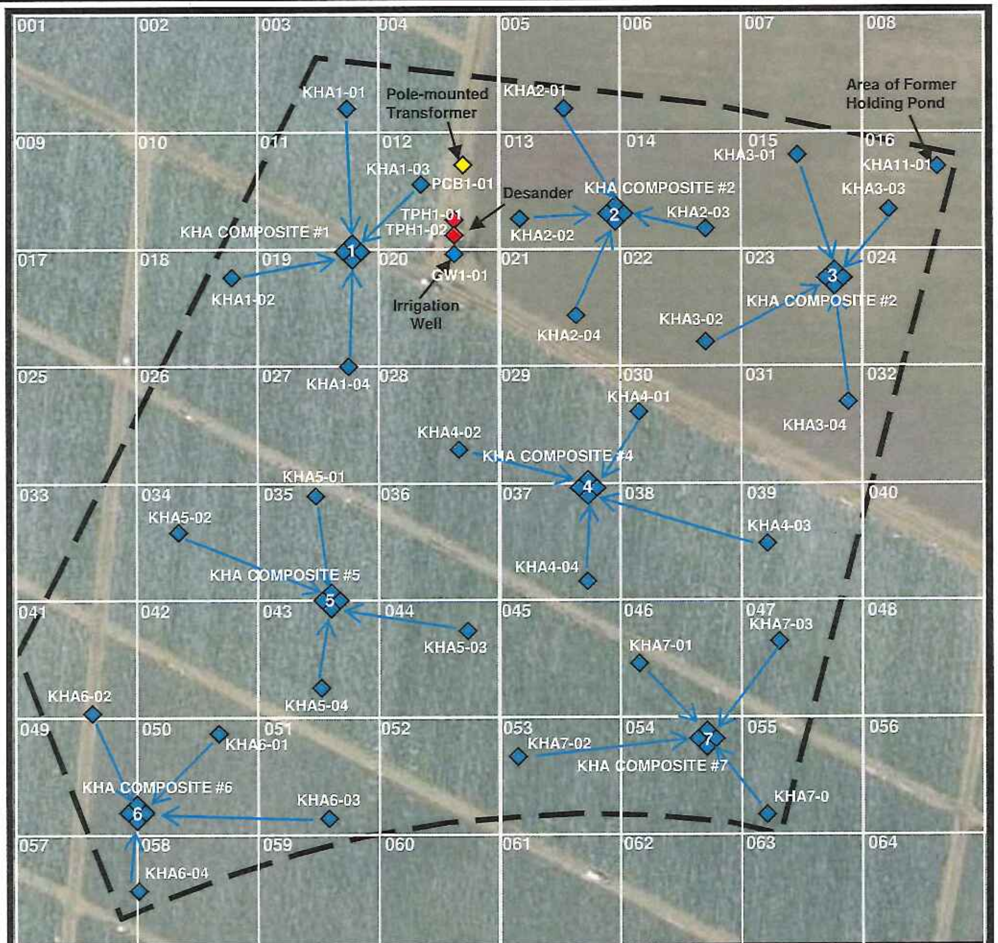
TOPOGRAPHIC PROFILE TO SITE

Preliminary Environmental Assessment
Creekbridge Middle School Site
APN 153-091-006;153-091-007
Salinas, California
PROJECT NO.: 94134- PW002

PLATE 6

Compiled by: J. Woodard	Date: 07/08/09
Reviewed by: D. Davidson	Revision date:



LEGEND

- Approximate site boundary
- Sample reference grid
- Discrete OCP/Arsenic Sample Location
- Composite OCP/Arsenic Sample Location
- Grab Groundwater Sample Location
- Discrete PCB Sample Location
- Discrete TPH Sample Location

NOTE: Locations are approximate

N

400 300 200 100 0 200 400

Approximate scale (feet)

REFERENCE: Bing Maps, Salinas, California; July 2009

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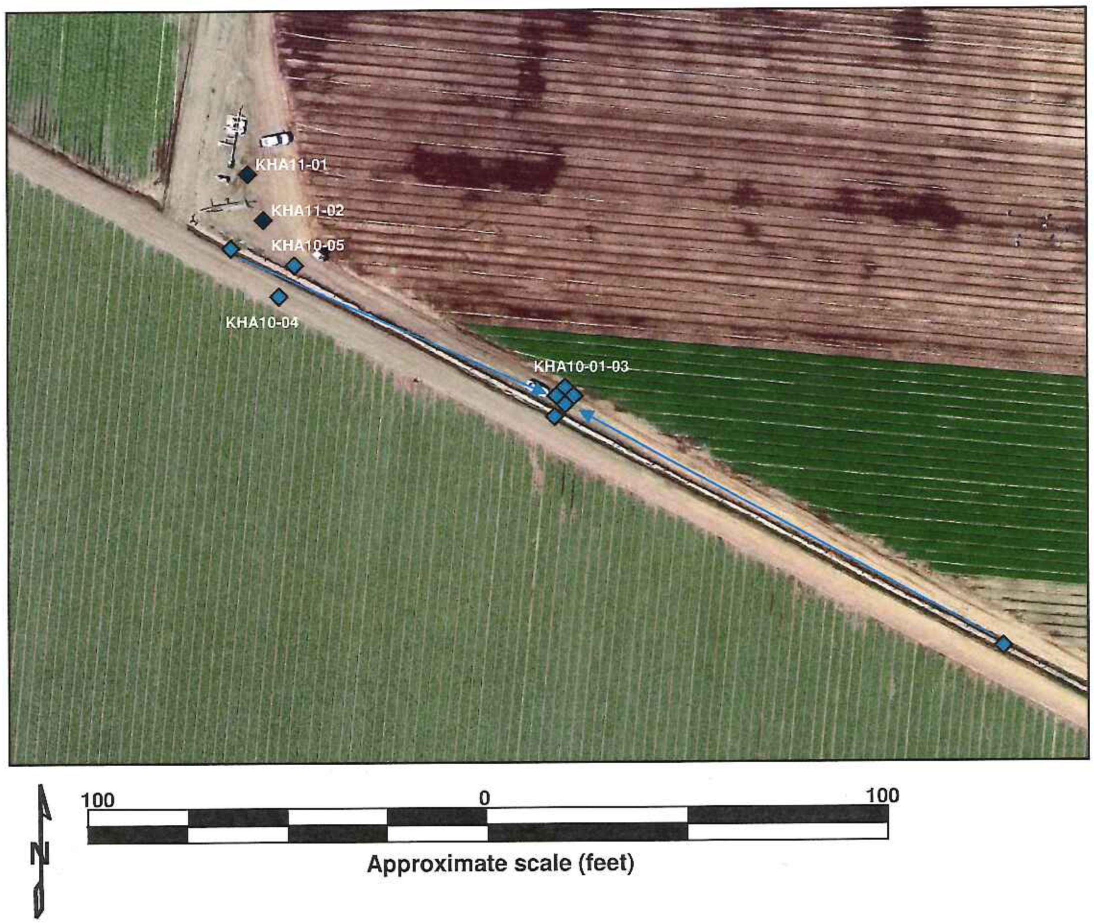
SITE MAP WITH SAMPLE LOCATIONS

Preliminary Environmental Assessment
Creekbridge Middle School Site
APN 153-091-006 and 153-091-007
Salinas, California

PROJECT NO.: 94134/PW004

PLATE **7**

Compiled by: J. Woodard	Date: 02/08/10
Reviewed by: N. Stoopes	Revision date: 07/09/10



LEGEND

- Approximate site boundary
- Discrete OCP Sample Location
- Discrete OCP/Arsenic Sample Location
- Composite OCP/Arsenic Sample Location

NOTE: Locations are approximate

REFERENCE: GoogleEarth Pro, Salinas, California; July 2010

KLEINFELDER *Bright People. Right Solutions.*	**SITE MAP DETAIL WITH REQUESTED ADDITIONAL SAMPLE LOCATIONS** **Preliminary Environmental Assessment** Creekbridge Middle School Site APN 153-091-006 and 153-091-007 Salinas, California	**PLATE** **8**
Compiled by: J. Woodard / Date: 07/09/10		
Reviewed by: N. Stoopes / Revision date:	PROJECT NO.: 94134/PW004	

Department of Toxic Substances Control

Linda S. Adams
Acting Secretary for
Environmental Protection

Deborah O. Raphael, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Edmund G. Brown Jr.
Governor

May 26, 2011

Ms. Karen Luna
Manager, Facilities and Planning Division
Salinas Union High School District
320 Rose Street
Salinas, California 93901

APPROVAL OF PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT, CREEKBRIDGE MIDDLE SCHOOL, NORTHEAST OF EAST BORANDA ROAD AND NATIVIDAD ROAD, SALINAS (SITE CODE 204229)

Dear Ms. Luna:

The Salinas Union High School District (District) notified the Department of Toxic Substances Control (DTSC) on May 24, 2011 that the District has complied with all public review and comment requirements for the Preliminary Environmental Assessment (PEA) Report (Kleinfelder West, Inc, August 19, 2010) pursuant to Option A (Education Code §17213.1(a)(6)(A)). The District made the PEA Report available for public review and comment from April 15, 2011 through May 15, 2011, and held a public hearing on April 26, 2011. According to the District notice, no public comments were received regarding the PEA Report.

In addition, DTSC reviewed the revised draft PEA Report received September 3, 2010. The revised PEA Report was prepared in response to DTSC comments on the draft PEA Report forwarded in a letter dated June 17, 2010. DTSC issued a PEA Adequacy letter on September 13, 2010 pending the District's compliance with Education Code §17213.1(a)(6)(A). The PEA Report presents investigation results and conclusions based on a health risk screening evaluation for the site.

According to the PEA report, the site consists of portions of two larger parcels (APN 153-091-006 and 153-091-007) for a site total of approximately 18-acres. The site has been used for agricultural row crop farming since at least 1956. The surrounding land use is agricultural on all sides. The site was investigated for arsenic and organochlorine pesticides (OCPs) in soil in the agricultural row crop farming area, former holding pond, and in an irrigation ditch associated with the potential application of agricultural chemicals; polychlorinated biphenyls (PCBs) in soil associated with a pole-mounted transformer; total petroleum hydrocarbons (TPH) in soil associated with the irrigation well pump; and OCPs, metals, volatile organic compounds, general chemistry, and contaminants of regional concern to assess groundwater quality from an existing irrigation well proposed for continued use by the District as a non-potable water supply source only for the future school.

Based on the results of the PEA investigation, TPH from motor oil were detected in the vicinity of the irrigation well and desander at below levels of concern. Arsenic soil concentrations in 12 discrete samples ranged from 1.9 to 4.0 milligram per kilogram. The OCPs toxaphene, dieldrin, DDT and DDE were detected in soil analyses and identified as chemicals of potential concern (COPCs). The OCPs toxaphene and dieldrin were the only COPCs detected at or above their respective California Human Health Screening Level. The groundwater samples, tested according to Title 22 Drinking Water Standards, resulted in the detection of arsenic at slightly above the maximum contaminant level (MCL) for drinking water. Secondary analytes that exceeded their respective secondary MCL included total alkalinity, calcium, sodium, nitrates and hardness. No other COPC were identified. The PEA concluded that although the estimated residential incremental excess cancer risk was slightly greater than the target incremental cancer risk of 1×10^{-6} typically used by the DTSC for school sites, the combined conservative residential exposure assumptions used in the human health screening evaluation and the use of maximum concentrations leads to a significant overestimate of incremental risks for the proposed middle school, including students and workers. The calculated incremental cancer risks specific to the middle school users would be significantly less than the target incremental risks. Based on the site observations, evaluation of collected COPC data, and the proposed use of the site as a middle school, Kleinfelder recommends no further action at this time for the subject site.

In addition, although the MCL for arsenic and several secondary MCLs (alkalinity, calcium, sodium, nitrates and hardness) were exceeded in the groundwater samples collected, DTSC does not believe that the concentrations reported present an unacceptable risk for use as non-potable water supply source. However, DTSC recommends that the District coordinate with the Monterey County Health Department Division of Environmental Health, Drinking Water Protection Services for additional monitoring and/or well development requirements.

Based on a site inspection and review of the PEA Report, neither a release of hazardous material nor the presence of a naturally occurring hazardous material which would pose a threat to public health or the environment under unrestricted land use was indicated at the site. Therefore, DTSC concurs with the conclusion of the PEA Report that no further environmental investigation of the site is required and hereby approves the PEA Report as final.

Pursuant to Ed. Code §17213.2 (e), if a previously unidentified release or threatened release of a hazardous material or the presence of a naturally occurring hazardous material is discovered anytime during construction at the site, the district shall cease all construction activities at the site and notify DTSC. Additional assessment, investigation or cleanup may be required.

If you have any questions regarding this project, you may contact Mr. Jose Luevano, the DTSC Project Manager at (916) 255-3577 or by e-mail at JLuevano@dtsc.ca.gov or me at (916) 255-3732 or via e-mail at JKoponen@dtsc.ca.gov.

Sincerely,

Mr. Juan T. Koponen
Supervising Hazardous Substances Engineer I
NorCal Schools & Permit Appeals Office
Brownfields and environmental Restoration Program
Department of Toxic Substances Control

cc: (via e-mail)

Mr. Michael O'Neill
School Facilities Planning Division
California Department of Education
MOneill@cde.ca.gov

Cheryl Sandoval, Supervising Environmental Health Specialist
Drinking Water Protection Services
sandovalcl@co.monterey.ca.us

Mr. Nathan Stoopes, P.G.
Location Manager
Kleinfelder West, Inc.
NStoopes@kleinfelder.com

Jose Luevano, Project Manager
NorCal Schools & Permit Appeals Office
JLuevano@dtsc.ca.gov

Mr. Vivek C. Mathrani, Ph.D.
Project Toxicologist
HERO – Berkeley Office
VMathrani@dtsc.ca.gov

Schools Reading File – Sacramento Office

APPENDIX D

City of Salinas-CASP
21000 E. Boronda Rd
Salinas, CA 93906

Inquiry Number: 4889605.1s
March 24, 2017

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

21000 E. BORONDA RD
SALINAS, CA 93906

COORDINATES

Latitude (North):	36.7176000 - 36˚ 43' 3.36''
Longitude (West):	121.6039000 - 121˚ 36' 14.04''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	624683.9
UTM Y (Meters):	4064251.5
Elevation:	134 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5603742 NATIVIDAD, CA
Version Date:	2012
North Map:	5619818 SAN JUAN BAUTISTA, CA
Version Date:	2012
Southwest Map:	5619816 SALINAS, CA
Version Date:	2012
Northwest Map:	5603756 PRUNEDALE, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140609
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
21000 E. BORONDA RD
SALINAS, CA 93906

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1		BORONDA ROAD	ERNS	Lower	1 ft.
2	STEVE & CAROL SILVA	804 OLD STAGE RD	HAZNET	Higher	419, 0.079, ENE
3	BOB SWANSON	808 OLD STAGE RD	HAZNET	Higher	658, 0.125, ENE
4	SPRINT SITE MO45XC06	1941 HEMINGWAY DR	CUPA Listings	Lower	1295, 0.245, SW
5	SALINAS BERRY FARMS-	261 NATIVIDAD RD	CUPA Listings	Higher	1634, 0.309, NW
A6	SETTRINI RANCH	250 NATIVIDAD RD	SWEEPS UST, CA FID UST	Higher	1698, 0.322, West
A7	SETTRINI RANCH	250 NATIVIDAD RD	HIST UST, CUPA Listings	Higher	1698, 0.322, West
B8	AMERICAN TAKII INC.	301 NATIVIDAD RD	SWEEPS UST, CA FID UST	Higher	1757, 0.333, NW
B9	AMERICAN TAKII INC.	301 NATIVIDAD RD	HIST UST, CUPA Listings, NPDES	Higher	1757, 0.333, NW
B10	ALBERTO A ROMERO	301 NATIVIDAD RD	HIST UST, PEST LIC	Higher	1757, 0.333, NW
11	ROGGE ROAD SCHOOL	1301 ROGGE ROAD	ENVIROSTOR, SCH	Higher	1834, 0.347, NW
12	AT&T MOBILITY - NORT	1877 HEMINGWAY DR	CUPA Listings	Lower	1930, 0.366, SW
A13		239 NATIVIDAD RD	AST	Higher	1944, 0.368, West
A14	TRIANGLE FARMS, INC-	239 NATIVIDAD RD	AST, CUPA Listings	Higher	1944, 0.368, West
15	PROPOSED NEW SCHOOL	1100 ROGGE ROAD	ENVIROSTOR, SCH	Higher	4646, 0.880, WNW
16	FRANK PAUL ELEMENTAR	1290 & 1296 RIDER AV	ENVIROSTOR, SCH	Lower	5670, 1.074, South

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL - - - - - - - - - - National Priority List
Proposed NPL - - - - - - Proposed National Priority List Sites
NPL LIENS - - - - - - - Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL - - - - - - National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY - - - - Federal Facility Site Information listing
SEMS - - - - - - - - - Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE - - - - - Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS - - - - - - - Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF - - - - - - - RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG - - - - - - - RCRA - Large Quantity Generators
RCRA-SQG - - - - - - - RCRA - Small Quantity Generators
RCRA-CESQG - - - - - - RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS - - - - - - - - - Land Use Control Information System
US ENG CONTROLS - - - - Engineering Controls Sites List

US INST CONTROL - - - - - Sites with Institutional Controls

State- and tribal - equivalent NPL

RESPONSE - - - - - State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF - - - - - Solid Waste Information System

State and tribal leaking storage tank lists

LUST - - - - - Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST - - - - - Leaking Underground Storage Tanks on Indian Land
SLIC - - - - - Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST - - - - - Underground Storage Tank Listing
UST - - - - - Active UST Facilities
INDIAN UST - - - - - Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP - - - - - Voluntary Cleanup Priority Listing
VCP - - - - - Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS - - - - - Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS - - - - - A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT - - - - - Waste Management Unit Database
SWRCY - - - - - Recycler Database
HAULERS - - - - - Registered Waste Tire Haulers Listing
INDIAN ODI - - - - - Report on the Status of Open Dumps on Indian Lands
ODI - - - - - Open Dump Inventory
DEBRIS REGION 9 - - - - - Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS - - - - - Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL - - - - - Delisted National Clandestine Laboratory Register
HIST Cal-Sites - - - - - Historical Calsites Database
CDL - - - - - Clandestine Drug Labs
Toxic Pits - - - - - Toxic Pits Cleanup Act Sites
US CDL - - - - - National Clandestine Laboratory Register

EXECUTIVE SUMMARY

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
DRYCLEANERS	Cleaner Facilities

EXECUTIVE SUMMARY

EMI - Emissions Inventory Data
ENF - Enforcement Action Listing
Financial Assurance - Financial Assurance Information Listing
HIST CORTESE - Hazardous Waste & Substance Site List
HWP - EnviroStor Permitted Facilities Listing
HWT - Registered Hazardous Waste Transporter Database
MINES - Mines Site Location Listing
MWMP - Medical Waste Management Program Listing
NPDES - NPDES Permits Listing
PEST LIC - Pesticide Regulation Licenses Listing
PROC - Certified Processors Database
Notify 65 - Proposition 65 Records
UIC - UIC Listing
WASTEWATER PITS - Oil Wastewater Pits Listing
WDS - Waste Discharge System
WIP - Well Investigation Program Case List
FUELS PROGRAM - EPA Fuels Program Registered Listing
ABANDONED MINES - Abandoned Mines
ECHO - Enforcement & Compliance History Information

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP - EDR Proprietary Manufactured Gas Plants
EDR Hist Auto - EDR Exclusive Historic Gas Stations
EDR Hist Cleaner - EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF - Recovered Government Archive Solid Waste Facilities List
RGA LUST - Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal ERNS list

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 09/26/2016 has revealed that there is 1 ERNS site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	BORONDA ROAD	0 - 1/8 (0.000 mi.)	1	8

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/31/2016 has revealed that there are 3 ENVIROSTOR sites within approximately 1.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROGGE ROAD SCHOOL Facility Id: 27010004 Status: No Further Action	***1301 ROGGE ROAD***	***NW 1/4 - 1/2 (0.347 mi.)***	***11***	***18***
PROPOSED NEW SCHOOL Facility Id: 60000165 Status: Active	***1100 ROGGE ROAD***	***WNW 1/2 - 1 (0.880 mi.)***	***15***	***24***

Lower Elevation	Address	Direction / Distance	Map ID	Page
FRANK PAUL ELEMENTAR Facility Id: 60002190 Status: Active	***1290 & 1296 RIDER AV***	***S 1 - 2 (1.074 mi.)***	***16***	***31***

State and tribal registered storage tank lists

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 07/06/2016 has revealed that there are 2 AST

EXECUTIVE SUMMARY

sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	239 NATIVIDAD RD	W 1/4 - 1/2 (0.368 mi.)	A13	22
TRIANGLE FARMS, INC-	***239 NATIVIDAD RD***	***W 1/4 - 1/2 (0.368 mi.)***	***A14***	***22***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 10/31/2016 has revealed that there is 1 SCH site within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROGGE ROAD SCHOOL Facility Id: 27010004 Status: No Further Action	***1301 ROGGE ROAD***	***NW 1/4 - 1/2 (0.347 mi.)***	***11***	***18***

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Status: A Tank Status: A Comp Number: 65307	***250 NATIVIDAD RD***	***W 1/4 - 1/2 (0.322 mi.)***	***A6***	***10***
AMERICAN TAKII INC. Status: A Tank Status: A Comp Number: 56374	***301 NATIVIDAD RD***	***NW 1/4 - 1/2 (0.333 mi.)***	***B8***	***12***

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 3 HIST UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Facility Id: 00000065307	***250 NATIVIDAD RD***	***W 1/4 - 1/2 (0.322 mi.)***	***A7***	***11***
AMERICAN TAKII INC. Facility Id: 00000056374	***301 NATIVIDAD RD***	***NW 1/4 - 1/2 (0.333 mi.)***	***B9***	***13***
ALBERTO A ROMERO	***301 NATIVIDAD RD***	***NW 1/4 - 1/2 (0.333 mi.)***	***B10***	***17***

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Facility Id: 27002679 Status: A	***250 NATIVIDAD RD***	***W 1/4 - 1/2 (0.322 mi.)***	***A6***	***10***
AMERICAN TAKII INC. Facility Id: 27001353 Status: A	***301 NATIVIDAD RD***	***NW 1/4 - 1/2 (0.333 mi.)***	***B8***	***12***

Other Ascertainable Records

CUPA Listings: A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 6 CUPA Listings sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SALINAS BERRY FARMS- Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	261 NATIVIDAD RD	NW 1/4 - 1/2 (0.309 mi.)	5	9
SETTRINI RANCH Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	***250 NATIVIDAD RD***	***W 1/4 - 1/2 (0.322 mi.)***	***A7***	***11***
AMERICAN TAKII INC. Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	***301 NATIVIDAD RD***	***NW 1/4 - 1/2 (0.333 mi.)***	***B9***	***13***
TRIANGLE FARMS, INC- Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	***239 NATIVIDAD RD***	***W 1/4 - 1/2 (0.368 mi.)***	***A14***	***22***

Lower Elevation	Address	Direction / Distance	Map ID	Page
SPRINT SITE MO45XC06 Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	1941 HEMINGWAY DR	SW 1/8 - 1/4 (0.245 mi.)	4	9

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
AT&T MOBILITY - NORT Database: CUPA MONTEREY, Date of Government Version: 06/24/2016	1877 HEMINGWAY DR	SW 1/4 - 1/2 (0.366 mi.)	12	21

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the HAZNET list, as provided by EDR, and dated 12/31/2015 has revealed that there are 2 HAZNET sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
STEVE & CAROL SILVA GEPAID: CAC002569723	804 OLD STAGE RD	ENE 0 - 1/8 (0.079 mi.)	2	8
BOB SWANSON GEPAID: CAC002605029	808 OLD STAGE RD	ENE 0 - 1/8 (0.125 mi.)	3	8

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

Site Name	Database(s)
	CDL
NATIVIDAD ELEMENTARY SCHOOL	ENVIROSTOR, SCH
ELEMENTARY SCHOOL #12 (CREEK BRIDG	ENVIROSTOR, SCH
CREEKBRIDGE MIDDLE SCHOOL	ENVIROSTOR, SCH
MCKINNON ELEMENTARY SCHOOL	ENVIROSTOR, SCH
PROPOSED ELEMENTARY SCHOOL #5 HARR	ENVIROSTOR, SCH
ELEMENTARY SCHOOL #14 (GLOBAL PROP	ENVIROSTOR, SCH

OVERVIEW MAP - 4889605.1S

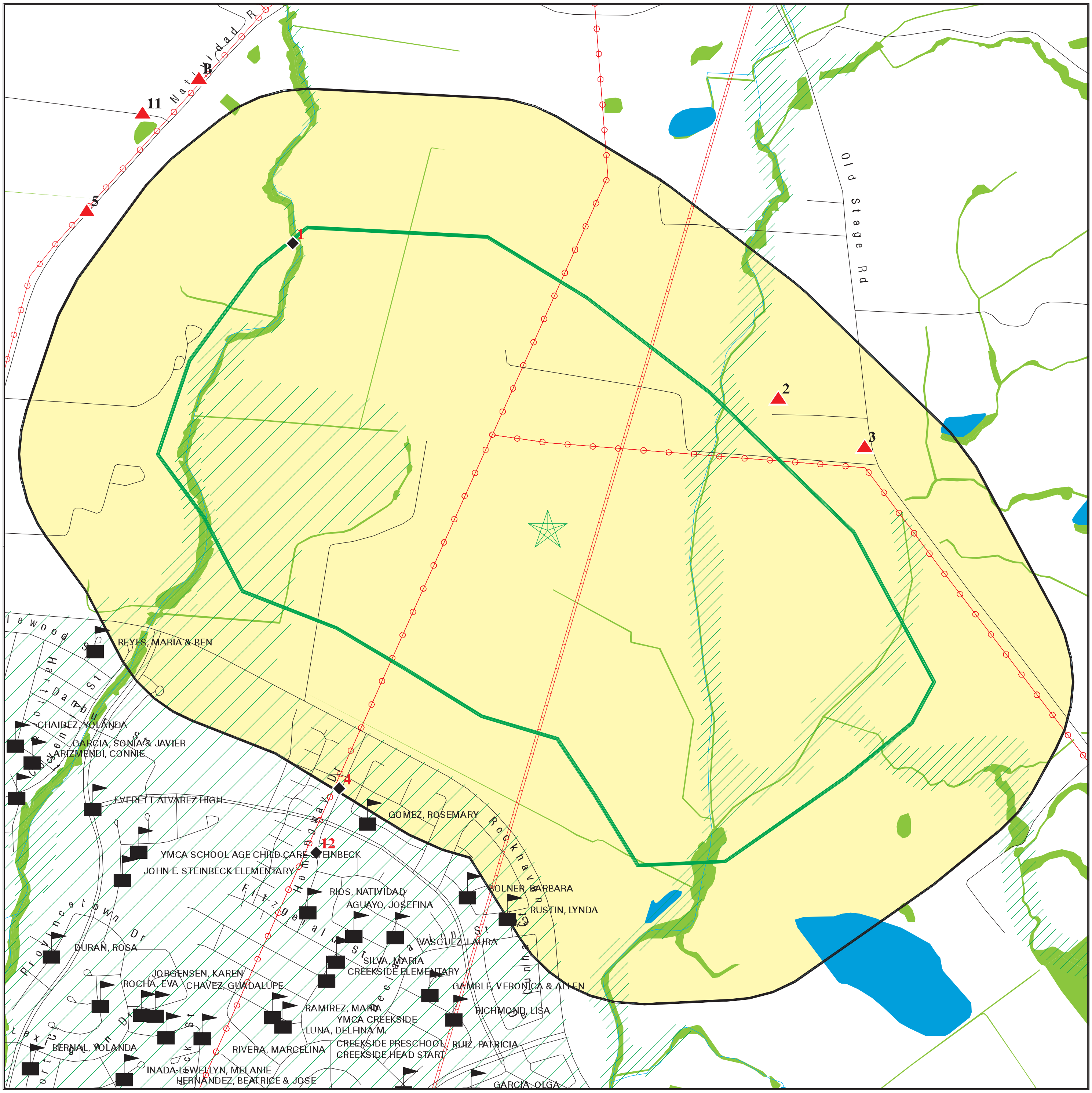
0 1/2 1 2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	City of Salinas-CASP	CLIENT:	Geocon Consultants, Inc.
ADDRESS:	21000 E. Boronda Rd Salinas CA 93906	CONTACT:	Matthew Tidwell
		INQUIRY #:	4889605.1s
LAT/LONG:	36.7176 / 121.6039	DATE:	March 24, 2017 6:19 pm

DETAIL MAP - 4889605.1S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas CA 93906 LAT/LONG: 36.7176 / 121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Matthew Tidwell INQUIRY #: 4889605.1s DATE: March 24, 2017 6:25 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.125		0	0	0	0	0	0
Proposed NPL	1.125		0	0	0	0	0	0
NPL LIENS	0.125		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.125		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	0.625		0	0	0	0	NR	0
SEMS	0.625		0	0	0	0	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.625		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.125		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.625		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.375		0	0	0	NR	NR	0
RCRA-SQG	0.375		0	0	0	NR	NR	0
RCRA-CESQG	0.375		0	0	0	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.625		0	0	0	0	NR	0
US ENG CONTROLS	0.625		0	0	0	0	NR	0
US INST CONTROL	0.625		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.125		1	NR	NR	NR	NR	1
State- and tribal - equivalent NPL								
RESPONSE	1.125		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.125		0	0	1	1	1	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.625		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LUST	0.625		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.625		0	0	0	0	NR	0
SLIC	0.625		0	0	0	0	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.375		0	0	0	NR	NR	0
UST	0.375		0	0	0	NR	NR	0
AST	0.375		0	0	2	NR	NR	2
INDIAN UST	0.375		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.625		0	0	0	0	NR	0
VCP	0.625		0	0	0	0	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.625		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.625		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.625		0	0	0	0	NR	0
SWRCY	0.625		0	0	0	0	NR	0
HAULERS	0.125		0	NR	NR	NR	NR	0
INDIAN ODI	0.625		0	0	0	0	NR	0
ODI	0.625		0	0	0	0	NR	0
DEBRIS REGION 9	0.625		0	0	0	0	NR	0
IHS OPEN DUMPS	0.625		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.125		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.125		0	0	0	0	0	0
SCH	0.375		0	0	1	NR	NR	1
CDL	0.125		0	NR	NR	NR	NR	0
Toxic Pits	1.125		0	0	0	0	0	0
US CDL	0.125		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.375		0	0	2	NR	NR	2
HIST UST	0.375		0	0	3	NR	NR	3
CA FID UST	0.375		0	0	2	NR	NR	2
Local Land Records								
LIENS	0.125		0	NR	NR	NR	NR	0
LIENS 2	0.125		0	NR	NR	NR	NR	0
DEED	0.625		0	0	0	0	NR	0
Records of Emergency Release Reports								
HMIRS	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	0.125		0	NR	NR	NR	NR	0
LDS	0.125		0	NR	NR	NR	NR	0
MCS	0.125		0	NR	NR	NR	NR	0
SPILLS 90	0.125		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.375		0	0	0	NR	NR	0
FUDS	1.125		0	0	0	0	0	0
DOD	1.125		0	0	0	0	0	0
SCRD DRYCLEANERS	0.625		0	0	0	0	NR	0
US FIN ASSUR	0.125		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.125		0	NR	NR	NR	NR	0
2020 COR ACTION	0.375		0	0	0	NR	NR	0
TSCA	0.125		0	NR	NR	NR	NR	0
TRIS	0.125		0	NR	NR	NR	NR	0
SSTS	0.125		0	NR	NR	NR	NR	0
ROD	1.125		0	0	0	0	0	0
RMP	0.125		0	NR	NR	NR	NR	0
RAATS	0.125		0	NR	NR	NR	NR	0
PRP	0.125		0	NR	NR	NR	NR	0
PADS	0.125		0	NR	NR	NR	NR	0
ICIS	0.125		0	NR	NR	NR	NR	0
FTTS	0.125		0	NR	NR	NR	NR	0
MLTS	0.125		0	NR	NR	NR	NR	0
COAL ASH DOE	0.125		0	NR	NR	NR	NR	0
COAL ASH EPA	0.625		0	0	0	0	NR	0
PCB TRANSFORMER	0.125		0	NR	NR	NR	NR	0
RADINFO	0.125		0	NR	NR	NR	NR	0
HIST FTTS	0.125		0	NR	NR	NR	NR	0
DOT OPS	0.125		0	NR	NR	NR	NR	0
CONSENT	1.125		0	0	0	0	0	0
INDIAN RESERV	1.125		0	0	0	0	0	0
FUSRAP	1.125		0	0	0	0	0	0
UMTRA	0.625		0	0	0	0	NR	0
LEAD SMELTERS	0.125		0	NR	NR	NR	NR	0
US AIRS	0.125		0	NR	NR	NR	NR	0
US MINES	0.375		0	0	0	NR	NR	0
FINDS	0.125		0	NR	NR	NR	NR	0
DOCKET HWC	0.125		0	NR	NR	NR	NR	0
UXO	1.125		0	0	0	0	0	0
CA BOND EXP. PLAN	1.125		0	0	0	0	0	0
Cortese	0.625		0	0	0	0	NR	0
CUPA Listings	0.375		0	1	5	NR	NR	6
DRYCLEANERS	0.375		0	0	0	NR	NR	0
EMI	0.125		0	NR	NR	NR	NR	0
ENF	0.125		0	NR	NR	NR	NR	0
Financial Assurance	0.125		0	NR	NR	NR	NR	0
HAZNET	0.125		2	NR	NR	NR	NR	2
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.125		0	0	0	0	0	0
HWT	0.375		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES	0.125		0	NR	NR	NR	NR	0
MWMP	0.375		0	0	0	NR	NR	0
NPDES	0.125		0	NR	NR	NR	NR	0
PEST LIC	0.125		0	NR	NR	NR	NR	0
PROC	0.625		0	0	0	0	NR	0
Notify 65	1.125		0	0	0	0	0	0
UIC	0.125		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.625		0	0	0	0	NR	0
WDS	0.125		0	NR	NR	NR	NR	0
WIP	0.375		0	0	0	NR	NR	0
FUELS PROGRAM	0.375		0	0	0	NR	NR	0
ABANDONED MINES	0.500		0	0	0	NR	NR	0
ECHO	0.125		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.125		0	0	0	0	0	0
EDR Hist Auto	0.250		0	0	NR	NR	NR	0
EDR Hist Cleaner	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.125		0	NR	NR	NR	NR	0
RGA LUST	0.125		0	NR	NR	NR	NR	0
- Totals --		0	3	1	16	1	1	22

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 | **ERNS** | **2004729381**
N/A

BORONDA ROAD
MONTEREY (County), CA

< 1/8
1 ft.

Relative:
Lower

Actual:
125 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

---

2 | **HAZNET** | **S112932541**
N/A

ENE
< 1/8
0.079 mi.
419 ft.

STEVE & CAROL SILVA
804 OLD STAGE RD
SALINAS, CA 93906

Relative:
Higher

Actual:
144 ft.

HAZNET:

envid:	S112932541
Year:	2003
GEPAID:	CAC002569723
Contact:	STEVE & CAROL SILVA
Telephone:	8317582411
Mailing Name:	Not reported
Mailing Address:	804 OLD STAGE RD
Mailing City,St,Zip:	SALINAS, CA 93906
Gen County:	Not reported
TSD EPA ID:	CAT000546119
TSD County:	Not reported
Waste Category:	Pesticides and other waste associated with pesticide production
Disposal Method:	Transfer Station
Tons:	0.4
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Monterey

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3 | **HAZNET** | **S112954342**
N/A

ENE
< 1/8
0.125 mi.
658 ft.

BOB SWANSON
808 OLD STAGE RD
SALINAS, CA 93908

Relative:
Higher

Actual:
149 ft.

HAZNET:

envid:	S112954342
Year:	2006
GEPAID:	CAC002605029
Contact:	BOB SWANSON
Telephone:	8314848100
Mailing Name:	Not reported
Mailing Address:	PO BOX 329
Mailing City,St,Zip:	SALINAS, CA 93902
Gen County:	Not reported
TSD EPA ID:	CAD982042475
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.68
Cat Decode:	Not reported
Method Decode:	Not reported

BOB SWANSON (Continued) **S112954342**

Facility County: Monterey

4
SW
1/8-1/4
0.245 mi.
1295 ft.

SPRINT SITE MO45XC062CLOSED****
1941 HEMINGWAY DR
SALINAS, CA 93905

CUPA Listings **S110740944**
N/A

Relative:
Lower

Actual:
124 ft.

CUPA MONTEREY:

Facility Id:	FA0820870
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0620924
Last Activity Date:	08/04/2011
Current Inspection Date:	08/04/2012
Mailing Address:	PO BOX 7994
Mailing City State Zip:	SHAWNEE MISSION, KS 66207
Program Identifier:	HMMS-CELL SITE
Prior Inspection Date:	12/10/2011
Owner ID:	OW0800768
Last Billing Date:	05/15/2011
Last Payment Date:	06/21/2010
Last Payment Amount:	569.00
Total Fee Amount:	499.00
Total Amount Paid:	Not reported
Units:	Not reported
Financial Status:	(none)

5
NW
1/4-1/2
0.309 mi.
1634 ft.

SALINAS BERRY FARMS-MADOLORA*CLOSED
261 NATIVIDAD RD
SALINAS, CA 93906

CUPA Listings **S118417567**
N/A

Relative:
Higher

Actual:
145 ft.

CUPA MONTEREY:

Facility Id:	FA0810989
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0600565
Last Activity Date:	Not reported
Current Inspection Date:	Not reported
Mailing Address:	PO BOX 1756
Mailing City State Zip:	SALINAS, CA 93902
Program Identifier:	Not reported
Prior Inspection Date:	Not reported
Owner ID:	OW0800739
Last Billing Date:	03/29/2002
Last Payment Date:	06/19/2000
Last Payment Amount:	10.00
Total Fee Amount:	85.00

SALINAS BERRY FARMS-MADOLORA*CLOSED (Continued) **S118417567**

Total Amount Paid:	102.50
Units:	1
Financial Status:	Financially non-compliant

A6	**SETTRINI RANCH**	**SWEEPS UST**	**S101622758**
West	**250 NATIVIDAD RD**	**CA FID UST**	**N/A**
1/4-1/2	**SALINAS, CA 93906**		
0.322 mi.			
1698 ft.	**Site 1 of 4 in cluster A**		

Relative: **Higher**

Actual: **134 ft.**

SWEEPS UST:

Status:	Active
Comp Number:	65307
Number:	9
Board Of Equalization:	Not reported
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	07-31-88
Owner Tank Id:	1
SWRCB Tank Id:	27-000-065307-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	1

CA FID UST:

Facility ID:	27002679
Regulated By:	UTNKA
Regulated ID:	00065307
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4084490168
Mail To:	Not reported
Mailing Address:	250 NATIVIDAD RD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SALINAS 93906
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

A7	**SETTRINI RANCH**	**HIST UST**	**U001593317**
West	**250 NATIVIDAD RD**	**CUPA Listings**	**N/A**
1/4-1/2	**SALINAS, CA 93906**		
0.322 mi.			
1698 ft.	**Site 2 of 4 in cluster A**		

Relative: Higher

Actual: 134 ft.

HIST UST:

File Number:	0002E21B
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002E21B.pdf
Region:	STATE
Facility ID:	00000065307
Facility Type:	Other
Other Type:	FARMING
Contact Name:	Not reported
Telephone:	4084490168
Owner Name:	GUS W. SETTRINI
Owner Address:	250 NATIVIDAD ROAD
Owner City,St,Zip:	SALINAS, CA 93906
Total Tanks:	0001

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

CUPA MONTEREY:

Facility Id:	FA0814339
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0604251
Last Activity Date:	08/27/2009
Current Inspection Date:	08/28/2012
Mailing Address:	250 NATIVIDAD RD
Mailing City State Zip:	SALINAS, CA 93906
Program Identifier:	Not reported
Prior Inspection Date:	08/28/2009
Owner ID:	OW0803571
Last Billing Date:	05/26/2016
Last Payment Date:	06/23/2016
Last Payment Amount:	252.00
Total Fee Amount:	203.00

SETTRINI RANCH (Continued) **U001593317**

Total Amount Paid: 203.00
Units: 1
Financial Status: Financially compliant

B8
NW
1/4-1/2
0.333 mi.
1757 ft.

AMERICAN TAKII INC.
301 NATIVIDAD RD
SALINAS, CA 93906

SWEEPS UST **S101622750**
CA FID UST **N/A**

Site 1 of 3 in cluster B

Relative:
Higher

Actual:
154 ft.

SWEEPS UST:

Status: Active
Comp Number: 56374
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 07-31-88
Owner Tank Id: 1
SWRCB Tank Id: 27-000-056374-000001
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 2

Status: Active
Comp Number: 56374
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 07-31-88
Owner Tank Id: 2
SWRCB Tank Id: 27-000-056374-000002
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:

Facility ID: 27001353
Regulated By: UTNKA
Regulated ID: 00056374
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4084434901
Mail To: Not reported
Mailing Address: 301 NATIVIDAD RD
Mailing Address 2: Not reported
Mailing City,St,Zip: SALINAS 93906
Contact: Not reported

AMERICAN TAKII INC. (Continued) **S101622750**

Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

B9
NW
1/4-1/2
0.333 mi.
1757 ft.

AMERICAN TAKII INC.
301 NATIVIDAD RD
SALINAS, CA 93906

Site 2 of 3 in cluster B

HIST UST
CUPA Listings
NPDES

U001593304
N/A

Relative:
Higher

Actual:
154 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000056374
Facility Type:	Other
Other Type:	SEED COMPANY
Contact Name:	MELVIN AOKI, VICE-PRESIDENT
Telephone:	4084434901
Owner Name:	AMERICAN TAKII, INC.
Owner Address:	301 NATIVIDAD ROAD
Owner City,St,Zip:	SALINAS, CA 93906
Total Tanks:	0002

Tank Num:	001
Container Num:	1
Year Installed:	1982
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	16
Leak Detection:	None

Tank Num:	002
Container Num:	2
Year Installed:	1982
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	16
Leak Detection:	None

CUPA MONTEREY:

Facility Id:	FA0814340
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0606869
Last Activity Date:	04/28/2014
Current Inspection Date:	04/30/2017
Mailing Address:	301 NATIVIDAD RD
Mailing City State Zip:	SALINAS, CA 93906

AMERICAN TAKII INC. (Continued) **U001593304**

Program Identifier:	Not reported
Prior Inspection Date:	08/18/2012
Owner ID:	OW0803572
Last Billing Date:	05/26/2016
Last Payment Date:	07/06/2015
Last Payment Amount:	236.00
Total Fee Amount:	203.00
Total Amount Paid:	Not reported
Units:	1
Financial Status:	(none)

Facility Id:	FA0814340
Region:	MONTEREY
Program/Element Code:	512K
Program/Element:	AG SITE-WASTE COMPONENT
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0606060
Last Activity Date:	01/20/2005
Current Inspection Date:	06/28/1999
Mailing Address:	301 NATIVIDAD RD
Mailing City State Zip:	SALINAS, CA 93906
Program Identifier:	Not reported
Prior Inspection Date:	Not reported
Owner ID:	OW0803572
Last Billing Date:	05/26/2016
Last Payment Date:	07/06/2015
Last Payment Amount:	236.00
Total Fee Amount:	28.00
Total Amount Paid:	56.00
Units:	Not reported
Financial Status:	Financially compliant

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	3
Regulatory Measure Id:	448217
Order No:	Not reported
Regulatory Measure Type:	Construction
Place Id:	Not reported
WDID:	3 27C370705
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	10/23/2015
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	8/19/2014
PROCESSED DATE:	8/27/2014
STATUS CODE NAME:	Terminated
STATUS DATE:	10/23/2015

AMERICAN TAKII INC. (Continued) **U001593304**

PLACE SIZE:	20
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Steve Wiley
FACILITY CONTACT TITLE:	General Manager COO
FACILITY CONTACT PHONE:	831-443-4901
FACILITY CONTACT PHONE EXT:	14
FACILITY CONTACT EMAIL:	swiley@takii.com
OPERATOR NAME:	American Takii Incorporated
OPERATOR ADDRESS:	301 Natividad Rd
OPERATOR CITY:	Salinas
OPERATOR STATE:	California
OPERATOR ZIP:	93906
OPERATOR CONTACT NAME:	Steve Wiley
OPERATOR CONTACT TITLE:	General Manager COO
OPERATOR CONTACT PHONE:	831-443-4901
OPERATOR CONTACT PHONE EXT:	14
OPERATOR CONTACT EMAIL:	swiley@takii.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	American Takii Incorporated
DEVELOPER ADDRESS:	301 Natividad Rd
DEVELOPER CITY:	Salinas
DEVELOPER STATE:	California
DEVELOPER ZIP:	93906
DEVELOPER CONTACT NAME:	Steve Wiley
DEVELOPER CONTACT TITLE:	General Manager COO
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	N
CONSTYPE BELOW GROUND IND:	N
CONSTYPE CABLE LINE IND:	N
CONSTYPE COMM LINE IND:	N
CONSTYPE COMMERTIAL IND:	N
CONSTYPE ELECTRICAL LINE IND:	N
CONSTYPE GAS LINE IND:	N
CONSTYPE INDUSTRIAL IND:	Y
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	N
CONSTYPE RECONS IND:	N
CONSTYPE RESIDENTIAL IND:	N
CONSTYPE TRANSPORT IND:	N
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	N
CONSTYPE WATER SEWER IND:	N
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Gabilan Creek
CERTIFIER NAME:	Steven Wiley
CERTIFIER TITLE:	General Manager COO
CERTIFICATION DATE:	19-AUG-14
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	3

AMERICAN TAKII INC. (Continued) **U001593304**

Regulatory Measure Id:	448217
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	3 27C370705
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/27/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	10/23/2015
Discharge Name:	American Takii Incorporated
Discharge Address:	301 Natividad Rd
Discharge City:	Salinas
Discharge State:	California
Discharge Zip:	93906
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported

AMERICAN TAKII INC. (Continued) **U001593304**

CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

B10 **NW** **1/4-1/2** **0.333 mi.** **1757 ft.**	**ALBERTO A ROMERO** **301 NATIVIDAD RD** **SALINAS, CA 93906** **Site 3 of 3 in cluster B**	**HIST UST** **PEST LIC**	**S117634639** **N/A**

Relative:
Higher

Actual:
154 ft.

HIST UST:

File Number:	0002A6F7
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002A6F7.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported

Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

PEST LIC:

Facility Type:	QAC
Categories:	H
License No:	129942
Issued or Renewed Date:	01/09/2016
Expiration Date:	12/31/2017

11 **NW** **1/4-1/2** **0.347 mi.** **1834 ft.**	**ROGGE ROAD SCHOOL** **1301 ROGGE ROAD** **SALINAS, CA 93906**	**ENVIROSTOR** **SCH**	**S107737164** **N/A**

Relative:
Higher

Actual:
150 ft.

ENVIROSTOR:

Facility ID: 27010004
Status: No Further Action
Status Date: 12/13/2000
Site Code: 204017
Site Type: School Investigation
Site Type Detailed: School
Acres: 19
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.73343
Longitude: -121.6322
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: DDD DDE DDT HCH (beta Endosulfan 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB) Endosulfan Dieldrin
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL
Alias Name: POTENTIAL RAGGE ROAD SCHOOL SITE/VCA
Alias Type: Alternate Name
Alias Name: ROGGE ROAD SCHOOL SITE
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEM SD-ROGGE RD MID
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type: Alternate Name
Alias Name: 204002
Alias Type: Project Code (Site Code)
Alias Name: 204017
Alias Type: Project Code (Site Code)
Alias Name: 27010004
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/28/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 02/04/2000

ROGGE ROAD SCHOOL (Continued) **S107737164**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/14/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 04/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/19/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 27010004
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 19
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Site Code: 204017
Assembly: 30
Senate: 12
Special Program Status: Not reported
Status: No Further Action
Status Date: 12/13/2000
Restricted Use: NO

ROGGE ROAD SCHOOL (Continued) **S107737164**

Funding:	School District
Latitude:	36.73343
Longitude:	-121.6322
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	DDD, DDD, DDE, DDT, HCH (beta, Endosulfan, 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB), Endosulfan, Dieldrin
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	POTENTIAL RAGGE ROAD SCHOOL SITE/VCA
Alias Type:	Alternate Name
Alias Name:	ROGGE ROAD SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	SANTA RITA UNION ELEM SD-ROGGE RD MID
Alias Type:	Alternate Name
Alias Name:	SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type:	Alternate Name
Alias Name:	204002
Alias Type:	Project Code (Site Code)
Alias Name:	204017
Alias Type:	Project Code (Site Code)
Alias Name:	27010004
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/28/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	02/04/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	12/13/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	01/14/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	04/10/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo

ROGGE ROAD SCHOOL (Continued) **S107737164**

Completed Date:	12/19/2000
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

12
SW
1/4-1/2
0.366 mi.
1930 ft.

AT&T MOBILITY - NORTHEAST SALINAS (14281) **CUPA Listings** **S118417389**
1877 HEMINGWAY DR **N/A**
SALINAS, CA 93906

Relative:
Lower

Actual:
120 ft.

CUPA MONTEREY:

Facility Id:	FA0818569
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0634733
Last Activity Date:	Not reported
Current Inspection Date:	Not reported
Mailing Address:	P.O. Box 5095, Room 3E000
Mailing City State Zip:	San Ramon, CA 94583
Program Identifier:	Not reported
Prior Inspection Date:	Not reported
Owner ID:	OW0807248
Last Billing Date:	05/31/2015
Last Payment Date:	07/02/2014
Last Payment Amount:	555.00
Total Fee Amount:	Not reported
Total Amount Paid:	Not reported
Units:	0
Financial Status:	(none)
Facility Id:	FA0818569
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0611532
Last Activity Date:	04/22/2015
Current Inspection Date:	04/22/2016
Mailing Address:	P.O. Box 5095, Room 3E000
Mailing City State Zip:	San Ramon, CA 94583
Program Identifier:	Not reported
Prior Inspection Date:	04/19/2014
Owner ID:	OW0807248
Last Billing Date:	05/31/2015
Last Payment Date:	07/02/2014

AT&T MOBILITY - NORTHEAST SALINAS (14281) (Continued) **S118417389**

Last Payment Amount:	555.00
Total Fee Amount:	499.00
Total Amount Paid:	Not reported
Units:	Not reported
Financial Status:	(none)

A13
West
1/4-1/2
0.368 mi.
1944 ft.

239 NATIVIDAD RD
SALINAS, CA

AST **A100336889**
N/A

Site 3 of 4 in cluster A

Relative:
Higher

Actual:
134 ft.

AST:

Certified Unified Program Agencies:	Monterey
Owner:	TRIANGLE FARMS, INC-BONDESEN RANCH
Total Gallons:	9,200
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

A14
West
1/4-1/2
0.368 mi.
1944 ft.

TRIANGLE FARMS, INC-BONDESEN RANCH
239 NATIVIDAD RD
SALINAS, CA 93906

AST
CUPA Listings

S110740147
N/A

Site 4 of 4 in cluster A

Relative:
Higher

Actual:
134 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	TRIANGLE FARMS, INC
Total Gallons:	Not reported
CERSID:	10431376
Facility ID:	Not reported
Business Name:	TRIANGLE FARMS, INC-BONDESEN RANCH
Phone:	(831) 443-8300
Fax:	(831) 443-8044

TRIANGLE FARMS, INC-BONDESEN RANCH (Continued) **S110740147**

Mailing Address:	PO BOX 1251
Mailing Address City:	SALINAS
Mailing Address State:	CA
Mailing Address Zip Code:	93902
Operator Name:	ATTN: TARP, BILL
Operator Phone:	(831) 443-8300
Owner Phone:	(831) 443-8300
Owner Mail Address:	PO BOX 1251
Owner State:	CA
Owner Zip Code:	93902
Owner Country:	United States
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	CAL000138345

CUPA MONTEREY:

Facility Id:	FA0816660
Region:	MONTEREY
Program/Element Code:	5516
Program/Element:	AG AST PETROLEUM SPCC EXEMPT 1320 TO 9,999GAL
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0625602
Last Activity Date:	04/09/2015
Current Inspection Date:	01/28/2011
Mailing Address:	PO BOX 1251
Mailing City State Zip:	SALINAS, CA 93902
Program Identifier:	AG HAZ
Prior Inspection Date:	01/25/2008
Owner ID:	OW0805684
Last Billing Date:	05/26/2016
Last Payment Date:	07/16/2015
Last Payment Amount:	478.00
Total Fee Amount:	88.00
Total Amount Paid:	Not reported
Units:	1
Financial Status:	(none)

Facility Id:	FA0816660
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0607656
Last Activity Date:	04/09/2015
Current Inspection Date:	04/09/2018
Mailing Address:	PO BOX 1251
Mailing City State Zip:	SALINAS, CA 93902
Program Identifier:	AG HAZ
Prior Inspection Date:	03/19/2016
Owner ID:	OW0805684

TRIANGLE FARMS, INC-BONDESEN RANCH (Continued) **S110740147**

Last Billing Date:	05/26/2016
Last Payment Date:	07/16/2015
Last Payment Amount:	478.00
Total Fee Amount:	203.00
Total Amount Paid:	Not reported
Units:	1
Financial Status:	(none)

Facility Id:	FA0816660
Region:	MONTEREY
Program/Element Code:	512K
Program/Element:	AG SITE-WASTE COMPONENT
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0607657
Last Activity Date:	04/09/2015
Current Inspection Date:	Not reported
Mailing Address:	PO BOX 1251
Mailing City State Zip:	SALINAS, CA 93902
Program Identifier:	AG HAZ
Prior Inspection Date:	Not reported
Owner ID:	OW0805684
Last Billing Date:	05/26/2016
Last Payment Date:	07/16/2015
Last Payment Amount:	478.00
Total Fee Amount:	35.00
Total Amount Paid:	Not reported
Units:	1
Financial Status:	(none)

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15 **WNW** **1/2-1** **0.880 mi.** **4646 ft.**	**PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY** **1100 ROGGE ROAD** **SALINAS, CA 93906**	**ENVIROSTOR** **SCH**	**S107737092** **N/A**

Relative: **Higher**

Actual: **150 ft.**

ENVIROSTOR:

Facility ID:	60000165
Status:	Active
Status Date:	09/26/2012
Site Code:	204172
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	38.97
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Mellan Songco
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Assembly:	30
Senate:	12
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	36.72843
Longitude:	-121.6291

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

APN: 211-011-008, 211-011-011, 211011008000
Past Use: ABOVE GROUND STORAGE TANKS, AGRICULTURAL - ROW CROPS
Potential COC: Under Investigation Arsenic Chlordane DDD DDE DDT Endrin Lead Naturally Occurring Asbestos (NOA TPH-MOTOR OIL Dieldrin
Confirmed COC: Under Investigation 40002-NO Dieldrin 30001-NO Chlordane 30006-NO 30007-NO 30008-NO 30010-NO 30013-NO 3002502-NO
Potential Description: SOIL
Alias Name: High School #5
Alias Type: Alternate Name
Alias Name: 211-011-008
Alias Type: APN
Alias Name: 211-011-011
Alias Type: APN
Alias Name: 211011008000
Alias Type: APN
Alias Name: 204172
Alias Type: Project Code (Site Code)
Alias Name: 60000165
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 11/30/2007
Comments: DTSC issued an Inactive Status Letter

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 08/28/2007
Comments: Sent fully executed agreement to district

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 02/12/2013
Comments: On February 12, 2013, DTSC approved the implementation of the SSI Tech memo.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 11/07/2013
Comments: On October 4, 2013, DTSC approved the SSI WP Addendum for the Proposed HS -Mortensen Property.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 05/28/2014
Comments: On May 2, 2014, DTSC concurred with the further action required determination at the site and approved the SSI report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 10/28/2015

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 08/25/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 04/30/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Work Notice
Completed Date: 02/01/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Responsible Agency Review
Completed Date: 10/16/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/25/2013
Comments: On June 25, 2013, a DTSC representative observed the implementation of the approved SSI workplan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 11/14/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/17/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/23/2006
Comments: Not reported

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/24/2006
Comments: Rcv'd 1 copy of the Phase 1 ESA & copy of chk for $1500.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 10/26/2006
Comments: DTSC approved the PEA WP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/04/2007
Comments: DTSC approved the PEA with a further action determination. A Supplemental Site Investigation will be conducted to determine the extent of chlordan, dieldrin and PAH contamination in soils at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.15 Request
Completed Date: 09/06/2007
Comments: DTSC approved the 4.15 with a Partial Site Approval. DTSC approved the 38.3-acre former agricultural area. Further Investigation is needed on the 0.66-acre residential parcel. The Distirct does not intend to construct on the site for 2 to 3 years, but will allow continued ag use.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported
Schedule Document Type: Removal Action Completion Report
Schedule Due Date: 01/31/2017
Schedule Revised Date: Not reported

SCH:

Facility ID: 60000165
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 38.97
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 204172
Assembly: 30

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Senate:	12
Special Program Status:	Not reported
Status:	Active
Status Date:	09/26/2012
Restricted Use:	NO
Funding:	School District
Latitude:	36.72843
Longitude:	-121.6291
APN:	211-011-008, 211-011-011, 211011008000
Past Use:	ABOVE GROUND STORAGE TANKS, AGRICULTURAL - ROW CROPS
Potential COC:	Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Lead, Naturally Occurring Asbestos (NOA, TPH-MOTOR OIL, Dieldrin
Confirmed COC:	Under Investigation, 40002-NO, Dieldrin, 30001-NO, Chlordane, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30013-NO, 3002502-NO
Potential Description:	SOIL
Alias Name:	High School #5
Alias Type:	Alternate Name
Alias Name:	211-011-008
Alias Type:	APN
Alias Name:	211-011-011
Alias Type:	APN
Alias Name:	211011008000
Alias Type:	APN
Alias Name:	204172
Alias Type:	Project Code (Site Code)
Alias Name:	60000165
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inactive Status Letter
Completed Date:	11/30/2007
Comments:	DTSC issued an Inactive Status Letter

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	School Cleanup Agreement
Completed Date:	08/28/2007
Comments:	Sent fully executed agreement to district

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Tech Memo
Completed Date:	02/12/2013
Comments:	On February 12, 2013, DTSC approved the implementation of the SSI Tech memo.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Tech Memo
Completed Date:	11/07/2013
Comments:	On October 4, 2013, DTSC approved the SSI WP Addendum for the Proposed HS -Mortensen Property.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Report

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Completed Date: 05/28/2014
Comments: On May 2, 2014, DTSC concurred with the further action required determination at the site and approved the SSI report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 10/28/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 08/25/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 04/30/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Work Notice
Completed Date: 02/01/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Responsible Agency Review
Completed Date: 10/16/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/25/2013
Comments: On June 25, 2013, a DTSC representative observed the implementation of the approved SSI workplan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 11/14/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/17/2006

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/23/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/24/2006
Comments: Rcv'd 1 copy of the Phase 1 ESA & copy of chk for $1500.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 10/26/2006
Comments: DTSC approved the PEA WP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/04/2007
Comments: DTSC approved the PEA with a further action determination. A Supplemental Site Investigation will be conducted to determine the extent of chlordan, dieldrin and PAH contamination in soils at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.15 Request
Completed Date: 09/06/2007
Comments: DTSC approved the 4.15 with a Partial Site Approval. DTSC approved the 38.3-acre former agricultural area. Further Investigation is needed on the 0.66-acre residential parcel. The Distirct does not intend to construct on the site for 2 to 3 years, but will allow continued ag use.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: PROJECT WIDE
Schedule Sub Area Name: Not reported
Schedule Document Type: Removal Action Completion Report
Schedule Due Date: 01/31/2017
Schedule Revised Date: Not reported

16 **South** **> 1** **1.074 mi.** **5670 ft.**	**FRANK PAUL ELEMENTARY SCHOOL** **1290 & 1296 RIDER AVENUE** **SALINAS, CA 93905**	**ENVIROSTOR** **SCH**	**S118098158** **N/A**

Relative: **Lower**

Actual: **104 ft.**

ENVIROSTOR:

Facility ID:	60002190
Status:	Active
Status Date:	06/11/2015
Site Code:	204275
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	0.5
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Craig Sanchez
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Assembly:	, 30
Senate:	, 12
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	36.6944
Longitude:	-121.6084
APN:	004-361-011, 004-361-012, 004361011000, 004361012000
Past Use:	RESIDENTIAL AREA
Potential COC:	Under Investigation Arsenic Chlordane DDD DDE Endrin Lead TPH-MOTOR OIL
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL, UE
Alias Name:	004-361-011
Alias Type:	APN
Alias Name:	004-361-012
Alias Type:	APN
Alias Name:	004361011000
Alias Type:	APN
Alias Name:	004361012000
Alias Type:	APN
Alias Name:	204275
Alias Type:	Project Code (Site Code)
Alias Name:	60002190
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Pre-HARP Form
Completed Date:	06/30/2015
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Correspondence
Completed Date:	06/11/2015
Comments:	Not reported

FRANK PAUL ELEMENTARY SCHOOL (Continued) **S118098158**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 07/10/2015
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 60002190
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 0.5
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Craig Sanchez
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 204275
Assembly: , 30
Senate: , 12
Special Program Status: Not reported
Status: Active
Status Date: 06/11/2015
Restricted Use: NO
Funding: School District
Latitude: 36.6944
Longitude: -121.6084
APN: 004-361-011, 004-361-012, 004361011000, 004361012000
Past Use: RESIDENTIAL AREA
Potential COC: Under Investigation, Arsenic, Chlordane, DDD, DDE, Endrin, Lead, TPH-MOTOR OIL
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL, UE
Alias Name: 004-361-011
Alias Type: APN
Alias Name: 004-361-012
Alias Type: APN
Alias Name: 004361011000
Alias Type: APN
Alias Name: 004361012000
Alias Type: APN
Alias Name: 204275
Alias Type: Project Code (Site Code)
Alias Name: 60002190

FRANK PAUL ELEMENTARY SCHOOL (Continued) **S118098158**

Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Pre-HARP Form
Completed Date: 06/30/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 06/11/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 07/10/2015
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 7 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SALINAS	S107736823	NATIVIDAD ELEMENTARY SCHOOL	ARCADIA STREET/EMERALD DRIVE	93906	ENVIROSTOR, SCH
SALINAS	S109149598	ELEMENTARY SCHOOL #12 (CREEK BRIDG	EAST BORONDA ROAD/HEMINGWAY DR	93906	ENVIROSTOR, SCH
SALINAS	S109422408	CREEKBRIDGE MIDDLE SCHOOL	EAST BORONDA ROAD/HEMMINGWAY R	93906	ENVIROSTOR, SCH
SALINAS	S105628676	MCKINNON ELEMENTARY SCHOOL	BORONDA ROAD/MCKINNON STREET	93906	ENVIROSTOR, SCH
SALINAS	S110042438	PROPOSED ELEMENTARY SCHOOL #5 HARR	NORTHEST OF EAST BORONDA/NATIV	93906	ENVIROSTOR, SCH
SALINAS	S107539658		OLD STAGE COACH RD, @ HEBERT S	93906	CDL
SALINAS	S109149597	ELEMENTARY SCHOOL #14 (GLOBAL PROP	WILLIAMS ROAD/EAST BORONDA ROA	93906	ENVIROSTOR, SCH

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 29

Source: EPA
Telephone: N/A
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 29

Source: EPA
Telephone: N/A
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 29

Source: EPA
Telephone: N/A
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/14/2016
Date Data Arrived at EDR: 10/04/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 10/20/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 10/20/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/31/2016
Date Data Arrived at EDR: 11/01/2016
Date Made Active in Reports: 01/18/2017
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/31/2016
Date Data Arrived at EDR: 11/01/2016
Date Made Active in Reports: 01/18/2017
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/15/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 66

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/15/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

SLIC: Statewide SLIC Cases

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/12/2016	Source: State Water Resources Control Board
Date Data Arrived at EDR: 12/14/2016	Telephone: 866-480-1028
Date Made Active in Reports: 01/23/2017	Last EDR Contact: 03/14/2017
Number of Days to Update: 40	Next Scheduled EDR Contact: 06/26/2017
	Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003	Source: California Regional Water Quality Control Board, North Coast Region (1)
Date Data Arrived at EDR: 04/07/2003	Telephone: 707-576-2220
Date Made Active in Reports: 04/25/2003	Last EDR Contact: 08/01/2011
Number of Days to Update: 18	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004	Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Date Data Arrived at EDR: 10/20/2004	Telephone: 510-286-0457
Date Made Active in Reports: 11/19/2004	Last EDR Contact: 09/19/2011
Number of Days to Update: 30	Next Scheduled EDR Contact: 01/02/2012
	Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006	Source: California Regional Water Quality Control Board Central Coast Region (3)
Date Data Arrived at EDR: 05/18/2006	Telephone: 805-549-3147
Date Made Active in Reports: 06/15/2006	Last EDR Contact: 07/18/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 10/31/2011
	Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004	Source: Region Water Quality Control Board Los Angeles Region (4)
Date Data Arrived at EDR: 11/18/2004	Telephone: 213-576-6600
Date Made Active in Reports: 01/04/2005	Last EDR Contact: 07/01/2011
Number of Days to Update: 47	Next Scheduled EDR Contact: 10/17/2011
	Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005	Source: Regional Water Quality Control Board Central Valley Region (5)
Date Data Arrived at EDR: 04/05/2005	Telephone: 916-464-3291
Date Made Active in Reports: 04/21/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 16	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/12/2016
Date Data Arrived at EDR: 09/14/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 30

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/16/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/31/2016
Date Data Arrived at EDR: 11/01/2016
Date Made Active in Reports: 01/18/2017
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 01/03/2017
Date Data Arrived at EDR: 01/04/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 57

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 01/04/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/19/2016
Date Data Arrived at EDR: 12/20/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 78

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 08/25/2016
Date Data Arrived at EDR: 08/26/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 49

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/31/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/31/2016
Date Data Arrived at EDR: 11/01/2016
Date Made Active in Reports: 01/18/2017
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 12/05/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 67

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/01/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 35

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/27/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/29/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/06/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 45

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 37

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 01/17/2017
Number of Days to Update: 83

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/25/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 37

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/11/2016
Date Data Arrived at EDR: 11/16/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/15/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/10/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/10/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/17/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/17/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/01/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 77

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/22/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/03/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/03/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/15/2016
Date Data Arrived at EDR: 09/07/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 65

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 01/20/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 64

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/02/2016
Date Data Arrived at EDR: 09/27/2016
Date Made Active in Reports: 12/15/2016
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 09/23/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 31

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/21/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 12/06/2016
Date Data Arrived at EDR: 12/09/2016
Date Made Active in Reports: 01/18/2017
Number of Days to Update: 40

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/25/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/16/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 01/20/2017
Number of Days to Update: 63

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2015	Source: California Environmental Protection Agency
Date Data Arrived at EDR: 10/12/2016	Telephone: 916-255-1136
Date Made Active in Reports: 12/15/2016	Last EDR Contact: 01/09/2017
Number of Days to Update: 64	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: Annually

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/21/2016	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 11/22/2016	Telephone: 916-323-3400
Date Made Active in Reports: 01/23/2017	Last EDR Contact: 02/22/2017
Number of Days to Update: 62	Next Scheduled EDR Contact: 06/05/2017
	Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/12/2016	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 10/12/2016	Telephone: 916-440-7145
Date Made Active in Reports: 12/15/2016	Last EDR Contact: 01/11/2017
Number of Days to Update: 64	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/12/2016	Source: Department of Conservation
Date Data Arrived at EDR: 09/14/2016	Telephone: 916-322-1080
Date Made Active in Reports: 10/14/2016	Last EDR Contact: 03/13/2017
Number of Days to Update: 30	Next Scheduled EDR Contact: 06/26/2017
	Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 12/02/2016	Source: Department of Public Health
Date Data Arrived at EDR: 12/06/2016	Telephone: 916-558-1784
Date Made Active in Reports: 03/02/2017	Last EDR Contact: 03/07/2017
Number of Days to Update: 86	Next Scheduled EDR Contact: 06/19/2017
	Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/15/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 107

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/15/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/06/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 03/03/2017
Number of Days to Update: 87

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 78

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 12/22/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 09/14/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 30

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 02/17/2017
Number of Days to Update: 9	Next Scheduled EDR Contact: 06/05/2017
	Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 12/22/2016
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/09/2016	Source: Department of Interior
Date Data Arrived at EDR: 06/13/2016	Telephone: 202-208-2609
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 03/13/2017
Number of Days to Update: 81	Next Scheduled EDR Contact: 06/26/2017
	Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 12/11/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/20/2016	Telephone: 202-564-2280
Date Made Active in Reports: 02/17/2017	Last EDR Contact: 03/21/2017
Number of Days to Update: 59	Next Scheduled EDR Contact: 07/03/2017
	Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/21/2016	Source: EPA
Date Data Arrived at EDR: 11/22/2016	Telephone: 800-385-6164
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 02/22/2017
Number of Days to Update: 73	Next Scheduled EDR Contact: 06/05/2017
	Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/14/2016
Date Made Active in Reports: 11/18/2016
Number of Days to Update: 35

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 10/12/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 90

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 11/10/2016
Date Data Arrived at EDR: 12/13/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 9

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 10/21/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 11/18/2016
Number of Days to Update: 23

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing

Cupa Facility Listing

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List

Cupa facility list.

Date of Government Version: 09/02/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 38

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/17/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 01/26/2017
Number of Days to Update: 65

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List

Cupa Facility list

Date of Government Version: 11/01/2016
Date Data Arrived at EDR: 11/03/2016
Date Made Active in Reports: 11/22/2016
Number of Days to Update: 19

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 11/22/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 01/17/2017
Number of Days to Update: 55

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA’s are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/03/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/04/2017
Date Data Arrived at EDR: 01/10/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 51

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/23/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 36

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 11/08/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 63

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/06/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/14/2016
Date Data Arrived at EDR: 12/16/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 6

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/18/2017
Date Data Arrived at EDR: 01/20/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 41

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 66

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/17/2016
Date Data Arrived at EDR: 10/18/2016
Date Made Active in Reports: 12/15/2016
Number of Days to Update: 58

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/18/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 04/06/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 68

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/04/2016
Date Data Arrived at EDR: 10/11/2016
Date Made Active in Reports: 01/12/2017
Number of Days to Update: 93

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 12/09/2016
Date Made Active in Reports: 01/19/2017
Number of Days to Update: 41

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/19/2016
Date Data Arrived at EDR: 10/25/2016
Date Made Active in Reports: 01/12/2017
Number of Days to Update: 79

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/17/2017
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 11/29/2016
Date Data Arrived at EDR: 12/05/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 17

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/24/2016
Date Data Arrived at EDR: 06/27/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 43

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 11/08/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 44

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 11/03/2016
Date Data Arrived at EDR: 11/11/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 73

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/06/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2016
Date Data Arrived at EDR: 11/11/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 73

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/06/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/03/2016
Date Data Arrived at EDR: 11/08/2016
Date Made Active in Reports: 01/12/2017
Number of Days to Update: 65

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/02/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/19/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/20/2016
Date Data Arrived at EDR: 10/25/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 77

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/08/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 12/09/2016
Date Data Arrived at EDR: 12/13/2016
Date Made Active in Reports: 03/03/2017
Number of Days to Update: 80

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/06/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 10/05/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 86

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/10/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010	Source: San Diego County Department of Environmental Health
Date Data Arrived at EDR: 06/15/2010	Telephone: 619-338-2371
Date Made Active in Reports: 07/09/2010	Last EDR Contact: 03/06/2017
Number of Days to Update: 24	Next Scheduled EDR Contact: 06/19/2017
	Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008	Source: Department Of Public Health San Francisco County
Date Data Arrived at EDR: 09/19/2008	Telephone: 415-252-3920
Date Made Active in Reports: 09/29/2008	Last EDR Contact: 02/03/2017
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/22/2017
	Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/16/2016	Source: Department of Public Health
Date Data Arrived at EDR: 11/21/2016	Telephone: 415-252-3920
Date Made Active in Reports: 01/12/2017	Last EDR Contact: 02/21/2017
Number of Days to Update: 52	Next Scheduled EDR Contact: 05/22/2017
	Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/21/2016	Source: Environmental Health Department
Date Data Arrived at EDR: 12/27/2016	Telephone: N/A
Date Made Active in Reports: 02/14/2017	Last EDR Contact: 03/20/2017
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/03/2017
	Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 11/17/2016	Source: San Luis Obispo County Public Health Department
Date Data Arrived at EDR: 11/21/2016	Telephone: 805-781-5596
Date Made Active in Reports: 01/19/2017	Last EDR Contact: 02/21/2017
Number of Days to Update: 59	Next Scheduled EDR Contact: 06/05/2017
	Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/16/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 76

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/16/2016
Date Data Arrived at EDR: 11/21/2016
Date Made Active in Reports: 01/19/2017
Number of Days to Update: 59

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 11/10/2016
Date Made Active in Reports: 01/24/2017
Number of Days to Update: 75

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/06/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 11/16/2016
Date Data Arrived at EDR: 11/21/2016
Date Made Active in Reports: 01/19/2017
Number of Days to Update: 59

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 12/13/2016
Date Data Arrived at EDR: 12/16/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 76

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2016
Date Data Arrived at EDR: 12/21/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 1

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2016
Date Data Arrived at EDR: 12/22/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 19

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/22/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 65

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/25/2017
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 34

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 10/27/2016
Date Made Active in Reports: 01/17/2017
Number of Days to Update: 82

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/30/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 10/27/2016
Date Made Active in Reports: 01/24/2017
Number of Days to Update: 89

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/28/2016
Date Data Arrived at EDR: 12/14/2016
Date Made Active in Reports: 01/12/2017
Number of Days to Update: 29

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/15/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 01/12/2017
Number of Days to Update: 55

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 01/03/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 10/28/2016
Date Data Arrived at EDR: 11/03/2016
Date Made Active in Reports: 12/15/2016
Number of Days to Update: 42

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 01/03/2017
Number of Days to Update: 96

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/30/2017
Date Data Arrived at EDR: 02/01/2017
Date Made Active in Reports: 02/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/01/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 07/22/2016
Date Made Active in Reports: 11/22/2016
Number of Days to Update: 123

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/12/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/13/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.
Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.
Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CITY OF SALINAS-CASP
21000 E. BORONDA RD
SALINAS, CA 93906

TARGET PROPERTY COORDINATES

Latitude (North):	36.7176 - 36˚ 43’ 3.36’’
Longitude (West):	121.6039 - 121˚ 36’ 14.04’’
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	624683.9
UTM Y (Meters):	4064251.5
Elevation:	134 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5603742 NATIVIDAD, CA
Version Date:	2012
North Map:	5619818 SAN JUAN BAUTISTA, CA
Version Date:	2012
Southwest Map:	5619816 SALINAS, CA
Version Date:	2012
Northwest Map:	5603756 PRUNEDALE, CA
Version Date:	2012

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

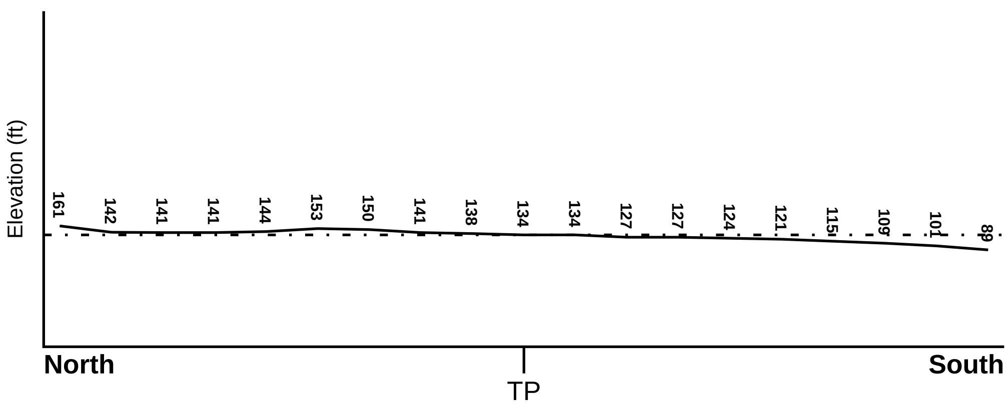
TOPOGRAPHIC INFORMATION

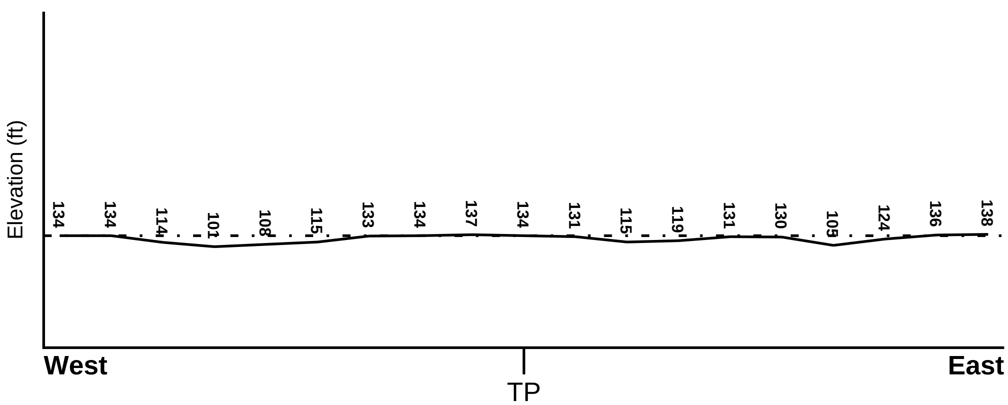
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

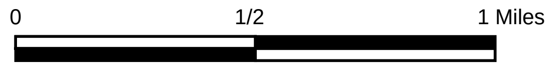
General Topographic Gradient: General ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 134 ft.



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06053C0228G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06053C0226G	FEMA FIRM Flood data
06053C0230G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NATIVIDAD	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

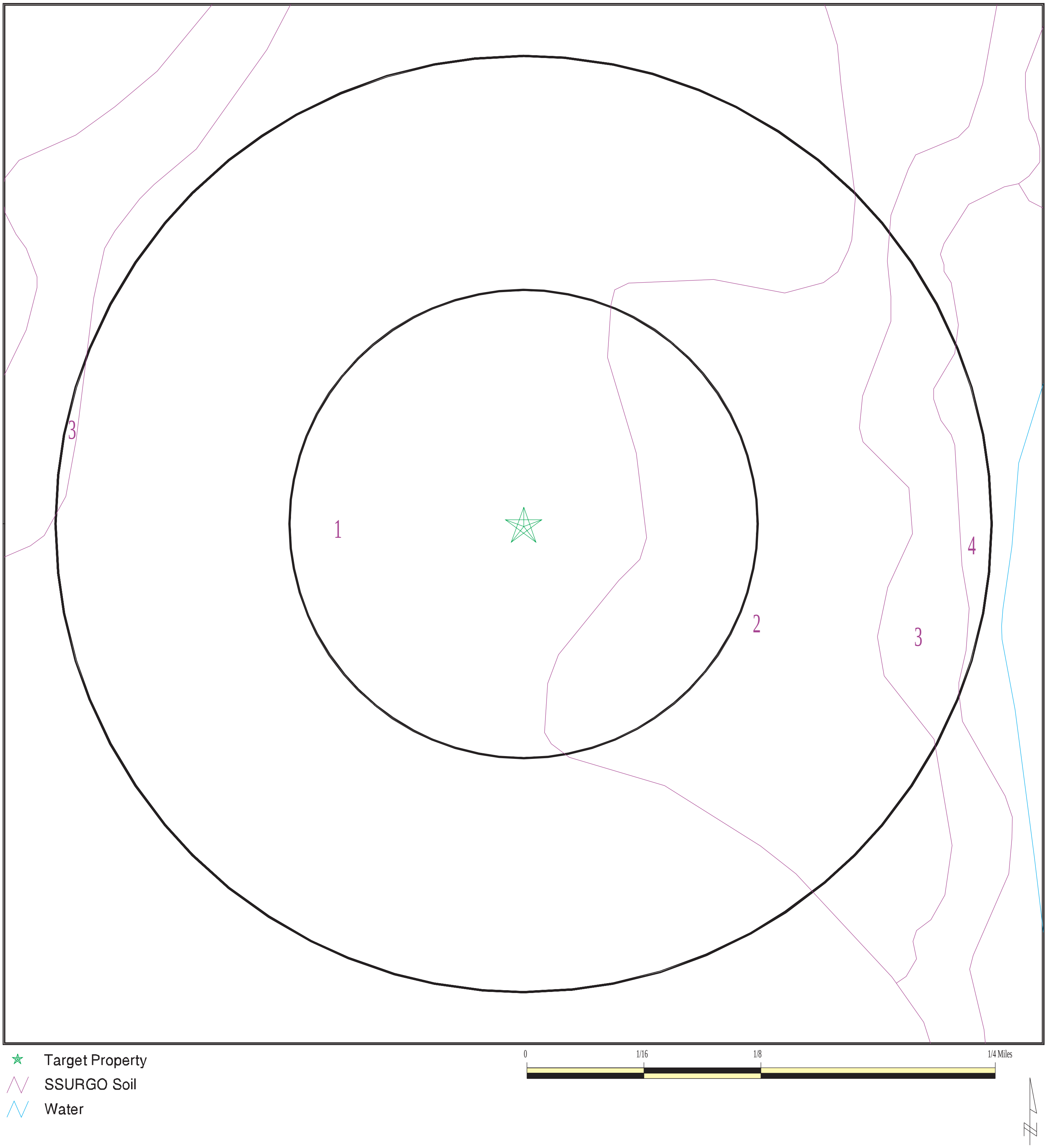
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4889605.1s



SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas CA 93906 LAT/LONG: 36.7176 / 121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Matthew Tidwell INQUIRY #: 4889605.1s DATE: March 24, 2017 6:25 pm

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Chualar

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 7.8 Min: 6.1
2	20 inches	44 inches	sandy clay loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1
3	44 inches	59 inches	gravelly sandy loam	Not reported	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1
4	59 inches	79 inches	gravelly coarse sand	Not reported	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: Placentia

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Saturated hydraulic conductivity micro m/sec**	**Soil Reaction (pH)**
1	0 inches	12 inches	sandy loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 7.8 Min: 5.6
2	12 inches	35 inches	clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 6.6
3	35 inches	57 inches	sandy clay loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 7.4
4	57 inches	68 inches	gravelly sandy loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Xerorthents, sandy

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	**Upper**	**Lower**	**Soil Texture Class**	**AASHTO Group**	**Unified Soil**	**Saturated hydraulic conductivity micro m/sec**	**Soil Reaction (pH)**
1	0 inches	59 inches	sand	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.3 Min: 5.1

Soil Map ID: 4

Soil Component Name: Danville

Soil Surface Texture: sandy clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	sandy clay loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 5.6
2	18 inches	38 inches	clay	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
3	38 inches	66 inches	gravelly sandy clay loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000176973	1/2 - 1 Mile North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

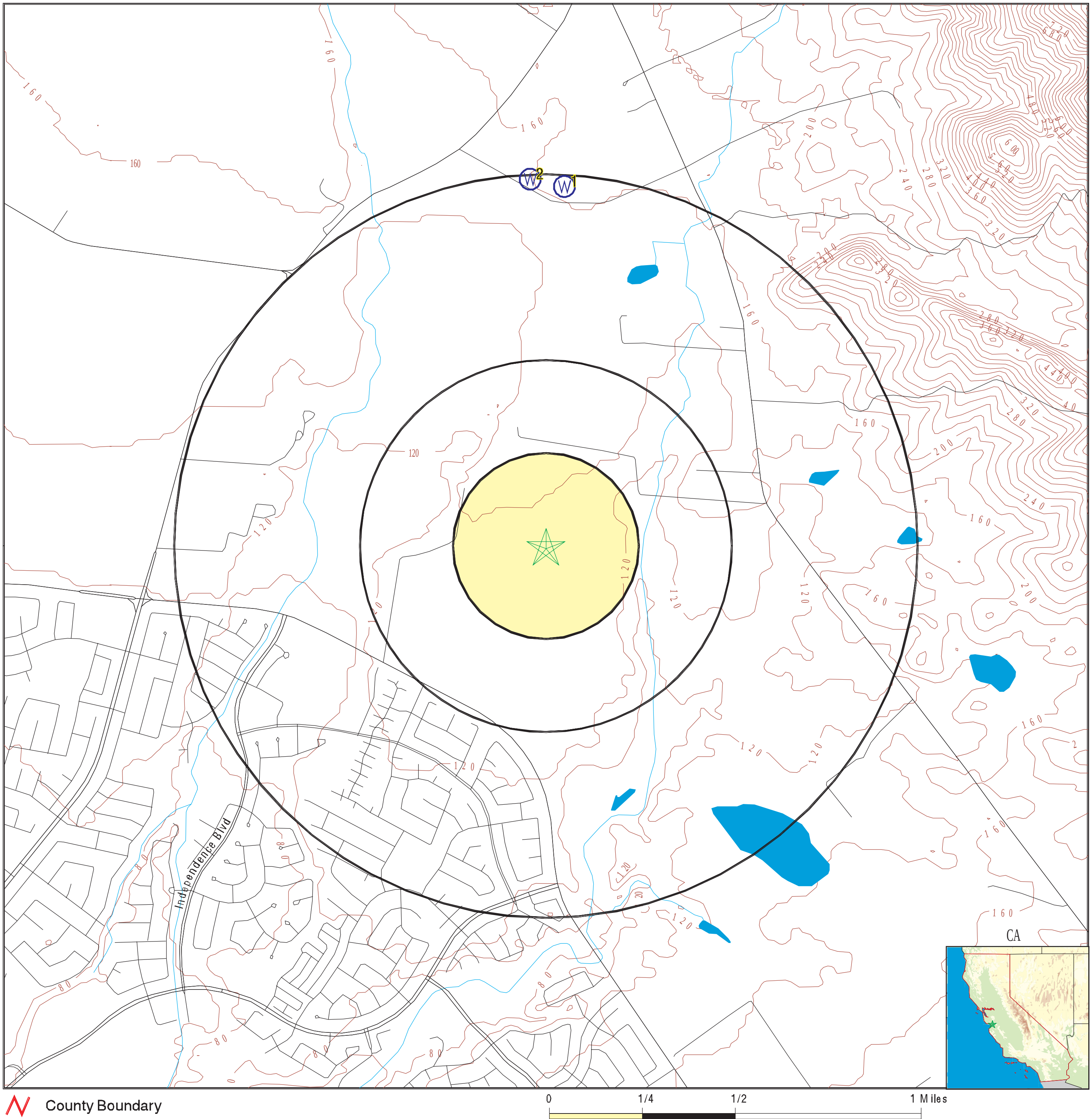
No PWS System Found

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	12061	1/2 - 1 Mile North

PHYSICAL SETTING SOURCE MAP - 4889605.1s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME: City of Salinas-CASP	CLIENT: Geocon Consultants, Inc.
ADDRESS: 21000 E. Boronda Rd	CONTACT: Matthew Tidwell
Salinas CA 93906	INQUIRY #: 4889605.1s
LAT/LONG: 36.7176 / 121.6039	DATE: March 24, 2017 6:25 pm

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **North** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000176973**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364354121360701		
Monloc name:	014S003E11H001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7316258
Longitude:	-121.6030001	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	142.30
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	394
Welldepth units:	ft	Wellholedepth:	394
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

	Database	EDR ID Number
2 **North** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**12061**

Water System Information:

Prime Station Code:	14S/03E-11H01 M	User ID:	27C
FRDS Number:	2701232001	County:	Monterey
District Number:	57	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	364355.0 1213613.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	2701232		
System Name:	NATIVIDAD BOYS RANCH		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	12-DEC-12	Findings:	66. MG/L
Chemical:	NITRATE (AS NO3)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	12-DEC-12	Findings:	15000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	22-MAY-14	Findings:	48. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-AUG-15	Findings:	490. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93906	107	2

Federal EPA Radon Zone for MONTEREY County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93906

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5’ Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5’ Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

ELEMENTARY SCHOOL #12 (CREEK BRI
EAST BORONDA ROAD/HEMINGWAY DRIVE
SALINAS, CA 93906

Inquiry Number:
April 28, 2017

EDR Site Report™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases. The report is divided into three sections:

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SECTION 1: FACILITY SUMMARY

FACILITY AREA	FACILITY 1 **ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPE** EAST BORONDA ROAD/HEMINGWAY DRIVE SALINAS, CA 93906 EDR ID #S109149598
WASTE MANAGEMENT Facility generates hazardous waste (RCRA)	NO
Facility treats, stores, or disposes of hazardous waste on-site (RCRA/TSDF)	NO
Facility has received Notices of Violations (RCRA/VIOL)	NO
Facility has been subject to RCRA administrative actions (RAATS)	NO
Facility has been subject to corrective actions (CORRACTS)	NO
Facility handles PCBs (PADS)	NO
Facility uses radioactive materials (MLTS)	NO
Facility is a FUSRAP Site	NO
Facility is a UXO Site	NO
Facility is a FUELS Site	NO
Facility is an DockHWC/ECHO Site	NO
Facility manages registered aboveground storage tanks (AST)	NO
Facility manages registered underground storage tanks (UST)	NO
Facility has reported leaking underground storage tank incidents (LUST)	NO
Facility has reported emergency releases to the soil (ERNS)	NO
Facility has reported hazardous material incidents to DOT (HMIRS)	NO
WASTE DISPOSAL Facility is a Superfund Site (NPL)	NO
Facility has a known or suspect abandoned, inactive or uncontrolled hazardous waste site (SEMS)	NO
Facility has a reported Superfund Lien on it (LIENS)	NO
Facility is listed as a state hazardous waste site (SHWS)	NO
Facility has disposed of solid waste on-site (SWF/LF)	NO
MULTIMEDIA Facility uses toxic chemicals and has notified EPA under SARA Title III, Section 313 (TRIS)	NO
Facility produces pesticides and has notified EPA under Section 7 of FIFRA (SSTS)	NO
Facility manufactures or imports toxic chemicals on the TSCA list (TSCA)	NO
Facility has inspections under FIFRA, TSCA or EPCRA (FTTS)	NO
Facility is listed in EPA's index system (FINDS)	NO
Facility is listed in other database records (OTHER)	**YES - p4**
POTENTIAL SUPERFUND LIABILITY Facility has a list of potentially responsible parties PRP	NO
TOTAL (YES)	1

SECTION 2: FACILITY DETAIL REPORTS

MULTIMEDIA

Facility is listed in other database records

DATABASE: Other Database Records (OTHER)

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY)
EAST BORONDA ROAD/HEMINGWAY DRIVE
SALINAS, CA 93906
EDR ID #S109149598

SCH:

Facility ID:	60000914
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	12
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Mellan Songco
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204219
Assembly:	30
Senate:	12
Special Program Status:	EPA - Target Site Investigation
Status:	No Further Action
Status Date:	11/04/2010
Restricted Use:	NO
Funding:	School District
Latitude:	36.71818
Longitude:	-121.6090
APN:	153-091-006
Past Use:	AGRICULTURAL - ROW CROPS, FUEL - VEHICLE STORAGE/ REFUELING, PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC:	Arsenic, Arsenic, Benzene, Chlordane, DDT, TPH-diesel, TPH-gas
Confirmed COC:	30001-NO, 30003-NO, 30004-NO, 30008-NO, No Contaminants found, 30024-NO, 30025-NO
Potential Description:	SOIL
Alias Name:	153-091-006
Alias Type:	APN
Alias Name:	201851
Alias Type:	Project Code (Site Code)
Alias Name:	204219
Alias Type:	Project Code (Site Code)
Alias Name:	60000914
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Correspondence
Completed Date:	09/10/2009
Comments:	Project Manager Change from Mike Hall to Mellan Songco
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	04/19/2010
Comments:	Observed the housekeeping activities and collecting confirmation soil samples by the AST.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	07/01/2008
Comments:	DTSC approved the Phase I with a PEA Required determination.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	09/22/2009
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	03/09/2010

Comments: DTSC approved the PEA Workplan

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC approved the PEA letter with a no further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 04/21/2010
Comments: The contract and the Start Work Order were amended to include a housekeeping activity as part of the scope of work within the TSI PEA project. Additional $7,593 was included in the contract. $42,593 is the new total amount for the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/17/2010
Comments: DTSC sent a CRU to the accounting unit to summarize costs associated with this project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Contract
Completed Date: 01/13/2010
Comments: The Standard Agreement Number 09-T9064 for the Creek Bridge Property was signed and finalized on 1/13/2010.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 01/21/2010
Comments: The Start Work Order for the Creek Bridge Property was signed and finalized on 1/21/2010.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 01/21/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Contract
Completed Date: 04/13/2010
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60000914
Status: No Further Action
Status Date: 11/04/2010
Site Code: 204219
Site Type: School Investigation
Site Type Detailed: School
Acres: 12
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: EPA - Target Site Investigation
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.71818
Longitude: -121.6090
APN: 153-091-006
Past Use: AGRICULTURAL - ROW CROPS, FUEL - VEHICLE STORAGE/ REFUELING,

PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC: Arsenic Benzene Chlordane DDT TPH-diesel TPH-gas
Confirmed COC: 30001-NO 30003-NO 30004-NO 30008-NO No Contaminants found 30024-NO 30025-NO
Potential Description: SOIL
Alias Name: 153-091-006
Alias Type: APN
Alias Name: 201851
Alias Type: Project Code (Site Code)
Alias Name: 204219
Alias Type: Project Code (Site Code)
Alias Name: 60000914
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 09/10/2009
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Completed Document Type: Other Report
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Comments: Not reported

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Completed Sub Area Name: Not reported
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Completed Date: 03/09/2010
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Completed Document Type: Preliminary Endangerment Assessment Report
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Completed Area Name: PROJECT WIDE
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Completed Area Name: PROJECT WIDE
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Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)

Completed Date:	01/21/2010
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	State/Federal Funded Site Contract
Completed Date:	04/13/2010
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

SECTION 3: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

CA ENVIROSTOR: EnviroStor Database
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

CREEKBRIDGE MIDDLE SCHOOL
EAST BORONDA ROAD/HEMMINGWAY ROAD
SALINAS, CA 93906

Inquiry Number:
April 28, 2017

EDR Site Report™

EDR®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SECTION 1: FACILITY SUMMARY

FACILITY AREA	**FACILITY 1** **CREEKBRIDGE MIDDLE SCHOOL** EAST BORONDA ROAD/HEMMINGWAY ROAD SALINAS, CA 93906 EDR ID #S109422408
WASTE MANAGEMENT Facility generates hazardous waste (RCRA)	NO
Facility treats, stores, or disposes of hazardous waste on-site (RCRA/TSDF)	NO
Facility has received Notices of Violations (RCRA/VIOL)	NO
Facility has been subject to RCRA administrative actions (RAATS)	NO
Facility has been subject to corrective actions (CORRACTS)	NO
Facility handles PCBs (PADS)	NO
Facility uses radioactive materials (MLTS)	NO
Facility is a FUSRAP Site	NO
Facility is a UXO Site	NO
Facility is a FUELS Site	NO
Facility is an DockHWC/ECHO Site	NO
Facility manages registered aboveground storage tanks (AST)	NO
Facility manages registered underground storage tanks (UST)	NO
Facility has reported leaking underground storage tank incidents (LUST)	NO
Facility has reported emergency releases to the soil (ERNS)	NO
Facility has reported hazardous material incidents to DOT (HMIRS)	NO
WASTE DISPOSAL Facility is a Superfund Site (NPL)	NO
Facility has a known or suspect abandoned, inactive or uncontrolled hazardous waste site (SEMS)	NO
Facility has a reported Superfund Lien on it (LIENS)	NO
Facility is listed as a state hazardous waste site (SHWS)	NO
Facility has disposed of solid waste on-site (SWF/LF)	NO
MULTIMEDIA Facility uses toxic chemicals and has notified EPA under SARA Title III, Section 313 (TRIS)	NO
Facility produces pesticides and has notified EPA under Section 7 of FIFRA (SSTS)	NO
Facility manufactures or imports toxic chemicals on the TSCA list (TSCA)	NO
Facility has inspections under FIFRA, TSCA or EPCRA (FTTS)	NO
Facility is listed in EPA's index system (FINDS)	NO
Facility is listed in other database records (OTHER)	**YES - p4**
POTENTIAL SUPERFUND LIABILITY Facility has a list of potentially responsible parties PRP	NO
TOTAL (YES)	1

SECTION 2: FACILITY DETAIL REPORTS

MULTIMEDIA

Facility is listed in other database records

DATABASE: Other Database Records (OTHER)

CREEKBRIDGE MIDDLE SCHOOL
EAST BORONDA ROAD/HEMMINGWAY ROAD
SALINAS, CA 93906
EDR ID #S109422408

SCH:

Facility ID:	60001058
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Jose Luevano
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204229
Assembly:	30
Senate:	12
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	06/02/2011
Restricted Use:	NO
Funding:	School District
Latitude:	36.7156
Longitude:	-121.6047
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS, FUEL HYDRANT PUMPING STATIONS
Potential COC:	Arsenic, Arsenic, Chlordane, DDD, DDE, DDT, Polychlorinated biphenyls (PCBs, Toxaphene, TPH-MOTOR OIL
Confirmed COC:	30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, No Contaminants found, 3002502-NO, 30018-NO, 30023-NO
Potential Description:	SOIL, WELL
Alias Name:	204229
Alias Type:	Project Code (Site Code)
Alias Name:	60001058
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inactive Status Letter
Completed Date:	03/24/2011
Comments:	DTSC issued an Inactive Status notice for inactivity associated with compliance with 30-day public review and comment period pursuant with California Education Code, Section 17213.1(a)(6)(A) or Section 17213.1(a)(6)(B).

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	03/26/2009
Comments:	Mailed fully Executed Environmental Oversight Agreement to District

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/02/2011
Comments:	CRU memo signed and approved 6/2/2011

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	02/18/2009
Comments:	DTSC received one paper copy (only) of a Phase I for the subject site. The Phase I was submitted for background information.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	09/02/2009
Comments:	DTSC conditionally approved the PEA workplan for implementation.

Request made not to composite arsenic samples per DTSC Ag-guidance, and clarification added for human health risk evaluation for arsenic.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement Application
Completed Date: 02/10/2009
Comments: Received application.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 10/21/2009
Comments: PEA field work completed on Oct 20 and 21, 2009.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/26/2011
Comments: DTSC approved the PEA assessment report with a no further action is required

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60001058
Status: No Further Action
Status Date: 06/02/2011
Site Code: 204229
Site Type: School Investigation
Site Type Detailed: School
Acres: 18
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Jose Luevano
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.7156
Longitude: -121.6047
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS, FUEL HYDRANT PUMPING STATIONS
Potential COC: Arsenic Chlordane DDD DDE DDT Polychlorinated biphenyls (PCBs Toxaphene TPH-MOTOR OIL
Confirmed COC: 30001-NO 30004-NO 30006-NO 30007-NO 30008-NO No Contaminants found 3002502-NO 30018-NO 30023-NO
Potential Description: SOIL, WELL
Alias Name: 204229
Alias Type: Project Code (Site Code)
Alias Name: 60001058
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 03/24/2011
Comments: DTSC issued an Inactive Status notice for inactivity associated with compliance with 30-day public review and comment period pursuant with California Education Code, Section 17213.1(a)(6)(A) or Section 17213.1(a)(6)(B).

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 03/26/2009
Comments: Mailed fully Executed Environmental Oversight Agreement to District

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo

Completed Date: 06/02/2011
Comments: CRU memo signed and approved 6/2/2011

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/18/2009
Comments: DTSC received one paper copy (only) of a Phase I for the subject site. The Phase I was submitted for background information.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 09/02/2009
Comments: DTSC conditionally approved the PEA workplan for implementation. Request made not to composite arsenic samples per DTSC Ag-guidance, and clarification added for human health risk evaluation for arsenic.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement Application
Completed Date: 02/10/2009
Comments: Received application.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 10/21/2009
Comments: PEA field work completed on Oct 20 and 21, 2009.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/26/2011
Comments: DTSC approved the PEA assessment report with a no further action is required

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SECTION 3: DATABASES AND UPDATE DATES

To maintain currency of the following federal, state and local databases, EDR contacts the appropriate government agency on a monthly or quarterly basis as required.

Elapsed ASTM days: Provides confirmation that this report meets or exceeds the 90-day updating requirement of the ASTM standard.

DATABASES FOUND IN THIS REPORT

CA SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

CA ENVIROSTOR: EnviroStor Database
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

PROPOSED ELEMENTARY SCHOOL #5 HA
NORTHEST OF EAST BORONDA/NATIVIDAD ROAD
SALINAS, CA 93906

Inquiry Number:
April 28, 2017

EDR Site Report™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

The EDR-Site Report™ is a comprehensive presentation of government filings on a facility identified in a search of federal, state and local environmental databases. The report is divided into three sections:

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SECTION 1: FACILITY SUMMARY

FACILITY AREA	**FACILITY 1** **PROPOSED ELEMENTARY SCHOOL #5 HARROD PR** NORTHEST OF EAST BORONDA/NATIVIDAD ROAD SALINAS, CA 93906 EDR ID #S110042438
WASTE MANAGEMENT Facility generates hazardous waste (RCRA)	NO
Facility treats, stores, or disposes of hazardous waste on-site (RCRA/TSDF)	NO
Facility has received Notices of Violations (RCRA/VIOL)	NO
Facility has been subject to RCRA administrative actions (RAATS)	NO
Facility has been subject to corrective actions (CORRACTS)	NO
Facility handles PCBs (PADS)	NO
Facility uses radioactive materials (MLTS)	NO
Facility is a FUSRAP Site	NO
Facility is a UXO Site	NO
Facility is a FUELS Site	NO
Facility is an DockHWC/ECHO Site	NO
Facility manages registered aboveground storage tanks (AST)	NO
Facility manages registered underground storage tanks (UST)	NO
Facility has reported leaking underground storage tank incidents (LUST)	NO
Facility has reported emergency releases to the soil (ERNS)	NO
Facility has reported hazardous material incidents to DOT (HMIRS)	NO
WASTE DISPOSAL Facility is a Superfund Site (NPL)	NO
Facility has a known or suspect abandoned, inactive or uncontrolled hazardous waste site (SEMS)	NO
Facility has a reported Superfund Lien on it (LIENS)	NO
Facility is listed as a state hazardous waste site (SHWS)	NO
Facility has disposed of solid waste on-site (SWF/LF)	NO
MULTIMEDIA Facility uses toxic chemicals and has notified EPA under SARA Title III, Section 313 (TRIS)	NO
Facility produces pesticides and has notified EPA under Section 7 of FIFRA (SSTS)	NO
Facility manufactures or imports toxic chemicals on the TSCA list (TSCA)	NO
Facility has inspections under FIFRA, TSCA or EPCRA (FTTS)	NO
Facility is listed in EPA's index system (FINDS)	NO
Facility is listed in other database records (OTHER)	**YES - p4**
POTENTIAL SUPERFUND LIABILITY Facility has a list of potentially responsible parties PRP	NO
TOTAL (YES)	1

SECTION 2: FACILITY DETAIL REPORTS

MULTIMEDIA

Facility is listed in other database records

DATABASE: Other Database Records (OTHER)

PROPOSED ELEMENTARY SCHOOL #5 HARROD PROPERTY
NORTHEST OF EAST BORONDA/NATIVIDAD ROAD
SALINAS, CA 93906
EDR ID #S110042438

SCH:

Facility ID:	60001179
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	12.27
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Jose Luevano
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	201852
Assembly:	30
Senate:	12
Special Program Status:	EPA - Target Site Investigation
Status:	No Further Action
Status Date:	08/03/2010
Restricted Use:	NO
Funding:	EPA Grant
Latitude:	36.71893
Longitude:	-121.6198
APN:	153-091-001
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic, Arsenic, Chlordane, DDD, DDE, DDT
Confirmed COC:	30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, No Contaminants found
Potential Description:	SOIL
Alias Name:	153-091-001
Alias Type:	APN
Alias Name:	201852
Alias Type:	Project Code (Site Code)
Alias Name:	60001179
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	08/03/2010
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Mitigated Neg. Dec. (MND)
Completed Date:	07/05/2011
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	State/Federal Funded Site Work Order
Completed Date:	01/21/2010
Comments:	Start work order approved by all parties.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	03/09/2010
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	01/25/2010
Comments:	DTSC received a copy of the Phase I ESA completed for a larger portion of the Harrod Property.
Completed Area Name:	PROJECT WIDE

Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 03/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC concurred with the recommendation of the TSI PEA that no further action is required for the site and approved the TSI PEA Report.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60001179
Status: No Further Action
Status Date: 08/03/2010
Site Code: 201852
Site Type: School Investigation
Site Type Detailed: School
Acres: 12.27
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Jose Luevano
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: EPA - Target Site Investigation
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Site Mgmt Req: NONE SPECIFIED
Funding: EPA Grant
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Confirmed COC: 30001-NO 30004-NO 30006-NO 30007-NO 30008-NO No Contaminants found
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Alias Name: 153-091-001
Alias Type: APN
Alias Name: 201852
Alias Type: Project Code (Site Code)
Alias Name: 60001179
Alias Type: Envirostor ID Number

Completed Info:
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Completed Sub Area Name: Not reported
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Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork
Completed Date:	03/03/2010
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	04/30/2010
Comments:	DTSC concurred with the recommendation of the TSI PEA that no further action is required for the site and approved the TSI PEA Report.
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

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DATABASES FOUND IN THIS REPORT

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Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

CA ENVIROSTOR: EnviroStor Database
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/31/2016
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/31/2017
Date of Next Scheduled Update: 05/08/2017

APPENDIX E

City of Salinas-CASP
21000 E. Boronda Rd
Salinas, CA 93906

Inquiry Number: 4381155.9
August 14, 2015

The EDR Aerial Photo Decade Package

EDR®

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:
Aerial Photography August 14, 2015

Target Property:
21000 E. Boronda Rd

Salinas, CA 93906

Year	***Scale***	***Details***	***Source***
1937	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1937 Photo Not Available - Image missing from collection Best Copy Available from original source	Laval
1956	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1956	Aero
1968	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1968	USGS
1971	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1971	Western
1981	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1981	USGS
1987	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1987	USGS
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP

Year	*Scale*	*Details*	*Source*
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP


INQUIRY #: 4381155.9
YEAR: 1956
= 1000'
N
EDR


INQUIRY #: 4381155.9
YEAR: 1968
= 1000'
N
EDR


INQUIRY #: 4381155.9
YEAR: 1971
= 1000'
N
EDR

INQUIRY #: 4381155.9

YEAR: 1981

= 1000'

N

EDR

INQUIRY #: 4381155.9

YEAR: 1987

= 1000'

N

EDR


INQUIRY #: 4381155.9
YEAR: 1998
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 1998
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 1998
= 500'
N
EDR

INQUIRY #: 4381155.9

YEAR: 1998

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 1998

= 500'

N


INQUIRY #: 4381155.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4381155.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4381155.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4381155.9

YEAR: 2005

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 2005

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 4381155.9

YEAR: 2009

= 500'

N

INQUIRY #: 4381155.9

YEAR: 2009

= 500'

N

EDR

INQUIRY #: 4381155.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4381155.9

YEAR: 2010

= 500'

N

EDR


INQUIRY #: 4381155.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 4381155.9
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4381155.9

YEAR: 2012

= 500'

N

INQUIRY #: 4381155.9

YEAR: 2012

= 500'

N

EDR

APPENDIX F

City of Salinas-CASP
21000 E. Boronda Rd
Salinas, CA 93906

Inquiry Number: 4381155.4
August 12, 2015

EDR Historical Topographic Map Report

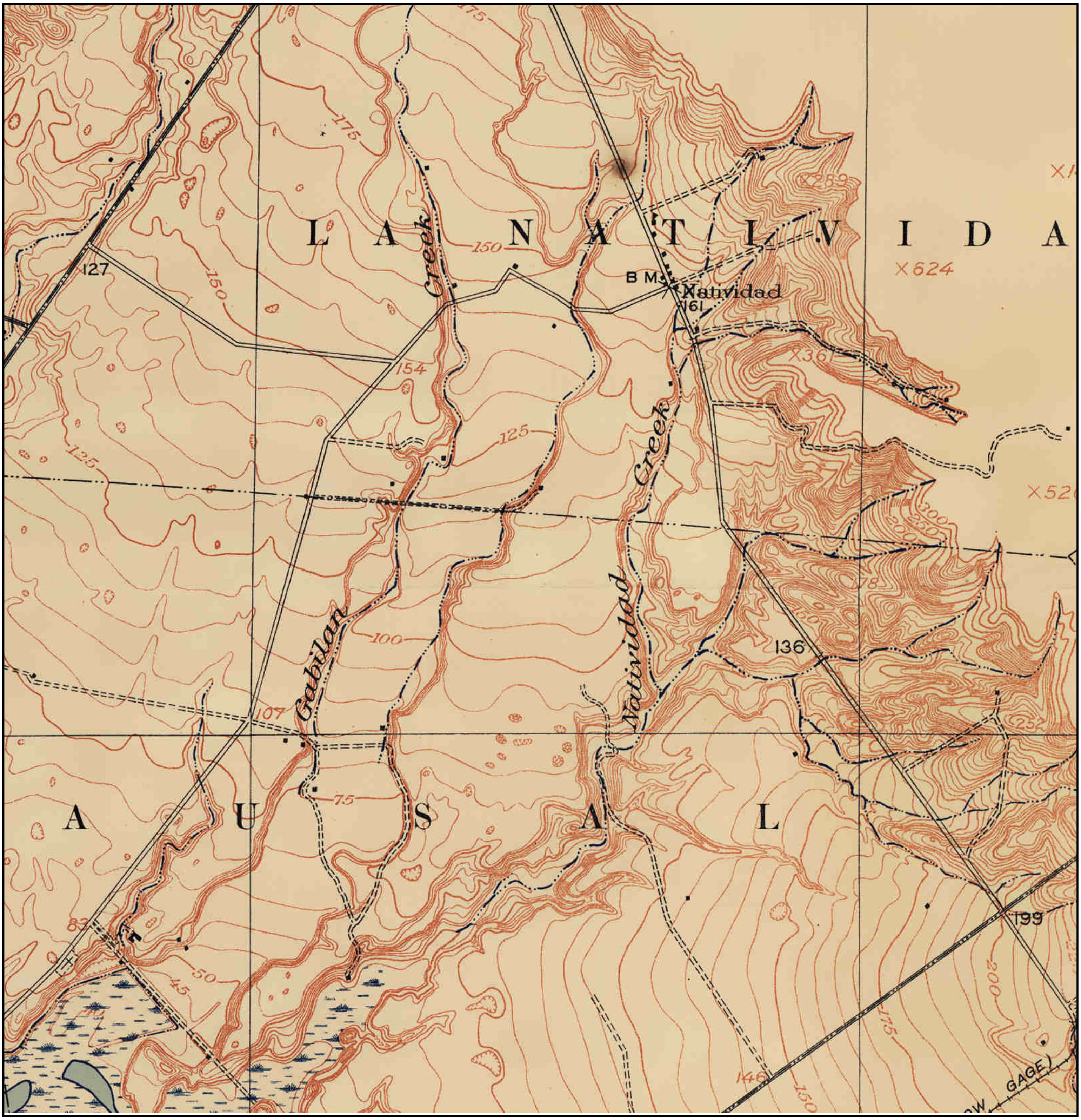
6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



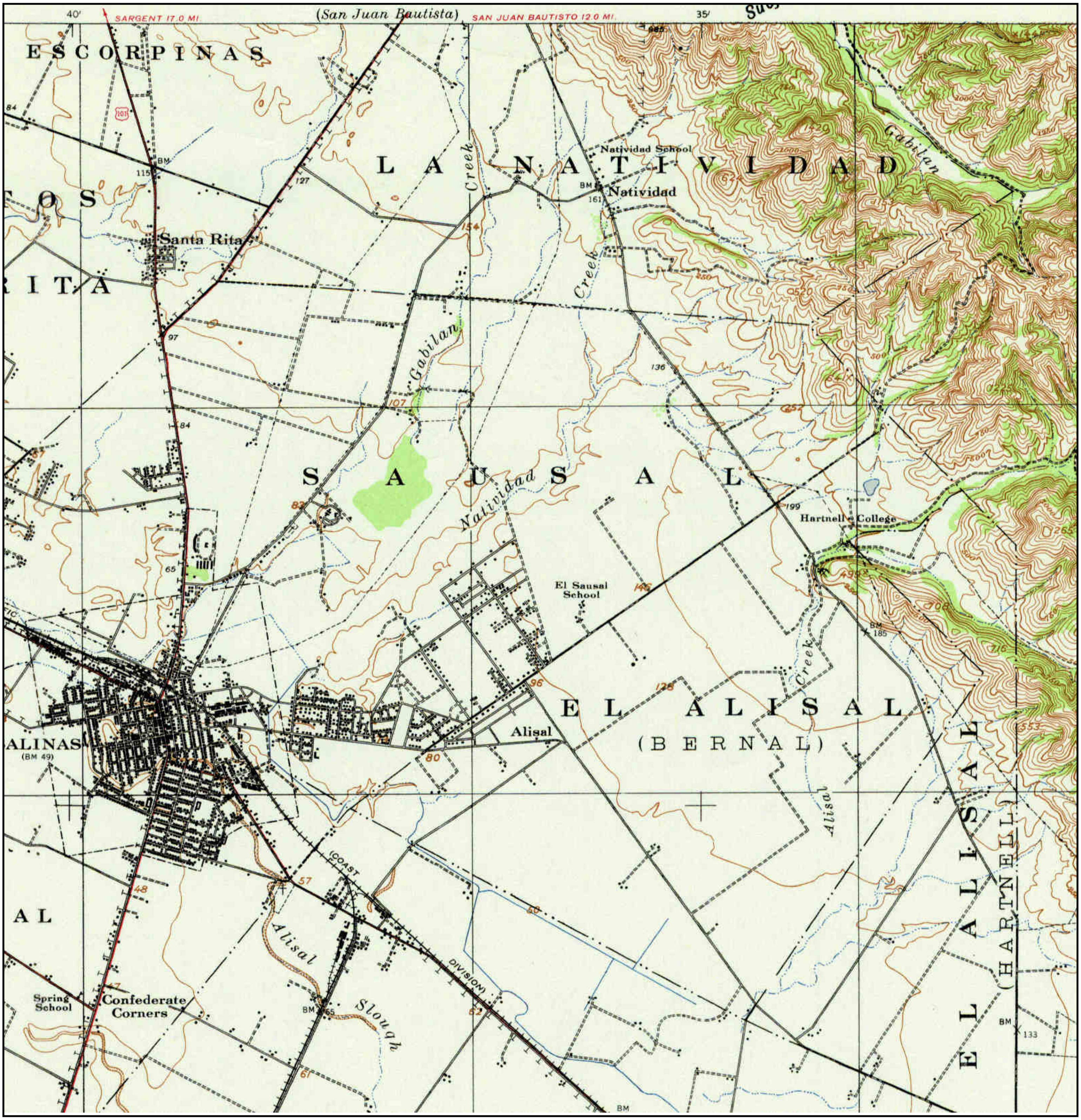
TARGET QUAD NAME: SALINAS VALLEY MAP YEAR: 1910 SERIES: 7.5 SCALE: 1:31680	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

N

Historical Topographic Map

N ↑	TARGET QUAD NAME: SALINAS MAP YEAR: 1912 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

Historical Topographic Map

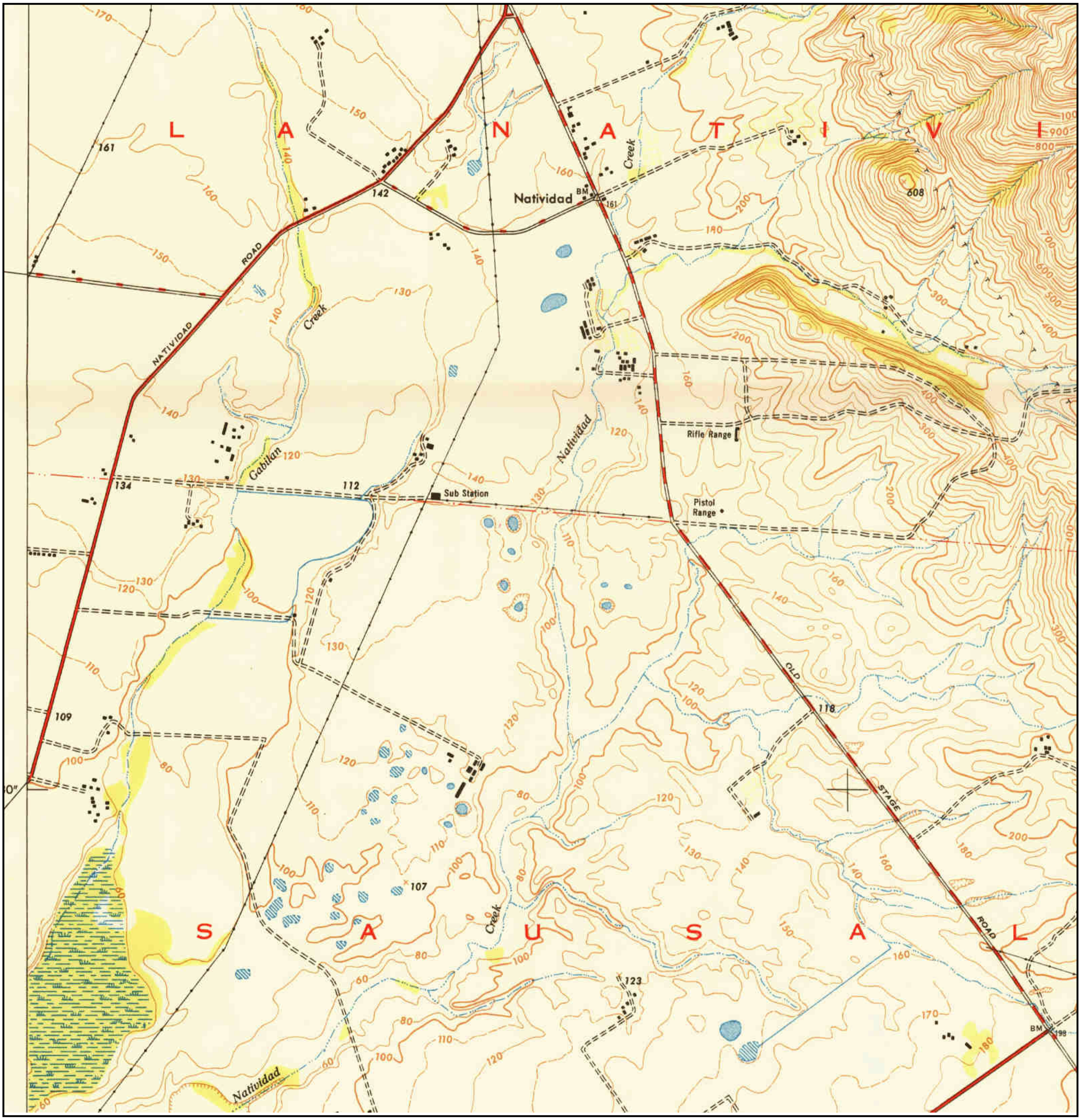


N	TARGET QUAD NAME: SALINAS MAP YEAR: 1940 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

Historical Topographic Map

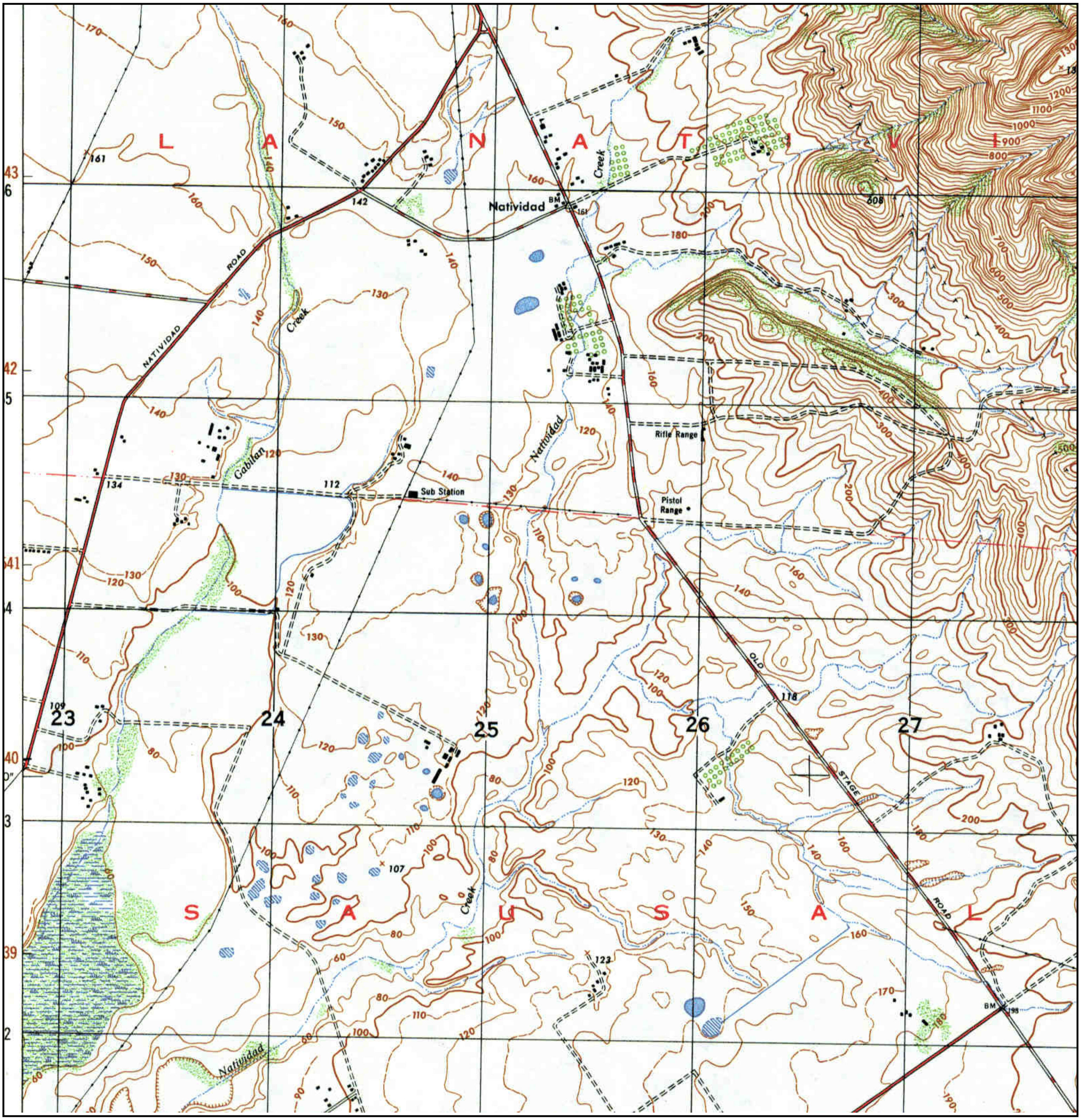
N	TARGET QUAD NAME: SALINAS MAP YEAR: 1947 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

Historical Topographic Map



N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

Historical Topographic Map



N

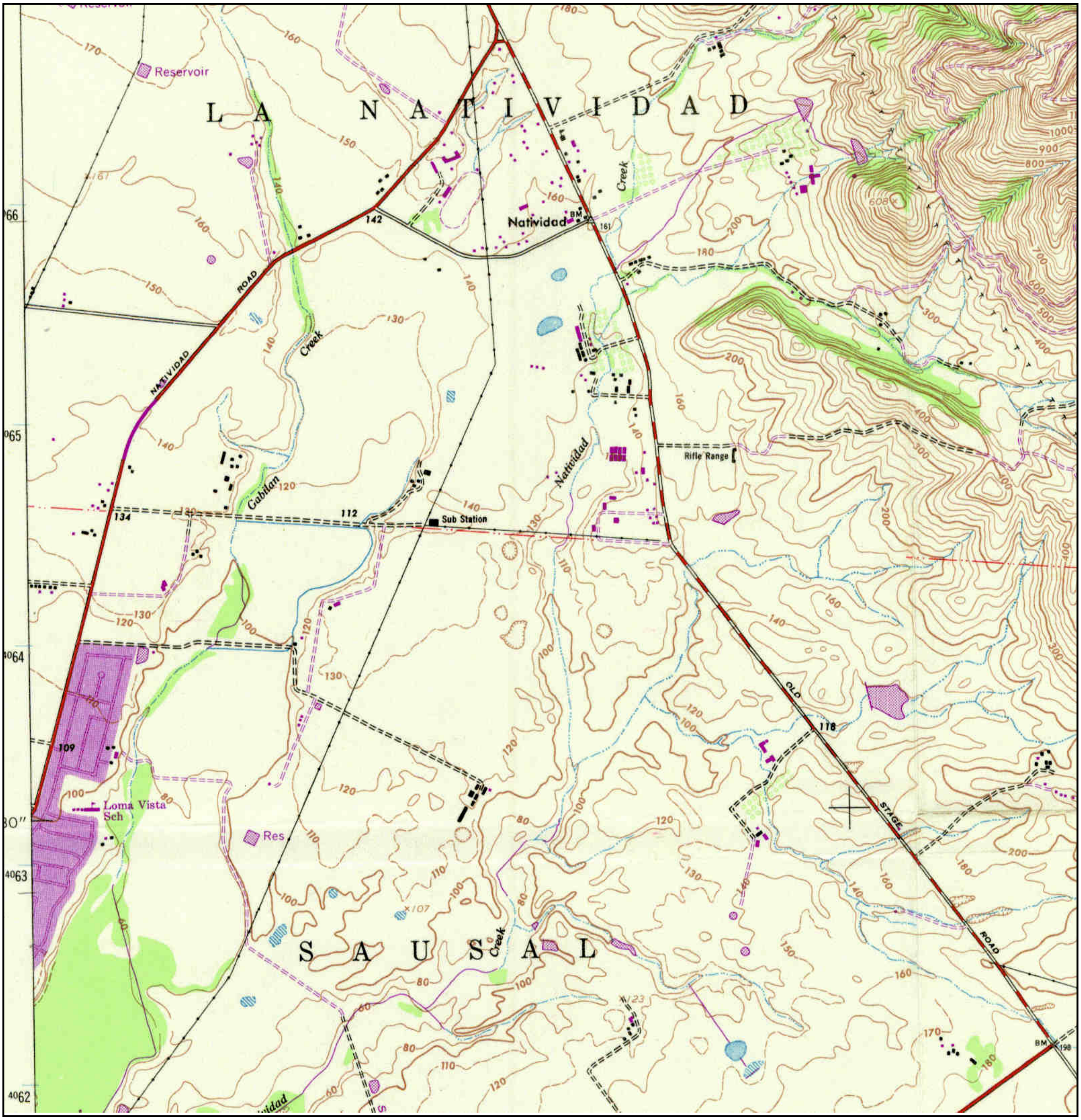
TARGET QUAD
NAME: NATIVIDAD
MAP YEAR: 1950

SERIES: 7.5
SCALE: 1:25000

SITE NAME: City of Salinas-CASP
ADDRESS: 21000 E. Boronda Rd
Salinas, CA 93906
LAT/LONG: 36.7176 / -121.6039

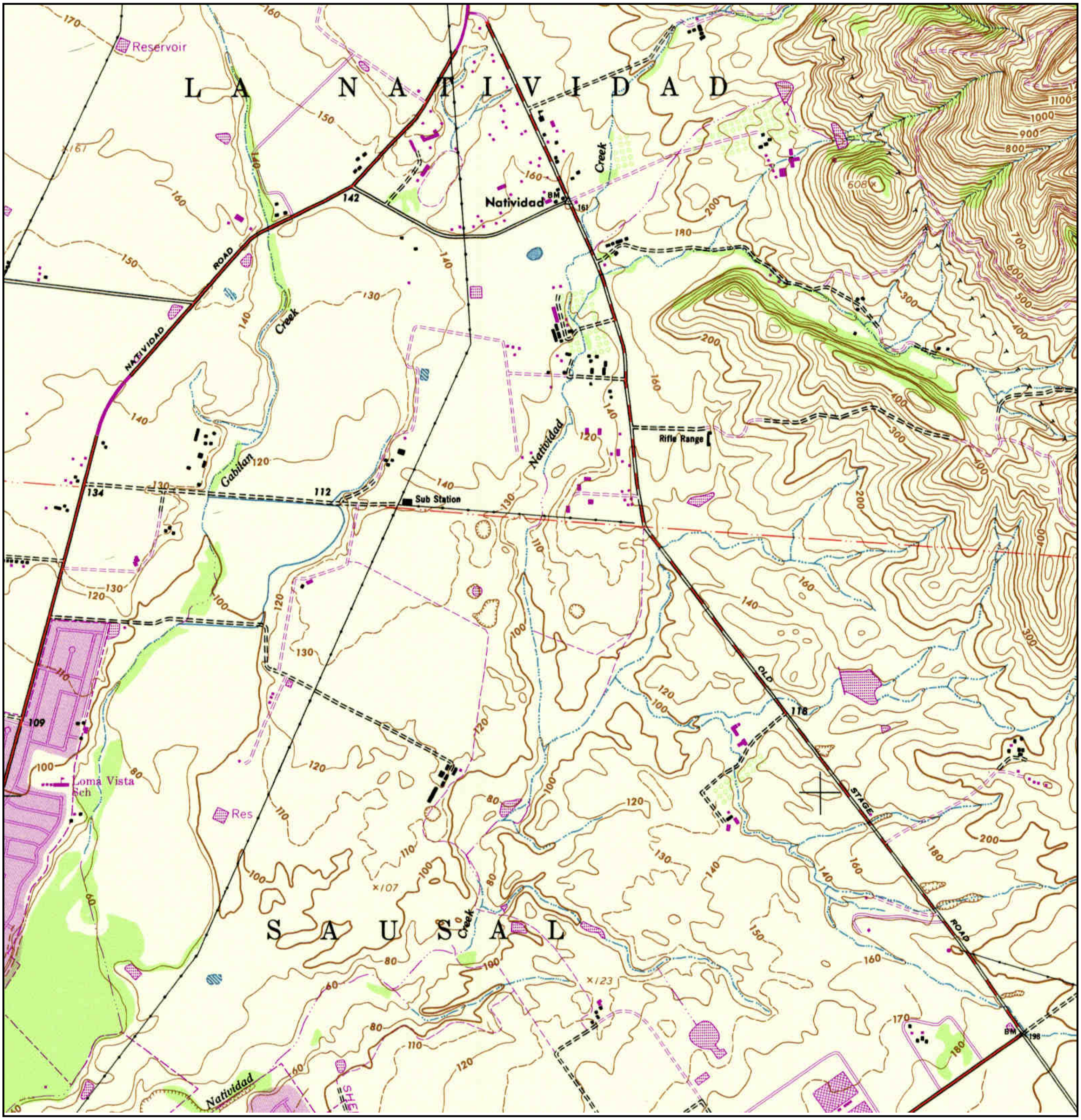
CLIENT: Geocon Consultants, Inc.
CONTACT: Kristeen Bennett
INQUIRY#: 4381155.4
RESEARCH DATE: 08/12/2015

Historical Topographic Map



N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1968 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

Historical Topographic Map



N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1984 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas-CASP ADDRESS: 21000 E. Boronda Rd Salinas, CA 93906 LAT/LONG: 36.7176 / -121.6039	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4381155.4 RESEARCH DATE: 08/12/2015

APPENDIX G

City of Salinas-CASP
21000 E. Boronda Rd
Salinas, CA 93906

Inquiry Number: 4381155.5
September 09, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

<u>SECTION</u>

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	***Target Street***	***Cross Street***	***Source***
2013	☐	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☐	☐	Cole Information Services
1995	☑	☐	Cole Information Services
1992	☐	☐	Cole Information Services
1987	☐	☐	Polk's City Directory
1981	☐	☐	Polk's City Directory
1976	☐	☐	Polk's City Directory
1971	☐	☐	Polk's City Directory
1966	☐	☐	Polk's City Directory
1960	☐	☐	Polk's City Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

21000 E. Boronda Rd
Salinas, CA 93906

E BORONDA RD

Year	*CD Image*	*Source*	
2013	-	Cole Information Services	Target and Adjoining not listed in Source
2008	pg A2	Cole Information Services	
2003	pg A3	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	pg A4	Cole Information Services	
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1987	-	Polk's City Directory	Street not listed in Source
1981	-	Polk's City Directory	Street not listed in Source
1976	-	Polk's City Directory	Street not listed in Source
1971	-	Polk's City Directory	Street not listed in Source
1966	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

E BORONDA RD 2008

21025 THRUST IV

Target Street	Cross Street	Source
✓	-	Cole Information Services

E BORONDA RD 2003

21025	THRUST IV INC
21621	MARY CUNHA
21673	GLORIA ZAMORA
	GRACY SERRATO
	INOCENCIA MARTINEZ
	TERESA SALAZAR

Target Street	Cross Street	Source
✓	-	Cole Information Services

E BORONDA RD 1995

21621	CUNHA, JOHNNY
21673	CHAVEZ, JOSE P
	YANEZ, F R

APPENDIX H

May 01, 2017

John Juhrend
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1701689

Client Reference : BORONDA CASP, S1049-03-01

Enclosed are the results for sample(s) received on April 22, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

for

Eddie Rodriguez
Laboratory Director

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS1	1701689-01	Soil	4/20/17 10:30	4/22/17 13:30
SS2	1701689-02	Soil	4/20/17 11:00	4/22/17 13:30
SS3	1701689-03	Soil	4/20/17 11:30	4/22/17 13:30
SS4	1701689-04	Soil	4/20/17 12:00	4/22/17 13:30
SS5	1701689-05	Soil	4/20/17 12:15	4/22/17 13:30
SS6	1701689-06	Soil	4/20/17 12:30	4/22/17 13:30
SS7	1701689-07	Soil	4/20/17 12:45	4/22/17 13:30
SS8	1701689-08	Soil	4/20/17 13:00	4/22/17 13:30
SS9	1701689-09	Soil	4/20/17 13:15	4/22/17 13:30
SS10	1701689-10	Soil	4/20/17 13:30	4/22/17 13:30
SS11	1701689-11	Soil	4/20/17 13:45	4/22/17 13:30
SS12	1701689-12	Soil	4/20/17 14:00	4/22/17 13:30
SS13	1701689-13	Soil	4/20/17 14:30	4/22/17 13:30
SS14	1701689-14	Soil	4/20/17 14:45	4/22/17 13:30
SS15	1701689-15	Soil	4/20/17 15:15	4/22/17 13:30
SS16	1701689-16	Soil	4/20/17 15:45	4/22/17 13:30
SS17	1701689-17	Soil	4/20/17 16:15	4/22/17 13:30
SS18	1701689-18	Soil	4/20/17 16:30	4/22/17 13:30

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS1
Lab ID: 1701689-01

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.3**	1.0	1	B7D0818	04/28/2017	04/28/17 12:58	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
4,4´-DDE	**4.4**	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
4,4´-DDT [2C]	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/27/17 16:18	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/27/17 16:18	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/27/17 16:18	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/27/17 16:18	
Surrogate: Decachlorobiphenyl	*74.3 %*	*27 - 123*		B7D0805	04/27/2017	*04/27/17 16:18*	
Surrogate: Tetrachloro-m-xylene	*82.5 %*	*26 - 108*		B7D0805	04/27/2017	*04/27/17 16:18*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS2
Lab ID: 1701689-02

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.0**	1.0	1	B7D0818	04/28/2017	04/28/17 13:01	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
4,4´-DDE	**73**	10	5	B7D0805	04/27/2017	05/01/17 14:46	
4,4´-DDT	**18**	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 13:42	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:42	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 13:42	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 13:42	
Surrogate: Decachlorobiphenyl	*63.5 %*	*27 - 123*		B7D0805	04/27/2017	*05/01/17 14:46*	
Surrogate: Decachlorobiphenyl	*37.4 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 13:42*	
Surrogate: Tetrachloro-m-xylene	*69.2 %*	*26 - 108*		B7D0805	04/27/2017	*05/01/17 14:46*	
Surrogate: Tetrachloro-m-xylene	*45.6 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 13:42*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS3

Lab ID: 1701689-03

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.9**	1.0	1	B7D0818	04/28/2017	04/28/17 13:02	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD [2C]		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
4,4´-DDE		**69**	10	5	B7D0805	04/27/2017	05/01/17 15:00	
4,4´-DDT		**13**	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Aldrin		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
alpha-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
alpha-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
beta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Chlordane		ND	8.5	1	B7D0805	04/27/2017	04/28/17 15:27	
delta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Dieldrin		**2.0**	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endosulfan I		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endosulfan II		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endosulfan sulfate		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endrin		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endrin aldehyde		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Endrin ketone		ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:27	
gamma-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
gamma-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Heptachlor		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Heptachlor epoxide		ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Methoxychlor		ND	5.0	1	B7D0805	04/27/2017	04/28/17 15:27	
Toxaphene		ND	50	1	B7D0805	04/27/2017	04/28/17 15:27	
Surrogate: Decachlorobiphenyl	*67.4 %*		*27 - 123*		B7D0805	04/27/2017	*05/01/17 15:00*	
Surrogate: Decachlorobiphenyl	*43.4 %*		*27 - 123*		B7D0805	04/27/2017	*04/28/17 15:27*	
Surrogate: Tetrachloro-m-xylene	*50.1 %*		*26 - 108*		B7D0805	04/27/2017	*04/28/17 15:27*	
Surrogate: Tetrachloro-m-xylene	*70.7 %*		*26 - 108*		B7D0805	04/27/2017	*05/01/17 15:00*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To : John Juhrend
Rancho Cordova , CA 95742	Reported : 05/01/2017

Client Sample ID SS4

Lab ID: 1701689-04

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3.2**	1.0	1	B7D0818	04/28/2017	04/28/17 13:03	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
4,4´-DDE [2C]	**5.3**	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
4,4´-DDT [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 13:21	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:21	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 13:21	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 13:21	
Surrogate: Decachlorobiphenyl	*51.2 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 13:21*	
Surrogate: Tetrachloro-m-xylene	*72.9 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 13:21*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS5

Lab ID: 1701689-05

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.9**	1.0	1	B7D0818	04/28/2017	04/28/17 13:05	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
4,4´-DDE [2C]	**27**	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
4,4´-DDT [2C]	**24**	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 13:31	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Dieldrin [2C]	**2.5**	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:31	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 13:31	
Toxaphene	**67**	50	1	B7D0805	04/27/2017	04/28/17 13:31	
Surrogate: Decachlorobiphenyl	*51.3 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 13:31*	
Surrogate: Tetrachloro-m-xylene	*77.2 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 13:31*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS6
Lab ID: 1701689-06

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.0**	1.0	1	B7D0818	04/28/2017	04/28/17 13:06	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
4,4´-DDE		**41**	4.0	2	B7D0805	04/27/2017	05/01/17 14:03	
4,4´-DDT [2C]		**11**	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Aldrin		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
alpha-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
alpha-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
beta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Chlordane		ND	8.5	1	B7D0805	04/27/2017	04/28/17 13:52	
delta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Dieldrin [2C]		**6.6**	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endosulfan I		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endosulfan II		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endosulfan sulfate		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endrin		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endrin aldehyde		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Endrin ketone		ND	2.0	1	B7D0805	04/27/2017	04/28/17 13:52	
gamma-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
gamma-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Heptachlor		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Heptachlor epoxide		ND	1.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Methoxychlor		ND	5.0	1	B7D0805	04/27/2017	04/28/17 13:52	
Toxaphene		**65**	50	1	B7D0805	04/27/2017	04/28/17 13:52	
Surrogate: Decachlorobiphenyl	*53.4 %*		*27 - 123*		B7D0805	04/27/2017	*04/28/17 13:52*	
Surrogate: Decachlorobiphenyl	*70.6 %*		*27 - 123*		B7D0805	04/27/2017	*05/01/17 14:03*	
Surrogate: Tetrachloro-m-xylene	*82.6 %*		*26 - 108*		B7D0805	04/27/2017	*05/01/17 14:03*	
Surrogate: Tetrachloro-m-xylene	*88.9 %*		*26 - 108*		B7D0805	04/27/2017	*04/28/17 13:52*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To :	John Juhrend
Rancho Cordova , CA 95742	Reported :	05/01/2017

Client Sample ID SS7
Lab ID: 1701689-07

Total Metals by ICP-AES EPA 6010B — **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.0**	1.0	1	B7D0818	04/28/2017	04/28/17 13:07	

Organochlorine Pesticides by EPA 8081 — **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
4,4´-DDE	**15**	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
4,4´-DDT	**3.8**	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:03	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Dieldrin [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:03	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:03	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 14:03	
Surrogate: Decachlorobiphenyl	*55.6 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:03*	
Surrogate: Tetrachloro-m-xylene	*68.7 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:03*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS8
Lab ID: 1701689-08

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.9**	1.0	1	B7D0818	04/28/2017	04/28/17 13:10	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
4,4´-DDE [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
4,4´-DDT	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:13	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:13	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:13	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 14:13	
Surrogate: Decachlorobiphenyl	*61.0 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:13*	
Surrogate: Tetrachloro-m-xylene	*88.5 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:13*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS9

Lab ID: 1701689-09

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.6**	1.0	1	B7D0818	04/28/2017	04/28/17 13:12	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
4,4´-DDE	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
4,4´-DDT	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
alpha-Chlordane [2C]	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:24	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:24	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:24	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 14:24	
Surrogate: Decachlorobiphenyl	*72.3 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:24*	
Surrogate: Tetrachloro-m-xylene	*75.0 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:24*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To :	John Juhrend
Rancho Cordova , CA 95742	Reported :	05/01/2017

Client Sample ID SS10
Lab ID: 1701689-10

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.3**	1.0	1	B7D0818	04/28/2017	04/28/17 13:13	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
4,4´-DDE	**69**	10	5	B7D0805	04/27/2017	05/01/17 14:14	
4,4´-DDT [2C]	**23**	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Chlordane [2C]	ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:34	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Dieldrin [2C]	**9.0**	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:34	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
gamma-Chlordane [2C]	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:34	
Toxaphene	**250**	50	1	B7D0805	04/27/2017	04/28/17 14:34	
Surrogate: Decachlorobiphenyl	*57.8 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:34*	
Surrogate: Decachlorobiphenyl	*77.6 %*	*27 - 123*		B7D0805	04/27/2017	*05/01/17 14:14*	
Surrogate: Tetrachloro-m-xylene	*87.3 %*	*26 - 108*		B7D0805	04/27/2017	*05/01/17 14:14*	
Surrogate: Tetrachloro-m-xylene	*86.1 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:34*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To :	John Juhrend
Rancho Cordova , CA 95742	Reported :	05/01/2017

Client Sample ID SS11

Lab ID: 1701689-11

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.7**	1.0	1	B7D0818	04/28/2017	04/28/17 13:14	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
4,4´-DDE		**4.2**	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
4,4´-DDT [2C]		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Aldrin		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
alpha-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
alpha-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
beta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Chlordane		ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:45	
delta-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Dieldrin		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endosulfan I		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endosulfan II		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endosulfan sulfate		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endrin		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endrin aldehyde		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Endrin ketone		ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:45	
gamma-BHC		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
gamma-Chlordane		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Heptachlor		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Heptachlor epoxide		ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Methoxychlor		ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:45	
Toxaphene		ND	50	1	B7D0805	04/27/2017	04/28/17 14:45	
Surrogate: Decachlorobiphenyl	*71.1 %*		*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:45*	
Surrogate: Tetrachloro-m-xylene	*85.6 %*		*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:45*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS12
Lab ID: 1701689-12

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3.4**	1.0	1	B7D0818	04/28/2017	04/28/17 13:15	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
4,4´-DDE [2C]	**19**	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
4,4´-DDT	**6.3**	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 14:55	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 14:55	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
gamma-Chlordane [2C]	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 14:55	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 14:55	
Surrogate: Decachlorobiphenyl	*40.6 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 14:55*	
Surrogate: Tetrachloro-m-xylene	*52.6 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 14:55*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS13

Lab ID: 1701689-13

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.8**	1.0	1	B7D0818	04/28/2017	04/28/17 13:16	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
4,4´-DDE [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
4,4´-DDT	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 15:06	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Dieldrin [2C]	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:06	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 15:06	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 15:06	
Surrogate: Decachlorobiphenyl	*83.2 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 15:06*	
Surrogate: Tetrachloro-m-xylene	*91.0 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 15:06*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS14

Lab ID: 1701689-14

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1.7**	1.0	1	B7D0818	04/28/2017	04/28/17 13:17	

Organochlorine Pesticides by EPA 8081 **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
4,4´-DDE	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
4,4´-DDT	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Aldrin	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
alpha-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
alpha-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
beta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Chlordane	ND	8.5	1	B7D0805	04/27/2017	04/28/17 15:16	
delta-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Dieldrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endosulfan I	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endosulfan II	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endosulfan sulfate	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endrin	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endrin aldehyde	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Endrin ketone	ND	2.0	1	B7D0805	04/27/2017	04/28/17 15:16	
gamma-BHC	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
gamma-Chlordane	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Heptachlor	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Heptachlor epoxide	ND	1.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Methoxychlor	ND	5.0	1	B7D0805	04/27/2017	04/28/17 15:16	
Toxaphene	ND	50	1	B7D0805	04/27/2017	04/28/17 15:16	
Surrogate: Decachlorobiphenyl	*43.6 %*	*27 - 123*		B7D0805	04/27/2017	*04/28/17 15:16*	
Surrogate: Tetrachloro-m-xylene	*55.4 %*	*26 - 108*		B7D0805	04/27/2017	*04/28/17 15:16*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To :	John Juhrend
Rancho Cordova , CA 95742	Reported :	05/01/2017

Client Sample ID SS15
Lab ID: 1701689-15

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.0**	1.0	1	B7D0818	04/28/2017	04/28/17 13:18	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
4,4´-DDE	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
4,4´-DDT	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Aldrin	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
alpha-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
alpha-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
beta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Chlordane	ND	8.5	1	B7D0811	04/27/2017	05/01/17 13:00	
delta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Dieldrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endosulfan I	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endosulfan II	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endosulfan sulfate	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endrin aldehyde	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Endrin ketone	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:00	
gamma-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
gamma-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Heptachlor	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Heptachlor epoxide	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Methoxychlor	ND	5.0	1	B7D0811	04/27/2017	05/01/17 13:00	
Toxaphene	ND	50	1	B7D0811	04/27/2017	05/01/17 13:00	
Surrogate: Decachlorobiphenyl	*64.9 %*	*27 - 123*		B7D0811	04/27/2017	*05/01/17 13:00*	
Surrogate: Tetrachloro-m-xylene	*58.1 %*	*26 - 108*		B7D0811	04/27/2017	*05/01/17 13:00*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS16
Lab ID: 1701689-16

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.5**	1.0	1	B7D0818	04/28/2017	04/28/17 13:19	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
4,4´-DDE	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
4,4´-DDT	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Aldrin	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
alpha-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
alpha-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
beta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Chlordane	ND	8.5	1	B7D0811	04/27/2017	05/01/17 13:11	
delta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Dieldrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endosulfan I	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endosulfan II	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endosulfan sulfate	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endrin aldehyde	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Endrin ketone	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:11	
gamma-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
gamma-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Heptachlor	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Heptachlor epoxide	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Methoxychlor	ND	5.0	1	B7D0811	04/27/2017	05/01/17 13:11	
Toxaphene	ND	50	1	B7D0811	04/27/2017	05/01/17 13:11	
Surrogate: Decachlorobiphenyl	*81.6 %*	*27 - 123*		B7D0811	04/27/2017	*05/01/17 13:11*	
Surrogate: Tetrachloro-m-xylene	*63.4 %*	*26 - 108*		B7D0811	04/27/2017	*05/01/17 13:11*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Client Sample ID SS17

Lab ID: 1701689-17

Total Metals by ICP-AES EPA 6010B — **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.6**	1.0	1	B7D0818	04/28/2017	04/28/17 13:20	

Organochlorine Pesticides by EPA 8081 — **Analyst: RL/**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
4,4´-DDE	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
4,4´-DDT	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Aldrin	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
alpha-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
alpha-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
beta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Chlordane	ND	8.5	1	B7D0811	04/27/2017	05/01/17 13:21	
delta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Dieldrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endosulfan I	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endosulfan II	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endosulfan sulfate	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endrin aldehyde	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Endrin ketone	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:21	
gamma-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
gamma-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Heptachlor	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Heptachlor epoxide	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Methoxychlor	ND	5.0	1	B7D0811	04/27/2017	05/01/17 13:21	
Toxaphene	ND	50	1	B7D0811	04/27/2017	05/01/17 13:21	
Surrogate: Decachlorobiphenyl	*82.9 %*	*27 - 123*		B7D0811	04/27/2017	*05/01/17 13:21*	
Surrogate: Tetrachloro-m-xylene	*70.9 %*	*26 - 108*		B7D0811	04/27/2017	*05/01/17 13:21*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To : John Juhrend
Rancho Cordova , CA 95742	Reported : 05/01/2017

Client Sample ID SS18
Lab ID: 1701689-18

Total Metals by ICP-AES EPA 6010B

Analyst: GO

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2.3**	1.0	1	B7D0818	04/28/2017	04/28/17 13:24	

Organochlorine Pesticides by EPA 8081

Analyst: RL/

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
4,4´-DDE	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
4,4´-DDT	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Aldrin	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
alpha-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
alpha-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
beta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Chlordane	ND	8.5	1	B7D0811	04/27/2017	05/01/17 13:32	
delta-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Dieldrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endosulfan I	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endosulfan II	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endosulfan sulfate	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endrin	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endrin aldehyde	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Endrin ketone	ND	2.0	1	B7D0811	04/27/2017	05/01/17 13:32	
gamma-BHC	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
gamma-Chlordane	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Heptachlor	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Heptachlor epoxide	ND	1.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Methoxychlor	ND	5.0	1	B7D0811	04/27/2017	05/01/17 13:32	
Toxaphene	ND	50	1	B7D0811	04/27/2017	05/01/17 13:32	
Surrogate: Decachlorobiphenyl	*64.5 %*	*27 - 123*		B7D0811	04/27/2017	*05/01/17 13:32*	
Surrogate: Tetrachloro-m-xylene	*62.5 %*	*26 - 108*		B7D0811	04/27/2017	*05/01/17 13:32*	

Certificate of Analysis

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QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0818 - EPA 3050B_S										
Blank (B7D0818-BLK1)					Prepared: 4/28/2017 Analyzed: 4/28/2017					
Arsenic	ND	1.0	0.70							
LCS (B7D0818-BS1)					Prepared: 4/28/2017 Analyzed: 4/28/2017					
Arsenic	43.4040	1.0	0.70	50.0000		86.8	80 - 120			
Duplicate (B7D0818-DUP1)			**Source: 1701566-21RE1**		Prepared: 4/28/2017 Analyzed: 4/28/2017					
Arsenic	3.94504	1.0	0.70		2.68416			38.0	20	R
Matrix Spike (B7D0818-MS1)			**Source: 1701689-01**		Prepared: 4/28/2017 Analyzed: 4/28/2017					
Arsenic	92.0948	1.0	0.70	125.000	2.29979	71.8	59 - 103			
Matrix Spike Dup (B7D0818-MSD1)			**Source: 1701689-01**		Prepared: 4/28/2017 Analyzed: 4/28/2017					
Arsenic	94.9755	1.0	0.70	125.000	2.29979	74.1	59 - 103	3.08	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B7D0805 - GCSEMI_PCB/PEST_S

Blank (B7D0805-BLK1) Prepared: 4/27/2017 Analyzed: 4/27/2017

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
4,4´-DDD	ND	2.0	0.22							
4,4´-DDD [2C]	ND	2.0	0.22							
4,4´-DDE	ND	2.0	0.20							
4,4´-DDE [2C]	ND	2.0	0.20							
4,4´-DDT	ND	2.0	0.13							
4,4´-DDT [2C]	ND	2.0	0.13							
Aldrin	ND	1.0	0.27							
Aldrin [2C]	ND	1.0	0.27							
alpha-BHC	ND	1.0	0.20							
alpha-BHC [2C]	ND	1.0	0.20							
alpha-Chlordane	ND	1.0	0.21							
alpha-Chlordane [2C]	ND	1.0	0.21							
beta-BHC	ND	1.0	0.23							
beta-BHC [2C]	ND	1.0	0.23							
Chlordane	ND	8.5	0.90							
Chlordane [2C]	ND	8.5	0.90							
delta-BHC	ND	1.0	0.21							
delta-BHC [2C]	ND	1.0	0.21							
Dieldrin	ND	2.0	0.25							
Dieldrin [2C]	ND	2.0	0.25							
Endosulfan I	ND	1.0	0.21							
Endosulfan I [2C]	ND	1.0	0.21							
Endosulfan II	ND	2.0	0.22							
Endosulfan II [2C]	ND	2.0	0.22							
Endosulfan sulfate	ND	2.0	0.21							
Endosulfan Sulfate [2C]	ND	2.0	0.21							
Endrin	ND	2.0	0.23							
Endrin [2C]	ND	2.0	0.23							
Endrin aldehyde	ND	2.0	0.28							
Endrin aldehyde [2C]	ND	2.0	0.28							
Endrin ketone	ND	2.0	0.20							
Endrin ketone [2C]	ND	2.0	0.20							
gamma-BHC	ND	1.0	0.20							
gamma-BHC [2C]	ND	1.0	0.20							
gamma-Chlordane	ND	1.0	0.23							
gamma-Chlordane [2C]	ND	1.0	0.23							
Heptachlor	ND	1.0	0.19							
Heptachlor [2C]	ND	1.0	0.19							
Heptachlor epoxide	ND	1.0	0.20							
Heptachlor epoxide [2C]	ND	1.0	0.20							
Methoxychlor	ND	5.0	0.18							

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0805 - GCSEMI_PCB/PEST_S (continued)										
Blank (B7D0805-BLK1) - Continued						Prepared: 4/27/2017 Analyzed: 4/27/2017				
Methoxychlor [2C]	ND	5.0	0.18							
Toxaphene	ND	50	8.2							
Toxaphene [2C]	ND	50	8.2							
Surrogate: Decachlorobiphenyl	*22.52*			*16.6667*		*135*	*27 - 123*			S1
Surrogate: Decachlorobiphenyl [	*22.88*			*16.6667*		*137*	*27 - 123*			S1
Surrogate: Tetrachloro-m-xylene	*31.54*			*16.6667*		*189*	*26 - 108*			S1
Surrogate: Tetrachloro-m-xylene	*32.51*			*16.6667*		*195*	*26 - 108*			S1
LCS (B7D0805-BS1)						Prepared: 4/27/2017 Analyzed: 4/27/2017				
4,4´-DDD	16.5993	2.0	0.22	16.6667		99.6	53 - 125			
4,4´-DDD [2C]	16.6970	2.0	0.22	16.6667		100	53 - 125			
4,4´-DDE	15.9418	2.0	0.20	16.6667		95.7	54 - 113			
4,4´-DDE [2C]	15.7925	2.0	0.20	16.6667		94.8	54 - 113			
4,4´-DDT	13.7323	2.0	0.13	16.6667		82.4	25 - 127			
4,4´-DDT [2C]	13.7250	2.0	0.13	16.6667		82.3	25 - 127			
Aldrin	15.1892	1.0	0.27	16.6667		91.1	59 - 107			
Aldrin [2C]	15.7300	1.0	0.27	16.6667		94.4	59 - 107			
alpha-BHC	15.8282	1.0	0.20	16.6667		95.0	59 - 104			
alpha-BHC [2C]	16.5922	1.0	0.20	16.6667		99.6	59 - 104			
alpha-Chlordane	15.5683	1.0	0.21	16.6667		93.4	54 - 110			
alpha-Chlordane [2C]	15.8010	1.0	0.21	16.6667		94.8	54 - 110			
beta-BHC	16.0633	1.0	0.23	16.6667		96.4	57 - 103			
beta-BHC [2C]	15.8402	1.0	0.23	16.6667		95.0	57 - 103			
delta-BHC	14.1828	1.0	0.21	16.6667		85.1	16 - 120			
delta-BHC [2C]	15.4085	1.0	0.21	16.6667		92.5	16 - 120			
Dieldrin	15.0673	2.0	0.25	16.6667		90.4	61 - 109			
Dieldrin [2C]	15.1118	2.0	0.25	16.6667		90.7	61 - 109			
Endosulfan I	14.8665	1.0	0.21	16.6667		89.2	60 - 106			
Endosulfan I [2C]	15.0515	1.0	0.21	16.6667		90.3	60 - 106			
Endosulfan II	15.4080	2.0	0.22	16.6667		92.4	59 - 108			
Endosulfan II [2C]	15.3693	2.0	0.22	16.6667		92.2	59 - 108			
Endosulfan sulfate	14.0547	2.0	0.21	16.6667		84.3	54 - 110			
Endosulfan Sulfate [2C]	14.5010	2.0	0.21	16.6667		87.0	54 - 110			
Endrin	17.0205	2.0	0.23	16.6667		102	63 - 112			
Endrin [2C]	17.0882	2.0	0.23	16.6667		103	63 - 112			
Endrin aldehyde	14.9035	2.0	0.28	16.6667		89.4	64 - 119			
Endrin aldehyde [2C]	15.0762	2.0	0.28	16.6667		90.5	64 - 119			
Endrin ketone	12.9488	2.0	0.20	16.6667		77.7	54 - 115			
Endrin ketone [2C]	13.1717	2.0	0.20	16.6667		79.0	54 - 115			
gamma-BHC	15.7170	1.0	0.20	16.6667		94.3	60 - 107			
gamma-BHC [2C]	16.2373	1.0	0.20	16.6667		97.4	60 - 107			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0805 - GCSEMI_PCB/PEST_S (continued)										
LCS (B7D0805-BS1) - Continued					Prepared: 4/27/2017 Analyzed: 4/27/2017					
gamma-Chlordane	15.1000	1.0	0.23	16.6667		90.6	57 - 106			
gamma-Chlordane [2C]	15.5632	1.0	0.23	16.6667		93.4	57 - 106			
Heptachlor	15.5812	1.0	0.19	16.6667		93.5	54 - 114			
Heptachlor [2C]	16.2180	1.0	0.19	16.6667		97.3	54 - 114			
Heptachlor epoxide	14.6122	1.0	0.20	16.6667		87.7	61 - 106			
Heptachlor epoxide [2C]	15.2215	1.0	0.20	16.6667		91.3	61 - 106			
Methoxychlor	13.8217	5.0	0.18	16.6667		82.9	18 - 138			
Methoxychlor [2C]	14.5693	5.0	0.18	16.6667		87.4	18 - 138			
Surrogate: Decachlorobiphenyl	*12.00*			*16.6667*		*72.0*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*12.32*			*16.6667*		*73.9*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*13.46*			*16.6667*		*80.8*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*16.27*			*16.6667*		*97.6*	*26 - 108*			
Matrix Spike (B7D0805-MS1)			**Source: 1701689-01**		Prepared: 4/27/2017 Analyzed: 4/27/2017					
4,4´-DDD	8.33233	2.0	0.22	16.6667	ND	50.0	25 - 141			
4,4´-DDD [2C]	8.34083	2.0	0.22	16.6667	ND	50.0	25 - 141			
4,4´-DDE	13.5868	2.0	0.20	16.6667	4.42700	55.0	22 - 141			
4,4´-DDE [2C]	12.9728	2.0	0.20	16.6667	4.02367	53.7	22 - 141			
4,4´-DDT	9.49483	2.0	0.13	16.6667	0.926500	51.4	15 - 136			
4,4´-DDT [2C]	9.59533	2.0	0.13	16.6667	0.946333	51.9	15 - 136			
Aldrin	8.53383	1.0	0.27	16.6667	ND	51.2	33 - 118			
Aldrin [2C]	8.90750	1.0	0.27	16.6667	ND	53.4	33 - 118			
alpha-BHC	8.31417	1.0	0.20	16.6667	ND	49.9	30 - 116			
alpha-BHC [2C]	8.49200	1.0	0.20	16.6667	ND	51.0	30 - 116			
alpha-Chlordane	8.37183	1.0	0.21	16.6667	ND	50.2	30 - 123			
alpha-Chlordane [2C]	8.16533	1.0	0.21	16.6667	ND	49.0	30 - 123			
beta-BHC	6.68533	1.0	0.23	16.6667	ND	40.1	24 - 121			
beta-BHC [2C]	6.63300	1.0	0.23	16.6667	ND	39.8	24 - 121			
delta-BHC	4.27183	1.0	0.21	16.6667	ND	25.6	7 - 120			
delta-BHC [2C]	4.57333	1.0	0.21	16.6667	ND	27.4	7 - 120			
Dieldrin	5.50600	2.0	0.25	16.6667	ND	33.0	25 - 136			
Dieldrin [2C]	5.39767	2.0	0.25	16.6667	ND	32.4	25 - 136			
Endosulfan I	6.35033	1.0	0.21	16.6667	ND	38.1	18 - 134			
Endosulfan I [2C]	6.24933	1.0	0.21	16.6667	ND	37.5	18 - 134			
Endosulfan II	2.45683	2.0	0.22	16.6667	ND	14.7	28 - 128			M2
Endosulfan II [2C]	2.42000	2.0	0.22	16.6667	ND	14.5	28 - 128			M2
Endosulfan sulfate	1.68950	2.0	0.21	16.6667	ND	10.1	5 - 145			
Endosulfan Sulfate [2C]	1.80350	2.0	0.21	16.6667	ND	10.8	5 - 145			
Endrin	6.15267	2.0	0.23	16.6667	ND	36.9	26 - 142			
Endrin [2C]	6.09750	2.0	0.23	16.6667	ND	36.6	26 - 142			
Endrin aldehyde	1.90500	2.0	0.28	16.6667	ND	11.4	8 - 146			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0805 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike (B7D0805-MS1) - Continued			**Source: 1701689-01**		Prepared: 4/27/2017 Analyzed: 4/27/2017					
Endrin aldehyde [2C]	1.80450	2.0	0.28	16.6667	ND	10.8	8 - 146			
Endrin ketone	1.93867	2.0	0.20	16.6667	ND	11.6	16 - 139			M2
Endrin ketone [2C]	1.86317	2.0	0.20	16.6667	ND	11.2	16 - 139			M2
gamma-BHC	7.58617	1.0	0.20	16.6667	ND	45.5	30 - 122			
gamma-BHC [2C]	7.64550	1.0	0.20	16.6667	ND	45.9	30 - 122			
gamma-Chlordane	8.46317	1.0	0.23	16.6667	ND	50.8	18 - 132			
gamma-Chlordane [2C]	7.79833	1.0	0.23	16.6667	ND	46.8	18 - 132			
Heptachlor	8.87300	1.0	0.19	16.6667	ND	53.2	34 - 122			
Heptachlor [2C]	9.09083	1.0	0.19	16.6667	ND	54.5	34 - 122			
Heptachlor epoxide	6.55633	1.0	0.20	16.6667	ND	39.3	21 - 135			
Heptachlor epoxide [2C]	6.58650	1.0	0.20	16.6667	ND	39.5	21 - 135			
Methoxychlor	4.37000	5.0	0.18	16.6667	ND	26.2	8 - 162			
Methoxychlor [2C]	4.43900	5.0	0.18	16.6667	ND	26.6	8 - 162			
Surrogate: Decachlorobiphenyl	*7.196*			*16.6667*		*43.2*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*7.363*			*16.6667*		*44.2*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*8.262*			*16.6667*		*49.6*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*11.06*			*16.6667*		*66.4*	*26 - 108*			
Matrix Spike Dup (B7D0805-MSD1)			**Source: 1701689-01**		Prepared: 4/27/2017 Analyzed: 4/27/2017					
4,4´-DDD	6.76267	2.0	0.22	16.6667	ND	40.6	25 - 141	20.8	20	R3
4,4´-DDD [2C]	6.82167	2.0	0.22	16.6667	ND	40.9	25 - 141	20.0	20	R3
4,4´-DDE	12.9953	2.0	0.20	16.6667	4.42700	51.4	22 - 141	4.45	20	
4,4´-DDE [2C]	12.9273	2.0	0.20	16.6667	4.02367	53.4	22 - 141	0.351	20	
4,4´-DDT	7.58567	2.0	0.13	16.6667	0.926500	40.0	15 - 136	22.4	20	R3
4,4´-DDT [2C]	7.83917	2.0	0.13	16.6667	0.946333	41.4	15 - 136	20.1	20	R3
Aldrin	8.36433	1.0	0.27	16.6667	ND	50.2	33 - 118	2.01	20	
Aldrin [2C]	8.52533	1.0	0.27	16.6667	ND	51.2	33 - 118	4.38	20	
alpha-BHC	6.74283	1.0	0.20	16.6667	ND	40.5	30 - 116	20.9	20	R3
alpha-BHC [2C]	6.97267	1.0	0.20	16.6667	ND	41.8	30 - 116	19.6	20	
alpha-Chlordane	7.10817	1.0	0.21	16.6667	ND	42.6	30 - 123	16.3	20	
alpha-Chlordane [2C]	7.12267	1.0	0.21	16.6667	ND	42.7	30 - 123	13.6	20	
beta-BHC	4.17183	1.0	0.23	16.6667	ND	25.0	24 - 121	46.3	20	R3
beta-BHC [2C]	4.06783	1.0	0.23	16.6667	ND	24.4	24 - 121	47.9	20	R3
delta-BHC	1.51150	1.0	0.21	16.6667	ND	9.07	7 - 120	95.5	20	R3
delta-BHC [2C]	1.61850	1.0	0.21	16.6667	ND	9.71	7 - 120	95.4	20	R3
Dieldrin	2.66250	2.0	0.25	16.6667	ND	16.0	25 - 136	69.6	20	M2, R3
Dieldrin [2C]	2.62583	2.0	0.25	16.6667	ND	15.8	25 - 136	69.1	20	M2, R3
Endosulfan I	3.77833	1.0	0.21	16.6667	ND	22.7	18 - 134	50.8	20	R3
Endosulfan I [2C]	3.76783	1.0	0.21	16.6667	ND	22.6	18 - 134	49.5	20	R3
Endosulfan II	0.618000	2.0	0.22	16.6667	ND	3.71	28 - 128	120	20	M2, R3
Endosulfan II [2C]	0.499000	2.0	0.22	16.6667	ND	2.99	28 - 128	132	20	M2, R3

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0805 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike Dup (B7D0805-MSD1) - Continued			**Source: 1701689-01**		Prepared: 4/27/2017 Analyzed: 4/27/2017					
Endosulfan sulfate	0.367833	2.0	0.21	16.6667	ND	2.21	5 - 145	128	20	M2, R3
Endosulfan Sulfate [2C]	0.415667	2.0	0.21	16.6667	ND	2.49	5 - 145	125	20	M2, R3
Endrin	3.21817	2.0	0.23	16.6667	ND	19.3	26 - 142	62.6	20	M2, R3
Endrin [2C]	3.16183	2.0	0.23	16.6667	ND	19.0	26 - 142	63.4	20	M2, R3
Endrin aldehyde	0.489333	2.0	0.28	16.6667	ND	2.94	8 - 146	118	20	M2, R3
Endrin aldehyde [2C]	0.495167	2.0	0.28	16.6667	ND	2.97	8 - 146	114	20	M2, R3
Endrin ketone	0.444667	2.0	0.20	16.6667	ND	2.67	16 - 139	125	20	M2, R3
Endrin ketone [2C]	0.466833	2.0	0.20	16.6667	ND	2.80	16 - 139	120	20	M2, R3
gamma-BHC	5.75733	1.0	0.20	16.6667	ND	34.5	30 - 122	27.4	20	R3
gamma-BHC [2C]	5.84533	1.0	0.20	16.6667	ND	35.1	30 - 122	26.7	20	R3
gamma-Chlordane	6.63717	1.0	0.23	16.6667	ND	39.8	18 - 132	24.2	20	R3
gamma-Chlordane [2C]	6.27600	1.0	0.23	16.6667	ND	37.7	18 - 132	21.6	20	R3
Heptachlor	8.35850	1.0	0.19	16.6667	ND	50.2	34 - 122	5.97	20	
Heptachlor [2C]	8.78267	1.0	0.19	16.6667	ND	52.7	34 - 122	3.45	20	
Heptachlor epoxide	4.03283	1.0	0.20	16.6667	ND	24.2	21 - 135	47.7	20	R3
Heptachlor epoxide [2C]	4.15967	1.0	0.20	16.6667	ND	25.0	21 - 135	45.2	20	R3
Methoxychlor	1.13783	5.0	0.18	16.6667	ND	6.83	8 - 162	117	20	M2, R3
Methoxychlor [2C]	1.14650	5.0	0.18	16.6667	ND	6.88	8 - 162	118	20	M2, R3
Surrogate: Decachlorobiphenyl	*6.593*			*16.6667*		*39.6*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*6.867*			*16.6667*		*41.2*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*6.898*			*16.6667*		*41.4*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*8.435*			*16.6667*		*50.6*	*26 - 108*			

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	BORONDA CASP, S1049-03-01
3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0811 - GCSEMI_PCB/PEST_S										
Blank (B7D0811-BLK1)					Prepared: 4/27/2017 Analyzed: 5/1/2017					
4,4´-DDD	ND	2.0	0.22							
4,4´-DDD [2C]	ND	2.0	0.22							
4,4´-DDE	ND	2.0	0.20							
4,4´-DDE [2C]	ND	2.0	0.20							
4,4´-DDT	ND	2.0	0.13							
4,4´-DDT [2C]	ND	2.0	0.13							
Aldrin	ND	1.0	0.27							
Aldrin [2C]	ND	1.0	0.27							
alpha-BHC	ND	1.0	0.20							
alpha-BHC [2C]	ND	1.0	0.20							
alpha-Chlordane	ND	1.0	0.21							
alpha-Chlordane [2C]	ND	1.0	0.21							
beta-BHC	ND	1.0	0.23							
beta-BHC [2C]	ND	1.0	0.23							
Chlordane	ND	8.5	0.90							
Chlordane [2C]	ND	8.5	0.90							
delta-BHC	ND	1.0	0.21							
delta-BHC [2C]	ND	1.0	0.21							
Dieldrin	ND	2.0	0.25							
Dieldrin [2C]	ND	2.0	0.25							
Endosulfan I	ND	1.0	0.21							
Endosulfan I [2C]	ND	1.0	0.21							
Endosulfan II	ND	2.0	0.22							
Endosulfan II [2C]	ND	2.0	0.22							
Endosulfan sulfate	ND	2.0	0.21							
Endosulfan Sulfate [2C]	ND	2.0	0.21							
Endrin	ND	2.0	0.23							
Endrin [2C]	ND	2.0	0.23							
Endrin aldehyde	ND	2.0	0.28							
Endrin aldehyde [2C]	ND	2.0	0.28							
Endrin ketone	ND	2.0	0.20							
Endrin ketone [2C]	ND	2.0	0.20							
gamma-BHC	ND	1.0	0.20							
gamma-BHC [2C]	ND	1.0	0.20							
gamma-Chlordane	ND	1.0	0.23							
gamma-Chlordane [2C]	ND	1.0	0.23							
Heptachlor	ND	1.0	0.19							
Heptachlor [2C]	ND	1.0	0.19							
Heptachlor epoxide	ND	1.0	0.20							
Heptachlor epoxide [2C]	ND	1.0	0.20							
Methoxychlor	ND	5.0	0.18							

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0811 - GCSEMI_PCB/PEST_S (continued)										
Blank (B7D0811-BLK1) - Continued					Prepared: 4/27/2017 Analyzed: 5/1/2017					
Methoxychlor [2C]	ND	5.0	0.18							
Toxaphene	ND	50	8.2							
Toxaphene [2C]	ND	50	8.2							
Surrogate: Decachlorobiphenyl	*14.77*			*16.6667*		*88.6*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*15.14*			*16.6667*		*90.8*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*16.70*			*16.6667*		*100*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*16.95*			*16.6667*		*102*	*26 - 108*			
LCS (B7D0811-BS1)					Prepared: 4/27/2017 Analyzed: 5/1/2017					
4,4´-DDD	16.8465	2.0	0.22	16.6667		101	53 - 125			
4,4´-DDD [2C]	18.0143	2.0	0.22	16.6667		108	53 - 125			
4,4´-DDE	17.3217	2.0	0.20	16.6667		104	54 - 113			
4,4´-DDE [2C]	16.5915	2.0	0.20	16.6667		99.5	54 - 113			
4,4´-DDT	9.23317	2.0	0.13	16.6667		55.4	25 - 127			
4,4´-DDT [2C]	8.57967	2.0	0.13	16.6667		51.5	25 - 127			
Aldrin	16.5935	1.0	0.27	16.6667		99.6	59 - 107			
Aldrin [2C]	16.6957	1.0	0.27	16.6667		100	59 - 107			
alpha-BHC	17.4373	1.0	0.20	16.6667		105	59 - 104			L3
alpha-BHC [2C]	17.5413	1.0	0.20	16.6667		105	59 - 104			L3
alpha-Chlordane	17.0000	1.0	0.21	16.6667		102	54 - 110			
alpha-Chlordane [2C]	16.6202	1.0	0.21	16.6667		99.7	54 - 110			
beta-BHC	17.9260	1.0	0.23	16.6667		108	57 - 103			L3
beta-BHC [2C]	18.2942	1.0	0.23	16.6667		110	57 - 103			L3
delta-BHC	15.5305	1.0	0.21	16.6667		93.2	16 - 120			
delta-BHC [2C]	15.9898	1.0	0.21	16.6667		95.9	16 - 120			
Dieldrin	16.9150	2.0	0.25	16.6667		101	61 - 109			
Dieldrin [2C]	16.3245	2.0	0.25	16.6667		97.9	61 - 109			
Endosulfan I	16.8233	1.0	0.21	16.6667		101	60 - 106			
Endosulfan I [2C]	16.0223	1.0	0.21	16.6667		96.1	60 - 106			
Endosulfan II	17.3325	2.0	0.22	16.6667		104	59 - 108			
Endosulfan II [2C]	16.8017	2.0	0.22	16.6667		101	59 - 108			
Endosulfan sulfate	15.6223	2.0	0.21	16.6667		93.7	54 - 110			
Endosulfan Sulfate [2C]	16.5135	2.0	0.21	16.6667		99.1	54 - 110			
Endrin	18.8893	2.0	0.23	16.6667		113	63 - 112			L3
Endrin [2C]	19.2162	2.0	0.23	16.6667		115	63 - 112			L3
Endrin aldehyde	16.2232	2.0	0.28	16.6667		97.3	64 - 119			
Endrin aldehyde [2C]	17.0352	2.0	0.28	16.6667		102	64 - 119			
Endrin ketone	13.5825	2.0	0.20	16.6667		81.5	54 - 115			
Endrin ketone [2C]	13.2058	2.0	0.20	16.6667		79.2	54 - 115			
gamma-BHC	17.4282	1.0	0.20	16.6667		105	60 - 107			
gamma-BHC [2C]	16.8720	1.0	0.20	16.6667		101	60 - 107			

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Project Number : BORONDA CASP, S1049-03-01
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Reported : 05/01/2017

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0811 - GCSEMI_PCB/PEST_S (continued)										
LCS (B7D0811-BS1) - Continued					Prepared: 4/27/2017 Analyzed: 5/1/2017					
gamma-Chlordane	16.4812	1.0	0.23	16.6667		98.9	57 - 106			
gamma-Chlordane [2C]	16.3767	1.0	0.23	16.6667		98.3	57 - 106			
Heptachlor	15.3282	1.0	0.19	16.6667		92.0	54 - 114			
Heptachlor [2C]	15.1872	1.0	0.19	16.6667		91.1	54 - 114			
Heptachlor epoxide	16.3130	1.0	0.20	16.6667		97.9	61 - 106			
Heptachlor epoxide [2C]	16.1288	1.0	0.20	16.6667		96.8	61 - 106			
Methoxychlor	7.48867	5.0	0.18	16.6667		44.9	18 - 138			
Methoxychlor [2C]	7.36583	5.0	0.18	16.6667		44.2	18 - 138			
Surrogate: Decachlorobiphenyl	*15.82*			*16.6667*		*94.9*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*15.71*			*16.6667*		*94.3*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*17.42*			*16.6667*		*105*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*18.37*			*16.6667*		*110*	*26 - 108*			S12
Matrix Spike (B7D0811-MS1)			**Source: 1701689-15**		Prepared: 4/27/2017 Analyzed: 5/1/2017					
4,4´-DDD	8.55100	2.0	0.22	16.6667	ND	51.3	25 - 141			
4,4´-DDD [2C]	9.04017	2.0	0.22	16.6667	ND	54.2	25 - 141			
4,4´-DDE	11.1988	2.0	0.20	16.6667	ND	67.2	22 - 141			
4,4´-DDE [2C]	10.6695	2.0	0.20	16.6667	ND	64.0	22 - 141			
4,4´-DDT	5.60517	2.0	0.13	16.6667	ND	33.6	15 - 136			
4,4´-DDT [2C]	5.04000	2.0	0.13	16.6667	ND	30.2	15 - 136			
Aldrin	10.4525	1.0	0.27	16.6667	ND	62.7	33 - 118			
Aldrin [2C]	10.4180	1.0	0.27	16.6667	ND	62.5	33 - 118			
alpha-BHC	8.64217	1.0	0.20	16.6667	ND	51.9	30 - 116			
alpha-BHC [2C]	8.60183	1.0	0.20	16.6667	ND	51.6	30 - 116			
alpha-Chlordane	9.49450	1.0	0.21	16.6667	ND	57.0	30 - 123			
alpha-Chlordane [2C]	9.22417	1.0	0.21	16.6667	ND	55.3	30 - 123			
beta-BHC	6.13183	1.0	0.23	16.6667	ND	36.8	24 - 121			
beta-BHC [2C]	6.42783	1.0	0.23	16.6667	ND	38.6	24 - 121			
delta-BHC	2.41750	1.0	0.21	16.6667	ND	14.5	7 - 120			
delta-BHC [2C]	2.45767	1.0	0.21	16.6667	ND	14.7	7 - 120			
Dieldrin	4.14083	2.0	0.25	16.6667	ND	24.8	25 - 136			M2
Dieldrin [2C]	3.84650	2.0	0.25	16.6667	ND	23.1	25 - 136			M2
Endosulfan I	5.44200	1.0	0.21	16.6667	ND	32.7	18 - 134			
Endosulfan I [2C]	5.09500	1.0	0.21	16.6667	ND	30.6	18 - 134			
Endosulfan II	1.10583	2.0	0.22	16.6667	ND	6.63	28 - 128			M2
Endosulfan II [2C]	0.777167	2.0	0.22	16.6667	ND	4.66	28 - 128			M2
Endosulfan sulfate	0.462833	2.0	0.21	16.6667	ND	2.78	5 - 145			M2
Endosulfan Sulfate [2C]	0.464000	2.0	0.21	16.6667	ND	2.78	5 - 145			M2
Endrin	4.77183	2.0	0.23	16.6667	ND	28.6	26 - 142			
Endrin [2C]	4.82167	2.0	0.23	16.6667	ND	28.9	26 - 142			
Endrin aldehyde	0.488500	2.0	0.28	16.6667	ND	2.93	8 - 146			M2

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Rancho Cordova , CA 95742	Reported :	05/01/2017

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0811 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike (B7D0811-MS1) - Continued			**Source: 1701689-15**		Prepared: 4/27/2017 Analyzed: 5/1/2017					
Endrin aldehyde [2C]	0.531167	2.0	0.28	16.6667	ND	3.19	8 - 146			M2
Endrin ketone	0.600667	2.0	0.20	16.6667	ND	3.60	16 - 139			M2
Endrin ketone [2C]	0.540333	2.0	0.20	16.6667	ND	3.24	16 - 139			M2
gamma-BHC	7.81333	1.0	0.20	16.6667	ND	46.9	30 - 122			
gamma-BHC [2C]	7.41567	1.0	0.20	16.6667	ND	44.5	30 - 122			
gamma-Chlordane	8.48550	1.0	0.23	16.6667	ND	50.9	18 - 132			
gamma-Chlordane [2C]	8.37883	1.0	0.23	16.6667	ND	50.3	18 - 132			
Heptachlor	9.40483	1.0	0.19	16.6667	ND	56.4	34 - 122			
Heptachlor [2C]	9.46767	1.0	0.19	16.6667	ND	56.8	34 - 122			
Heptachlor epoxide	5.74617	1.0	0.20	16.6667	ND	34.5	21 - 135			
Heptachlor epoxide [2C]	5.56100	1.0	0.20	16.6667	ND	33.4	21 - 135			
Methoxychlor	0.677000	5.0	0.18	16.6667	ND	4.06	8 - 162			M2
Methoxychlor [2C]	0.640500	5.0	0.18	16.6667	ND	3.84	8 - 162			M2
Surrogate: Decachlorobiphenyl	*11.25*			*16.6667*		*67.5*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*11.27*			*16.6667*		*67.6*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*10.12*			*16.6667*		*60.7*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*11.09*			*16.6667*		*66.5*	*26 - 108*			
Matrix Spike Dup (B7D0811-MSD1)			**Source: 1701689-15**		Prepared: 4/27/2017 Analyzed: 5/1/2017					
4,4´-DDD	9.42650	2.0	0.22	16.6667	ND	56.6	25 - 141	9.74	20	
4,4´-DDD [2C]	10.2615	2.0	0.22	16.6667	ND	61.6	25 - 141	12.7	20	
4,4´-DDE	11.5225	2.0	0.20	16.6667	ND	69.1	22 - 141	2.85	20	
4,4´-DDE [2C]	11.2828	2.0	0.20	16.6667	ND	67.7	22 - 141	5.59	20	
4,4´-DDT	6.26200	2.0	0.13	16.6667	ND	37.6	15 - 136	11.1	20	
4,4´-DDT [2C]	5.73317	2.0	0.13	16.6667	ND	34.4	15 - 136	12.9	20	
Aldrin	10.7282	1.0	0.27	16.6667	ND	64.4	33 - 118	2.60	20	
Aldrin [2C]	11.0370	1.0	0.27	16.6667	ND	66.2	33 - 118	5.77	20	
alpha-BHC	9.59467	1.0	0.20	16.6667	ND	57.6	30 - 116	10.4	20	
alpha-BHC [2C]	9.83417	1.0	0.20	16.6667	ND	59.0	30 - 116	13.4	20	
alpha-Chlordane	10.2585	1.0	0.21	16.6667	ND	61.6	30 - 123	7.74	20	
alpha-Chlordane [2C]	10.2427	1.0	0.21	16.6667	ND	61.5	30 - 123	10.5	20	
beta-BHC	7.44017	1.0	0.23	16.6667	ND	44.6	24 - 121	19.3	20	
beta-BHC [2C]	7.86817	1.0	0.23	16.6667	ND	47.2	24 - 121	20.2	20	R3
delta-BHC	3.25450	1.0	0.21	16.6667	ND	19.5	7 - 120	29.5	20	R3
delta-BHC [2C]	3.40783	1.0	0.21	16.6667	ND	20.4	7 - 120	32.4	20	R3
Dieldrin	5.11700	2.0	0.25	16.6667	ND	30.7	25 - 136	21.1	20	R3
Dieldrin [2C]	4.91200	2.0	0.25	16.6667	ND	29.5	25 - 136	24.3	20	R3
Endosulfan I	6.57450	1.0	0.21	16.6667	ND	39.4	18 - 134	18.8	20	
Endosulfan I [2C]	6.34633	1.0	0.21	16.6667	ND	38.1	18 - 134	21.9	20	R3
Endosulfan II	1.39533	2.0	0.22	16.6667	ND	8.37	28 - 128	23.1	20	M2, R3
Endosulfan II [2C]	1.04700	2.0	0.22	16.6667	ND	6.28	28 - 128	29.6	20	M2, R3

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7D0811 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike Dup (B7D0811-MSD1) - Continued			**Source: 1701689-15**		Prepared: 4/27/2017 Analyzed: 5/1/2017					
Endosulfan sulfate	0.601167	2.0	0.21	16.6667	ND	3.61	5 - 145	26.0	20	M2, R3
Endosulfan Sulfate [2C]	0.618000	2.0	0.21	16.6667	ND	3.71	5 - 145	28.5	20	M2, R3
Endrin	5.91367	2.0	0.23	16.6667	ND	35.5	26 - 142	21.4	20	R3
Endrin [2C]	6.14033	2.0	0.23	16.6667	ND	36.8	26 - 142	24.1	20	R3
Endrin aldehyde	0.646667	2.0	0.28	16.6667	ND	3.88	8 - 146	27.9	20	M2, R3
Endrin aldehyde [2C]	0.719667	2.0	0.28	16.6667	ND	4.32	8 - 146	30.1	20	M2, R3
Endrin ketone	0.812167	2.0	0.20	16.6667	ND	4.87	16 - 139	29.9	20	M2, R3
Endrin ketone [2C]	0.755500	2.0	0.20	16.6667	ND	4.53	16 - 139	33.2	20	M2, R3
gamma-BHC	8.94750	1.0	0.20	16.6667	ND	53.7	30 - 122	13.5	20	
gamma-BHC [2C]	8.79917	1.0	0.20	16.6667	ND	52.8	30 - 122	17.1	20	
gamma-Chlordane	9.32567	1.0	0.23	16.6667	ND	56.0	18 - 132	9.43	20	
gamma-Chlordane [2C]	9.49117	1.0	0.23	16.6667	ND	56.9	18 - 132	12.4	20	
Heptachlor	9.79117	1.0	0.19	16.6667	ND	58.7	34 - 122	4.03	20	
Heptachlor [2C]	10.1330	1.0	0.19	16.6667	ND	60.8	34 - 122	6.79	20	
Heptachlor epoxide	6.87433	1.0	0.20	16.6667	ND	41.2	21 - 135	17.9	20	
Heptachlor epoxide [2C]	6.87033	1.0	0.20	16.6667	ND	41.2	21 - 135	21.1	20	R3
Methoxychlor	0.957667	5.0	0.18	16.6667	ND	5.75	8 - 162	34.3	20	M2, R3
Methoxychlor [2C]	0.901667	5.0	0.18	16.6667	ND	5.41	8 - 162	33.9	20	M2, R3
Surrogate: Decachlorobiphenyl	*10.94*			*16.6667*		*65.6*	*27 - 123*			
Surrogate: Decachlorobiphenyl [	*11.76*			*16.6667*		*70.6*	*27 - 123*			
Surrogate: Tetrachloro-m-xylene	*10.36*			*16.6667*		*62.2*	*26 - 108*			
Surrogate: Tetrachloro-m-xylene	*11.52*			*16.6667*		*69.1*	*26 - 108*			

Certificate of Analysis

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3160 Gold Valley Drive, Suite 800		Report To :	John Juhrend
Rancho Cordova , CA 95742		Reported :	05/01/2017

Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
R3	RPD value outside acceptance criteria. Calculation is based on raw values. The analytical batch was validated by the Laboratory Control Sample (LCS).
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L3	Laboratory control sample outside in-house established limits but within method criteria.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 2

Instruction: Complete all shaded areas.

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Method of Transport	Condition	Y	N	Condition	Y	N
☐ Client ☑ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
☐ FedEx ☑ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
☐ GSO	3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C: 5.4		
☐ Other:	4. SEALED	☐	☑			

CUSTOMER

Company: GEOCON
Address: 3160 GOLD VALLEY #800
City: RANCHO CORDOVA State: CA Zip: 95742
Tel: 916.852.9118 Fax:

SEND REPORT TO:
Attn: Email:
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:
Company:
Address:
City: State: Zip:

PROJECT SAMPLES

Project Name: BURONDA CASP
Project No.: S1049-03-01
Sampler: JJ
Quote No: E17C214
PO #:
Special Instructions/Comments: HOMOGENIZE

Analyses: 8260 / 624 (Volatiles); 8015(GRO); 8015(DRO); 8270(Semi-volatiles); 8081(Organochlorine Pesticides); 8082(PCBs); 6010 / 7000(Title 22 Metals); TO-15; ARSENIC (6010)

Sample Matrix: SOIL / SEDIMENT / SLUDGE; SOLIDS / WIPE / FILTER; WATER - DRINKING / GROUND; WATER - STORM / WASTE; AQUEOUS / LAYERED - OIL

Container Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister
Material: 1=Glass; 2=Plastic; 3=Metal
Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

QA/QC: ☒ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8081	ARSENIC (6010)	SOIL / SEDIMENT / SLUDGE	TAT	#	Type	Material	Preservative	REMARKS
1	170689-1	SS1	4/20/17	1030	X	X	X	5	1	5	1	4	
2	-2	SS2		1100	X	X	X	5	1	5	1	4	
3	-3	SS3		1130	X	X	X	5	1	5	1	4	
4	-4	SS4		1200	X	X	X	5	1	5	1	4	
5	-5	SS5		1215	X	X	X	5	1	5	1	4	
6	-6	SS6		1230	X	X	X	5	1	5	1	4	
7	-7	SS7		1245	X	X	X	5	1	5	1	4	
8	-8	SS8		1300	X	X	X	5	1	5	1	4	
9	-9	SS9		1315	X	X	X	5	1	5	1	4	
10	-10	SS10		1330	X	X	X	5	1	5	1	4	

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name | Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	4/21/17	1700			
				4/22/17	1330

ADVANCED TECHNOLOGY LABORATORIES

3275 Walnut Ave., Signal Hill, CA 90755
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CHAIN OF CUSTODY RECORD

Page 2 of 2

Instruction: Complete all shaded areas.

For Laboratory Use Only							ATLCOC Ver: 20130715
Method of Transport	Sample Conditions Upon Receipt						
	Condition	Y	N	Condition	Y	N	
☐ Client ☐ ATL	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐	
☐ FedEx ☑ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐	
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:			
☐ Other: ______	4. SEALED	☐	☐				

CUSTOMER

Company: Crocon
Address: 3160 Gold Valley #800
City: Rancho Cordova State: CA Zip: 95742
Tel: 916.852.9118 Fax:

SEND REPORT TO:	SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email:	Attn: Email:
Company:	Company:
Address:	Address:
City: State: Zip:	City: State: Zip:

PROJECT SAMPLES

Project Name: Boronda Casp
Project No.: 51049-03-01
Sampler: JJ
Quote No: E17C214
PO #:
Special Instructions/Comments: Homogenize

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV

ITEM	Lab No.	Sample ID / Location	Date	Time	8260 / 624 (Volatiles)	8015(GRO)	8015(DRO)	8270(Semi-volatiles)	8081(Organochlorine Pesticides)	8082(PCBs)	6010 / 7000(Title 22 Metals)	TO-15	Arsenic (6010B)	SOIL / SEDIMENT / SLUDGE	SOLIDS / WIPE / FILTER	WATER - DRINKING / GROUND	WATER - STORM / WASTE	AQUEOUS / LAYERED - OIL	TAT	#	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn ((Ac)2; 6=NaOH; 7=NA2S2O3	REMARKS
1	170689-11	SS11	4/20/17	1345					X				X	X					5	1	5	1	4	
2	-12	SS12		1400					X				X	X					5	1	5	1	4	
3	-13	SS13		1430					X				X	X					5	1	5	1	4	
4	-14	SS14		1445					X				X	X					5	1	5	1	4	
5	-15	SS15		1515					X				X	X					5	1	5	1	4	
6	-16	SS16		1545					X				X	X					5	1	5	1	4	
7	-17	SS17		1615					X				X	X					5	1	5	1	4	
8	-18	SS18		1630					X				X	X					5	1	5	1	4	
9																								
10																								

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples Submitted AFTER 3:00 PM, are considered received the following Business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
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   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work - ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
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   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reforma? ed report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction on procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

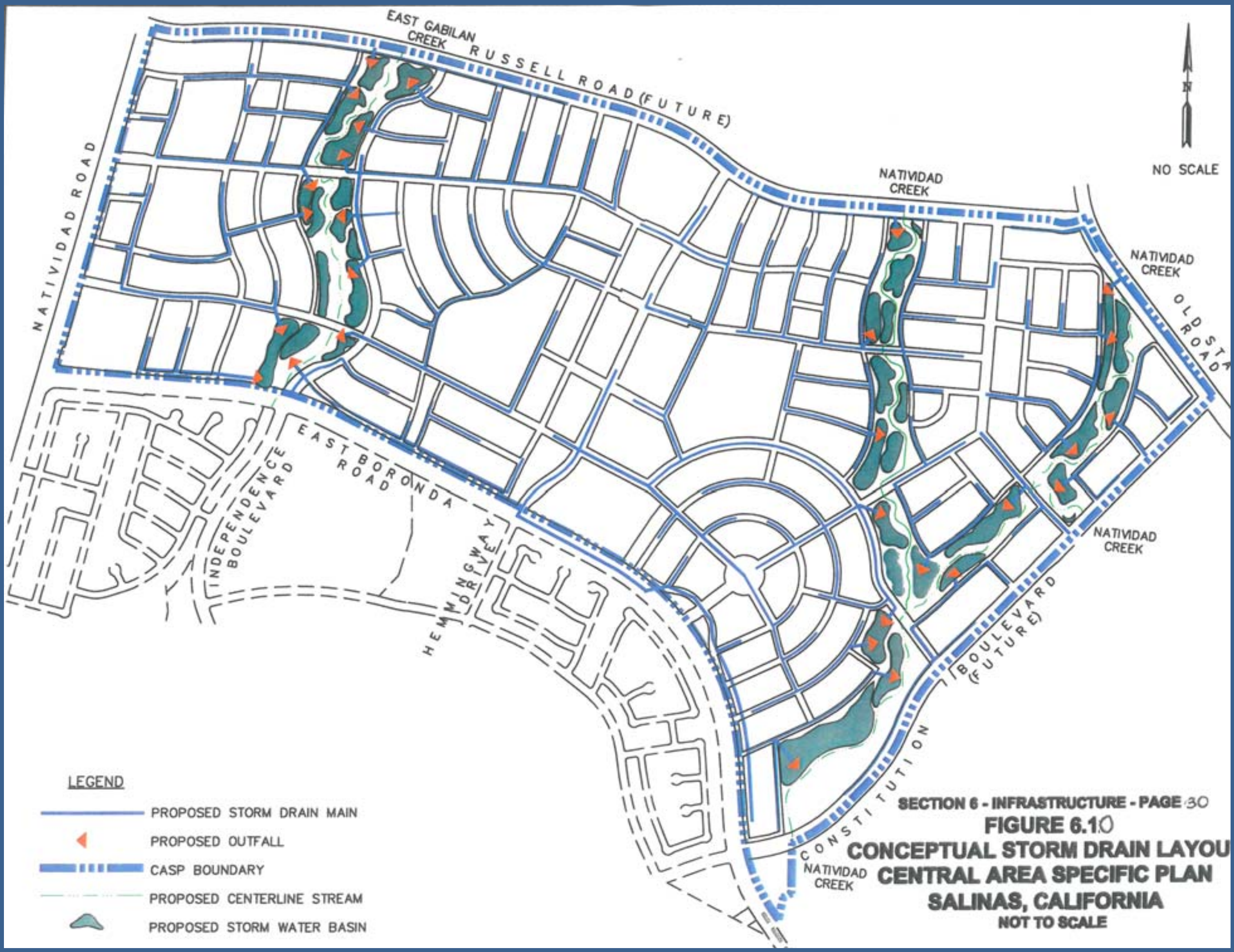
As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Submitter Print Name Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
	4/21/17	1700			
			J. Hernandez / Brown	4/22/17	1330

APPENDIX F –HYDROLOGY AND WATER QUALITY TECHNICAL STUDY



Hydrology and Water Quality Technical Study for Central Area Specific Plan EIR

Prepared for:

DE NOVO PLANNING GROUP

Prepared by:

Balance Hydrologics, Inc.®

September 2017

September 1, 2017

A REPORT PREPARED FOR:

De Novo Planning Group
1020 Suncast Lane #106
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by

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Benjamin Roberts, PhD, P.E.
Senior Hydraulic Engineer

Anne E Senter
Anne E. Senter, PhD
Geomorphologist/Hydrologist

Project Assignment: 214140

800 Bancroft Way, Suite 101 ~ Berkeley, California 94710-2251 ~ (510) 704-1000 ~ office@balancehydro.com

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1 INTRODUCTION

The proposed Central Area Specific Plan (CASP) will establish land use planning and regulatory guidance that includes land use and zoning designations and policies, development regulations, and design standards for the approximately 760-acre CASP project area. The CASP will serve as a bridge between the Salinas General Plan and individual development applications in the Specific Plan Area, by adding greater specificity to the goals, policies, and concepts for the project area. This report addresses the potential hydrologic and water quality impacts of the project and is structured as an appendix to the Administrative Draft Environmental Impact Statement.

The City of Salinas is located in northern Monterey County, within the Salinas Valley and along the eastern boundary of the Salinas River floodplain. The valley is bounded to the west by the Gabilan Mountain Range and to the east by the Santa Lucia Mountain Range. Salinas is situated approximately 20 miles northeast of the city of Monterey (**Figure 1-1**), 60 miles south of San Jose, 100 miles south of San Francisco and 325 miles north of Los Angeles. Several regional transportation routes are located within or near Salinas, including U.S. Highway 101, State Routes 68 and 183, the Union Pacific Railroad line. Salinas Municipal Airport is a general aviation facility located in the southern portion of the city east of U.S 101.

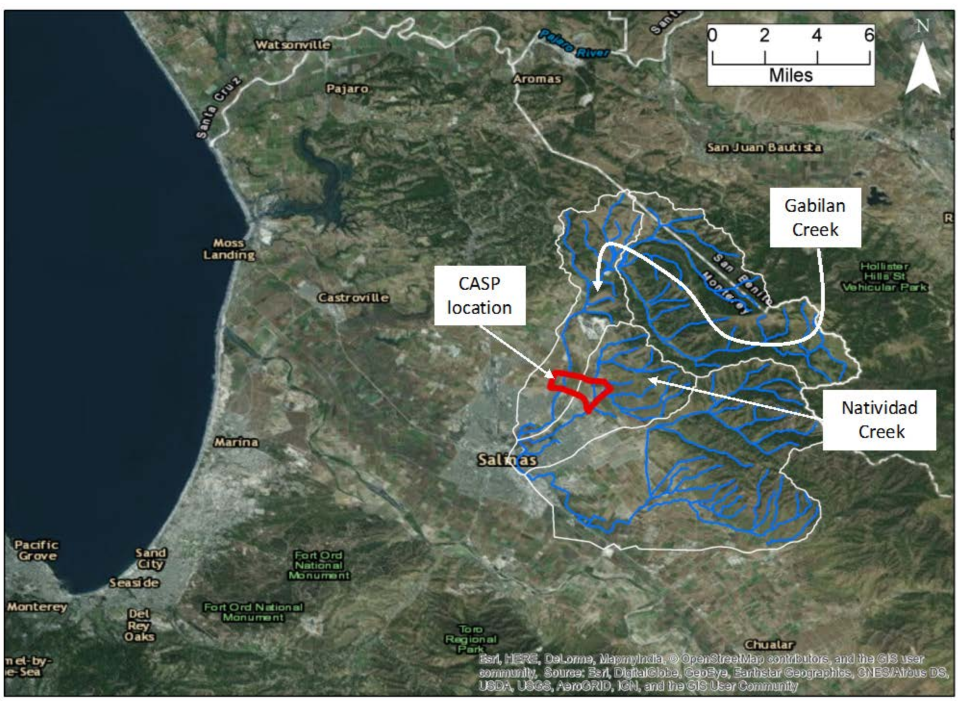


Figure 1-1 Project vicinity.

The CASP project area is located within the incorporated city limits of Salinas except for the northwest corner, which remains outside of city limits. The CASP project area is bounded by Natividad Road on the west, Boronda Road on the south, the future extension of Constitution Boulevard on the east, and Old Stage Road and the future extension of Russell Road on the north. Carr Lake, U.S. 101, and North Main Street are located to the west. Unincorporated land under the jurisdiction of the County of Monterey abuts the CASP project area on the north and northeast.

The mainstem of Gabilan Creek runs roughly north to south through the western portion of the CASP project area. The mainstem of Natividad Creek runs roughly north to south through to the eastern portion of the CASP project area. Two Natividad Creek tributaries enter the CASP project area from the northeast and east, join together, and then join with the mainstem. An additional Natividad Creek tributary joins with the mainstem at the southeastern-most boundary of the CASP project area. Both Gabilan and Natividad Creeks continue downstream and flow into Carr Lake, which is currently used for agriculture but historically oscillated between a shallow lake to swampy wetlands, depending on annual fluctuations of rainfall and runoff conditions. Big Sur Land Trust recently acquired 73 acres of land on the northwest side of the Carr Lake lakebed, and Gabilan Creek flows along that property boundary (Senter and others, 2017). From a flood control perspective, Carr Lake provides the City of Salinas and other downstream properties with the most important flood attenuation function within the regionally significant Reclamation Ditch drainage system (Senter and others, 2017).

The principal objective of the project is the approval and subsequent implementation of the proposed CASP and related entitlements. Proposed land uses include residential, mixed use commercial, community park, neighborhood parks, small parks, and open space. The overall proposed project includes the development of 3,351-3,929 residential dwelling units, up to 370,000 square feet of commercial/mixed use building area, up to 58 acres of public/semi-public facilities, and up to 150 acres of parks and open space land uses including enhanced Gabilan and Natividad Creek corridors, detention/retention/water quality basins, plazas, a greenway network linking all parks/open spaces, a buffer zone along the south side of a Russell Road extension, and residential neighborhood parks (CASP NOP, 2017).

2 EXISTING SITE CONDITIONS

2.1 Land Use, Topography, and Soils

Existing land use consists of lands under agricultural production with associated residences and farm yards (**Figure 2-1**). Under current conditions, groundwater extraction is used to water crops for production. Agricultural crop tilling slows and retains overland flows, allowing irrigated water and precipitation to infiltrate into surficial soils. No paved roads cross the project site.

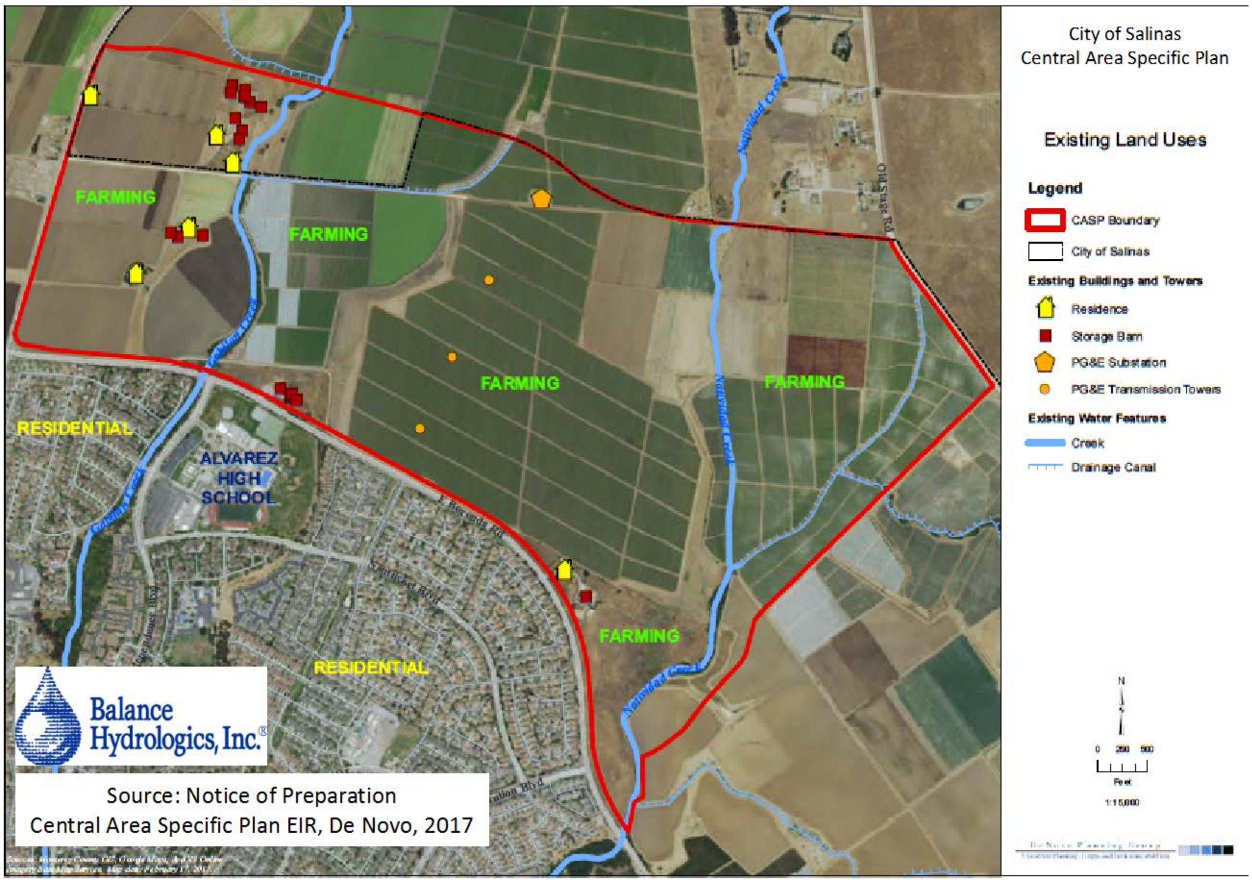


Figure 2-1 Existing land uses. Source: CASP NOP, 2017.

Gabilan Creek topography exhibits about 30 feet of elevational drop from the upstream, north edge of the CASP project area to the downstream, south edge at Boronda Road (**Figure 2-2**). A hillslope rises adjacent to the creek channel to the west that ranges 20-30 feet higher in elevation than the channel bed. Topography to the east is mostly flat across agricultural fields until it rises 25-35 feet in elevation at the watershed divide about mid-project between Gabilan and Natividad Creeks.

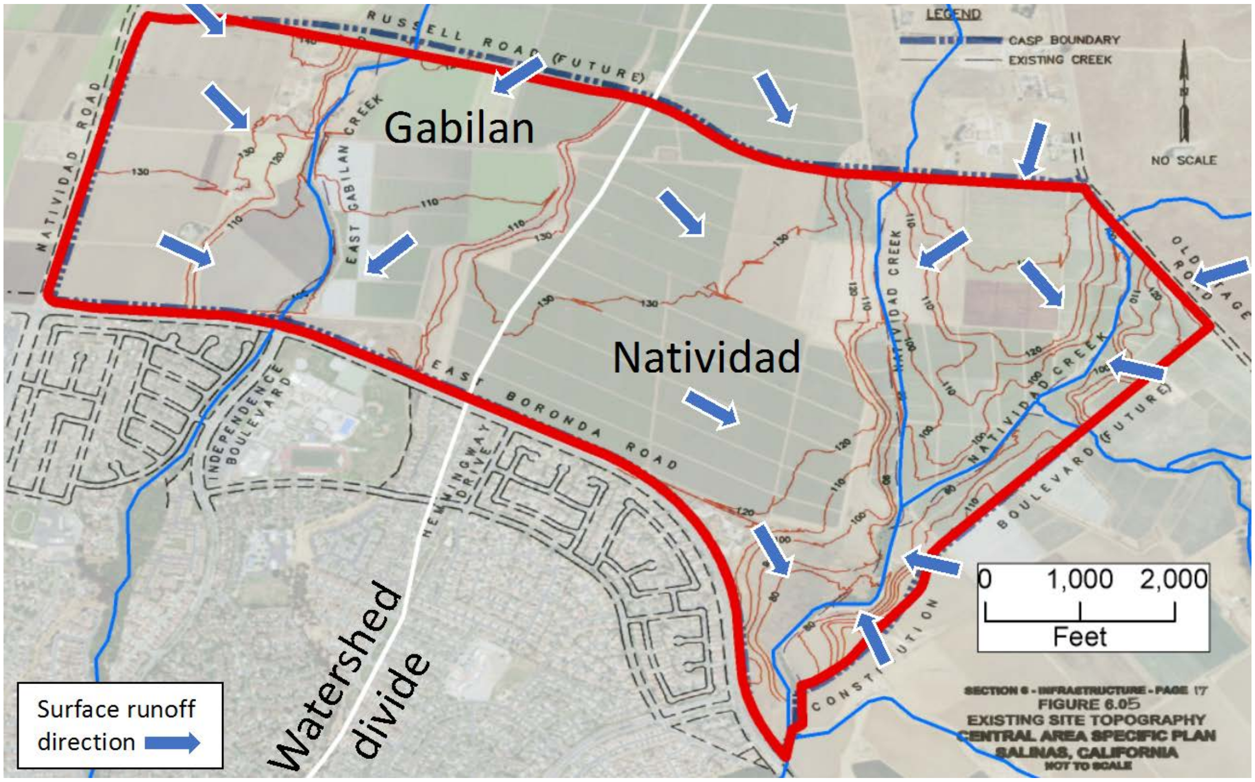


Figure 2-2 Topography, surface runoff patterns, and watershed divide. Overlay source: CASP Draft, 2013.

Natividad Creek topography exhibits higher degrees of elevational variation, with about 75 feet of differentiation from the hillslope between the two tributary channels entering from the north (crossing the future extension of Russell Road) and northeast (crossing Old Stage Road) to Boronda Road (**Figure 2-2**). Hillslopes on both sides of the creek range up to 30-40 feet higher in elevation than the channel bed, especially along the future extension of Constitution Boulevard, and near the downstream project edge at Boronda Road.

General overland flow pathways for surface runoff during rainfall (**Figure 2-2**) are a direct result of existing topography, which includes the overall hilly nature of the CASP project area, tilled agricultural fields that are generally smooth and follow hillslope contours, and overland flow from areas upslope of the CASP boundary. Natividad Creek may experience faster rates of runoff during storm conditions than Gabilan Creek because of steeper hillslopes.

The United States Department of Agriculture and the Natural Resources Conservation Service (WSS, 2017) uses a soils classification scheme of four Hydrologic Soil Groups (HSGs)

A through D. Designation into HSG classification A indicates soils with high infiltration rates that slow progressively in HSG B, C, and D classes. Soils classed as HSG D types generally contain the highest percentage of finely textured sediment grains such as clays that tend to impede the infiltration of water into soils. **Table 2-1** and **Figure 2-3** summarize surficial soil data available for the CASP project area (WSS, 2017). Infiltration rates are highest along much of Gabilan Creek and its historical floodplain to the east toward the watershed divide with Natividad Creek. Lower infiltration capacities for surficial soils in Natividad Creek combined with steeper hillslopes suggest that runoff rates could be higher than those of Gabilan Creek in certain circumstances.

Table 2-1. Soil classification, HSG classification, and approximate infiltration rates for the CASP project area. Source: WSS, 2017.

	Soil classifications	HSG	Infiltration rate inches/hour
Af	Aquic Xerofluvents	--	
AvA	Arroyo Seco gravelly loam, 0-2 percent slopes	A	4.0
AvB	Arroyo Seco gravelly loam, 2-5 percent slopes	A	4.0
EaA	Elder sandy loam, 0-2 percent slopes	A	7.8
GkB	Gorgonio sandy loam, 0-5 percent slopes	A	13.0
Xb	Xerorthents, sandy	A	4.0
CbA	Chualar loam, 0-2 percent slopes	C	1.6
CbB	Chualar loam, 2-5 percent slopes	C	1.6
CbC	Chualar loam, 5-9 percent slopes	C	1.6
DaA	Danville sandy clay loam, 0-2 percent slopes	C	0.3
GbC	Garey sandy loam, 2-9 percent slopes	C	1.3
PnC	Placentia sandy loam, 2-9 percent slopes	C	0.6
SbA	Salinas clay loam, 0-2 percent slopes	C	4.5
PnA	Placentia sandy loam, 0-2 percent slopes	D	0.6
PnD	Placentia sandy loam, 9-15 percent slopes	D	0.3

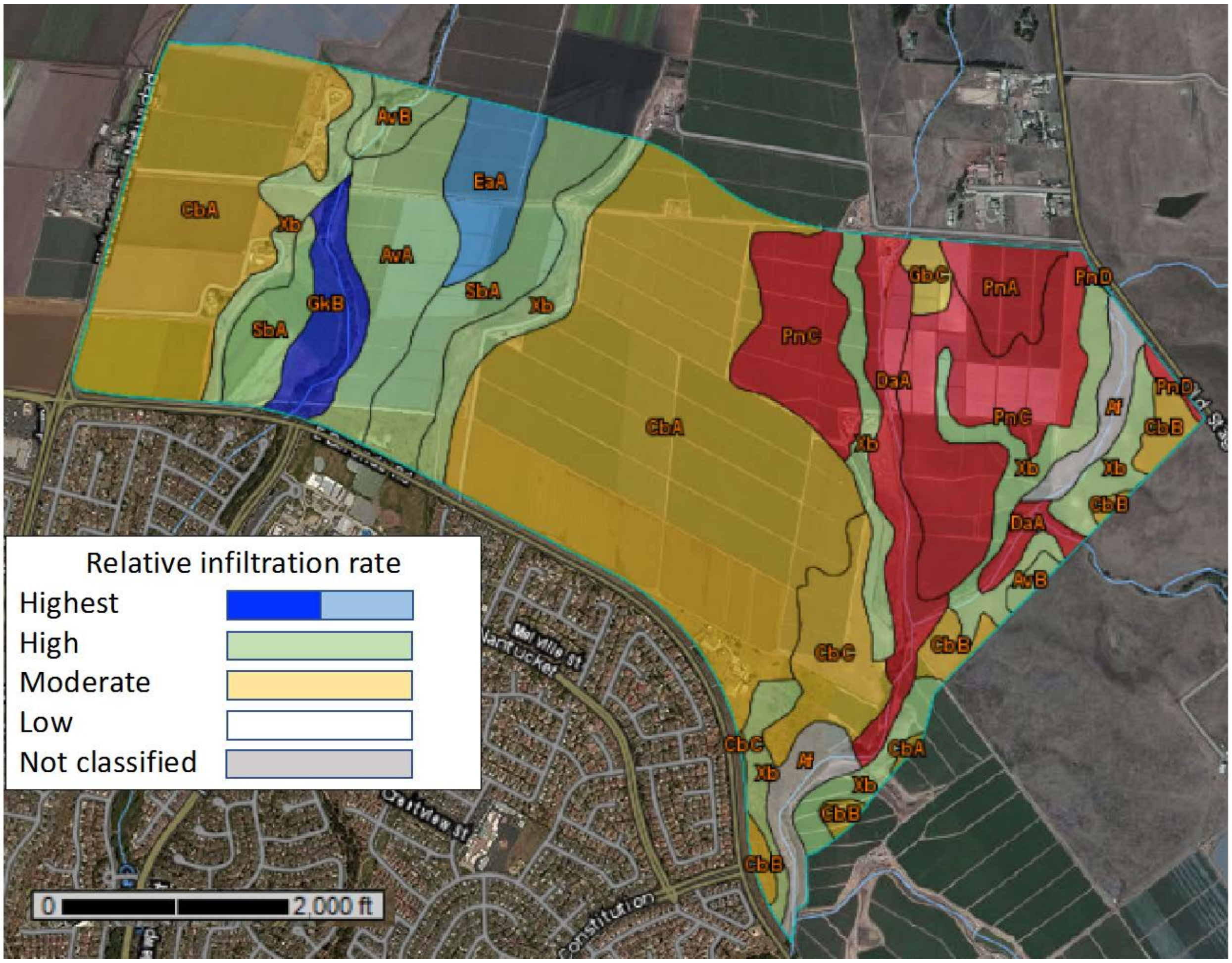


Figure 2-3 Relative infiltration rates and soil classifications (see Table 2-1 for additional details) for the CASP project area. Source: WSS, 2017.

2.2 Field Reconnaissance and Geomorphic Summary of Channel Conditions

Field reconnaissance to assess geomorphic and hydrologic conditions at Gabilan and Natividad Creeks was conducted on April 20, 2017 by two Balance Hydrologics staff members. The wet winter of 2016-2017 provided an important perspective into how these watersheds respond to high flows under existing conditions. Reconnaissance included recording observations during a walk along portions of both channels within the CASP project area and at locations upstream and downstream of the project area (**Figure 2-4**). Images in support of the summary in this section can be found in **Appendix A**.

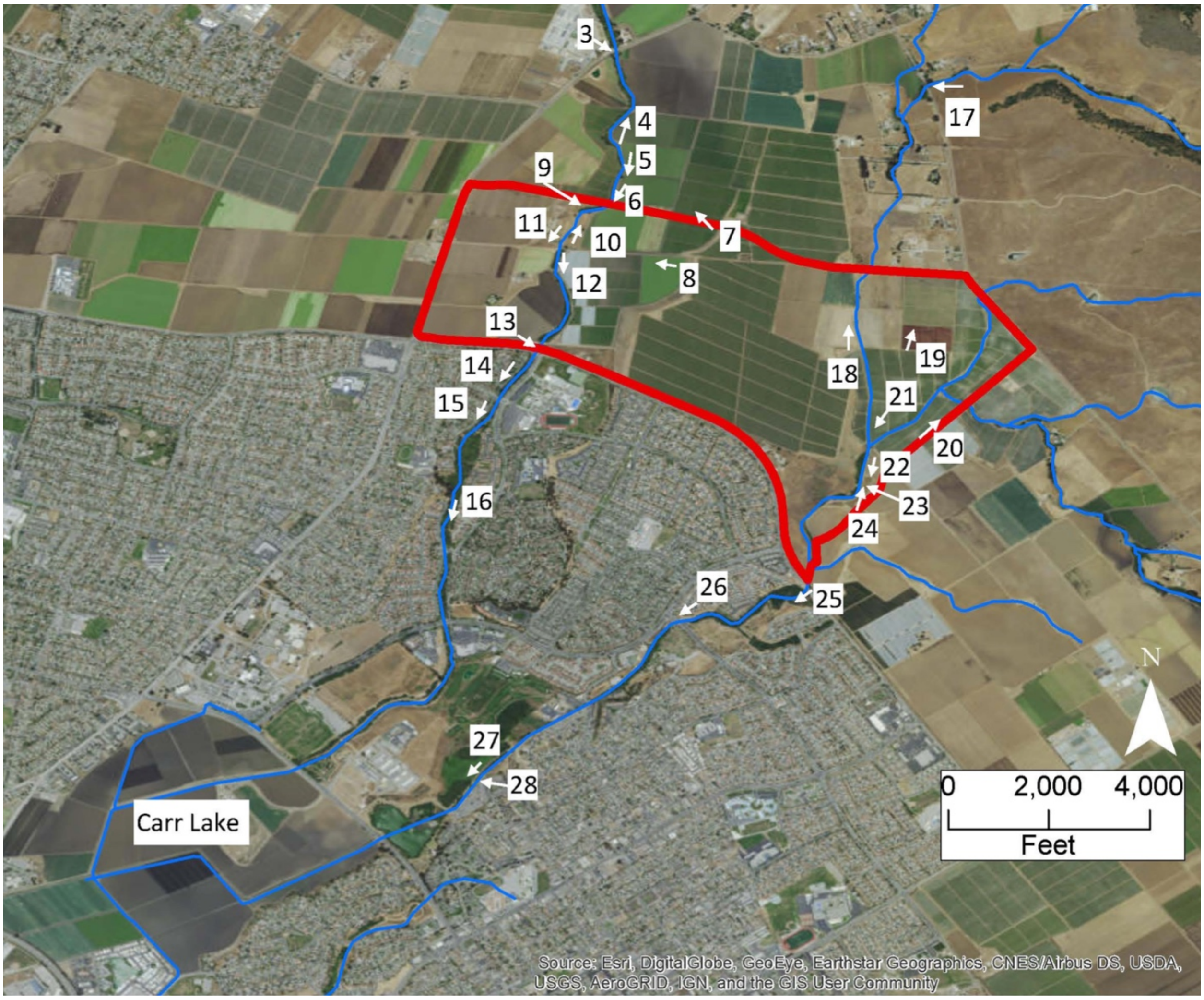


Figure 2-4 CASP field reconnaissance locations. See Appendix A for additional details.

Most creek locations visited during reconnaissance were heavily impacted. Agricultural fields and service roads border many channel banks (**Appendix A**, Figures 4, 5, 6, 18, 20, and 22) and riparian vegetation has been removed to a large extent. Where riparian corridors are present, root structures increase soil cohesion and provide stability to channel banks. Areas with floodplain space directly adjacent to the wetted channel exhibited higher degrees of more natural conditions, which included bar building braiding in-channel and sediment deposition on the floodplain (**Figure 2-5**, **Figure 2-6; Appendix A**, Figures 10, 11 and 25).

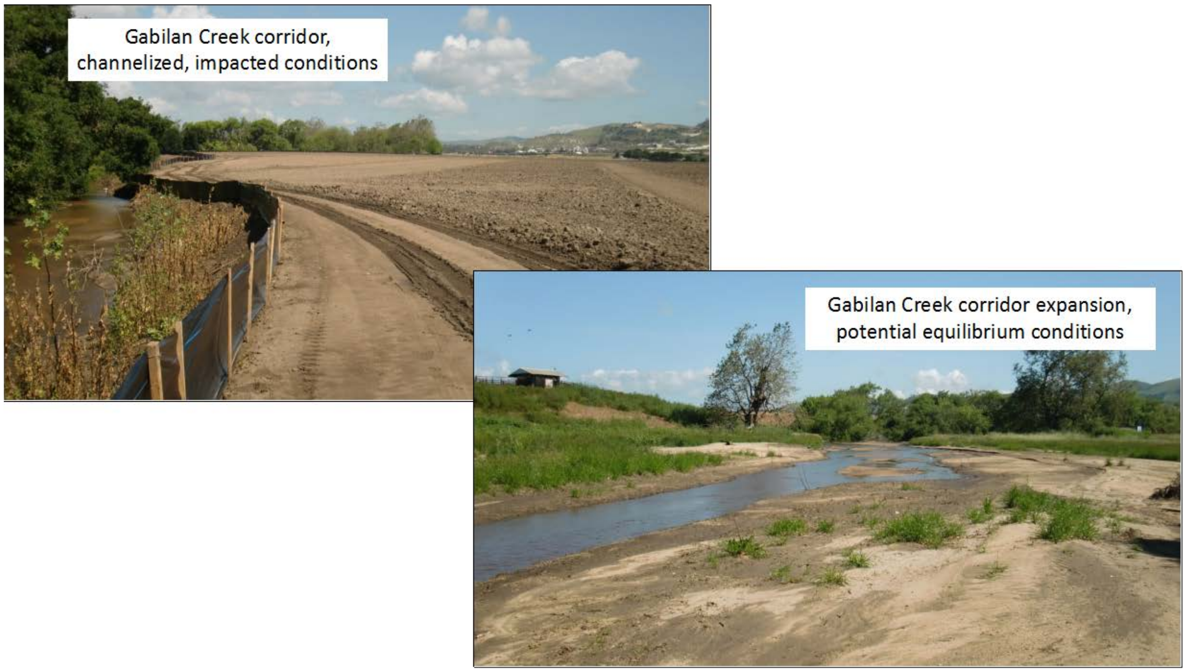


Figure 2-5 Gabilan Creek contains channelized reaches (upper left) and at least one reach with greater channel-floodplain connectivity (lower right).

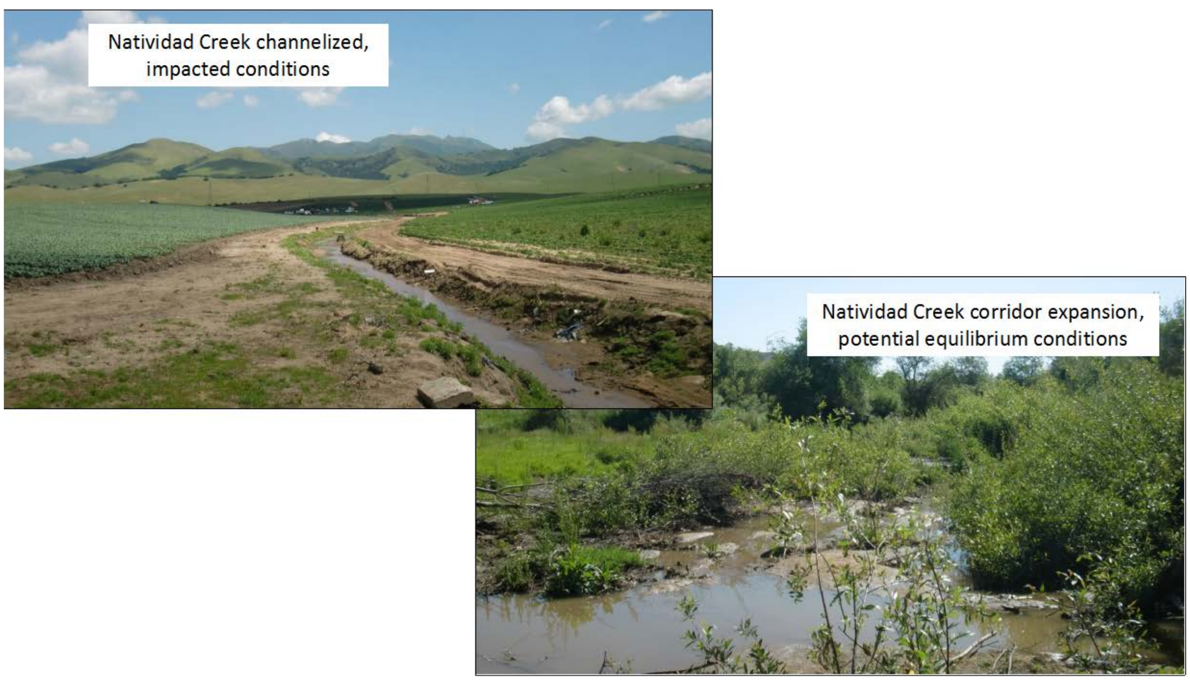


Figure 2-6 Natividad Creek contains channelized reaches (upper left) and channel-floodplain connectivity downstream of Boronda Road (lower right).

Observations recorded in the field provided evidence that both creeks actively responded to rainfall-runoff patterns in wet winter 2016-2017 through variations in discharge and sediment transport loads. High water marks (indicating the highest flows of the season; **Appendix A**, Figures 3, 9, and 12), sediment deposition on floodplains (**Appendix A**, Figures 11, 17, 22, and 23), and channel bar building and braiding (**Appendix A**, Figures 10, 15, and 25) were noticeable effects of recent high flows.

In the Gabilan Creek corridor, sediment loads consisted of fine-grained materials that formed mid-channel bars where possible, indicative of drainages with abundant fine sediments (**Appendix A**, Figures 14 and 15). Sediment loads in Natividad Creek consisted of slightly larger fine-grained materials (**Appendix A**, Figure 23). Natividad Creek corridors are naturally more confined, and agricultural practices exacerbate that condition, so bars and braiding was not as evident. However, once the channel was not confined (**Appendix A**, Figure 25) downstream of Boronda Road, formation of instream bars and braiding was observed (**Figure 2-6**).

On the day of reconnaissance, Gabilan Creek baseflow was estimated as approximately 9 ft^3/sec (**Table 2-2**) at locations 10 and 11 in **Figure 2-4**, whereas Natividad Creek baseflow was estimated as approximately 2 ft^3/sec downstream of the tributary confluence at locations 21 and 22 in **Figure 2-4**.

Table 2-2 Flow characteristics using field estimations.

	Gabilan Creek		Natividad Creek	
	Baseflow	Flood flow	Baseflow	Flood flow
Width (ft)	12.5	150	3	60
Depth (ft)	0.3	3	0.4	3
Velocity (ft/sec)	2.5	5	1.7	5
Discharge (ft^3/sec)	9.4	2250	2.0	900

Notes:
Baseflow was measured using the float method in the field
Flood flows were approximations using high water mark observations obtained in the field

Overbank flows during flood conditions were evident in both creeks. Gabilan Creek contained abundant organic materials (mostly woody branches) that were captured on the upstream side of riparian vegetation (**Appendix A**, Figures 9 and 12). These materials ("high water marks") and floodplain sediment deposition (**Appendix A**, Figure 11) provide evidence of flow depth and lateral extent during recent flood events. Overbank sediment deposition (**Appendix A**, Figure 22) and high water marks (**Appendix A**, Figure 28) were similarly evident in Natividad Creek. Field-based evidence of water depths and extent of floodplain inundation were used to estimate flood flows potentially experienced by the reaches over the wet season (**Table 2-2**).

Differences in watershed size and elevations are likely responsible for a large portion of the variance between estimated baseflows and flood flows (**Table 2-2**). Gabilan Creek to the CASP downstream boundary encompasses about 40.3 sq. mi. (PACE, 2007a) compared to Natividad Creek to the CASP downstream boundary at 9.3 sq. mi. (PACE, 2007a), so Gabilan Creek watershed is four times larger than Natividad Creek with commensurately more runoff potential. Likewise, the orographic effect of mountains can work to "squeeze" precipitation out of moisture-laden clouds in higher elevations. The highest elevation in Gabilan Creek is about 3,100 feet above mean sea level at Fremont Peak, whereas Natividad Creek originates in the lower foothills at an elevation of 1,420 feet (Senter and others, 2017).

Larger watershed area and higher elevations tend to produce more total rainfall, so Gabilan Creek flows should generally persist longer and at higher rates than Natividad Creek, as observed during field reconnaissance. It is important to note, however, that rainfall and stream runoff in any individual storm event could be approximately equivalent within the CASP project area, given the stochastic nature of rainfall events and the likely higher runoff potential of Natividad Creek surficial soils and steeper local hillslopes.

2.3 Hydrology and Surface Water

Average annual rainfall is relatively uniform across the CASP project area, whereas rainfall totals increase in the upland areas of the Gabilan Mountain Range, especially in Gabilan Creek, as a function of elevation. Average annual rainfall at the approximate center of the CASP project area is 15.5 inches based on the most currently-available 30-year record, 1986-2015 (**Figure 2-7**, Prism, 2017). NOAA Atlas 14 precipitation frequency estimates provide a range of forecasted rainfall depths during storms based on precipitation intensity and duration (**Table 2-3**; NOAA, 2017).

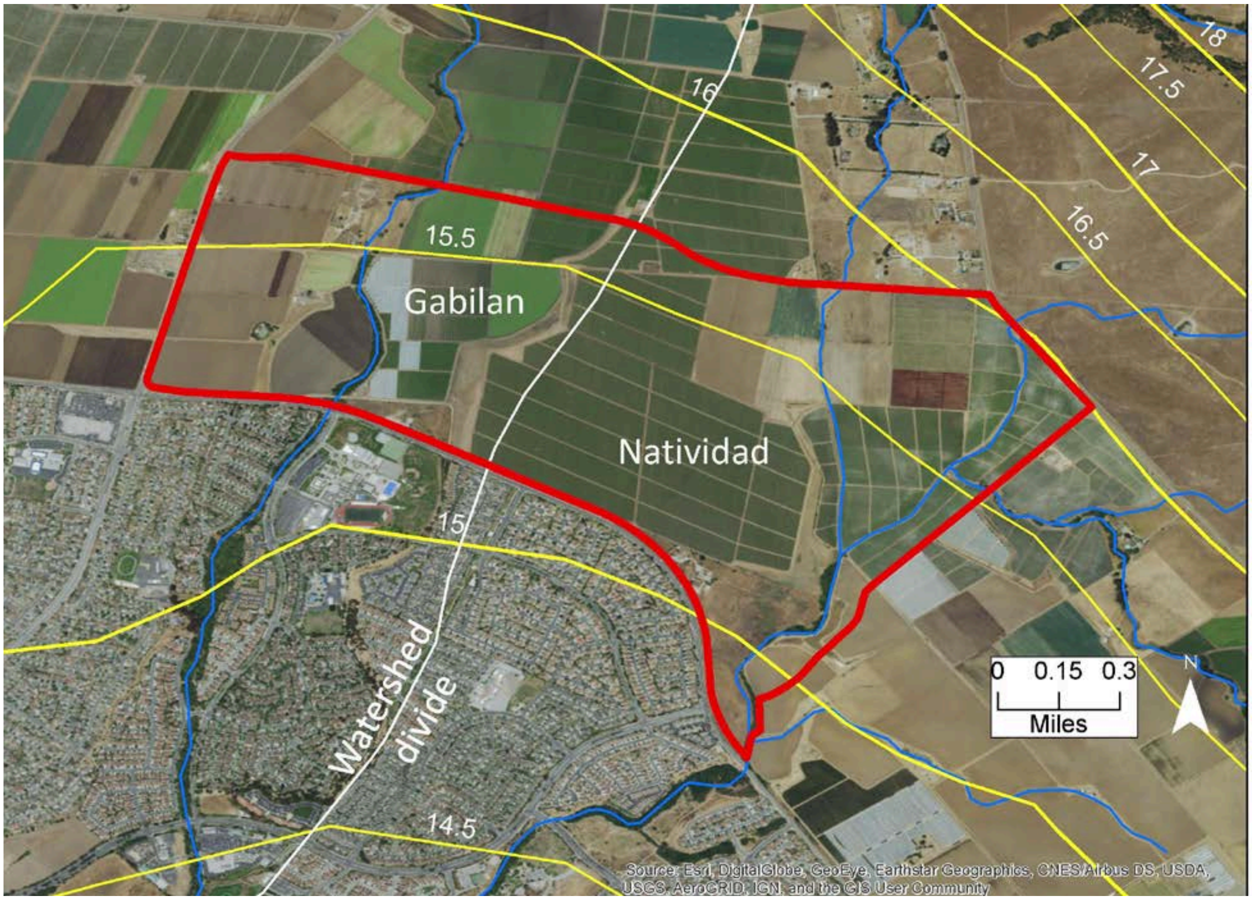


Figure 2-7 Isohyetal map with 0.5-inch rainfall contours. The CASP project area lies almost entirely within the 15 to 16-inch contour intervals. Source: Prism, 2017.

Table 2-3 Precipitation magnitude (inches) and frequency (years) estimates for the CASP project area.

Rainfall depth estimates (inches)

	Return Interval (years)			
Precipitation duration	2	10	25	100
60-min	0.42	0.60	0.75	1.02
6-hr	1.08	1.56	1.90	2.48
24-hr	1.90	2.78	3.38	4.42
3-day	2.77	4.11	5.00	6.48

Source: NOAA Atlas 14 precipitation frequency estimates for the CASP area

2.3.1 Evapotranspiration

Temperature, evapotranspiration (ET), and additional precipitation data were obtained from the North Salinas CIMIS station #116 for a recent period 2003-2015 (**Figure 2-8**). ET varies on a monthly and seasonal basis depending on time of year. The lowest monthly ET average over this period was in December, at 1.46 inches, and the highest was in June, at 4.92 inches, for an annual average of 38.49 inches (CIMIS, 2017). Annual ET rates ranged from 33-43 inches, whereas annual rainfall ranged from about 8-20 inches. Approximately twice the ET rate as rainfall indicates that water deficits are substantial even with a mild annual mean temperature of 54° Fahrenheit, thus the need for groundwater extraction to support regional and local agricultural practices.

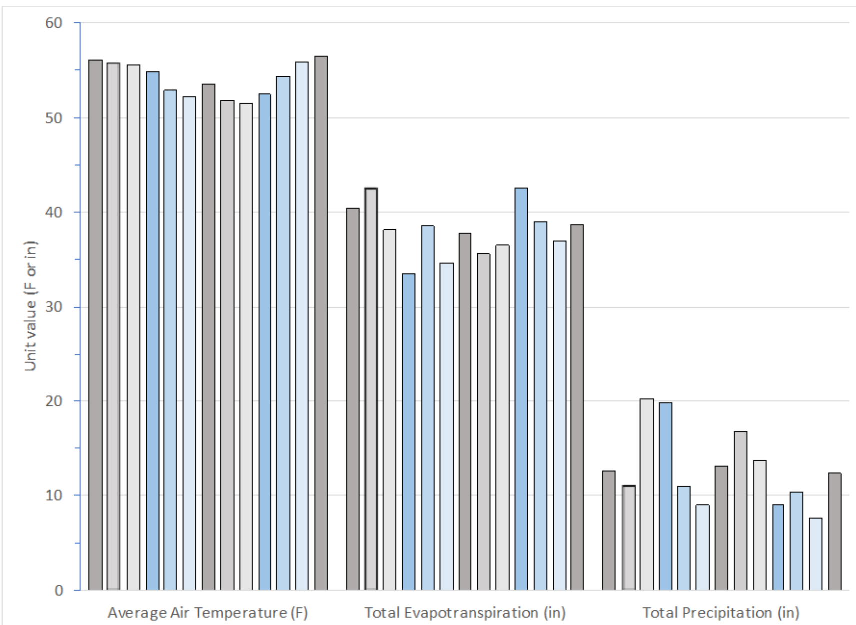


Figure 2-8 Annual mean temperature, evapotranspiration, and precipitation data, with 2003-2015 represented from left to right in each data set. Source: CIMIS, 2017.

2.3.2 Carr Lake as FEMA Floodway

Gabilan, Natividad, and Alisal Creek watersheds drain to Carr Lake (**Figure 2-9**), the largest of a series of historical lakes along the eastern boundary of the Salinas River floodplain. Runoff from these watersheds conveys through Carr Lake via the Reclamation Ditch (Ditch) drainage system to Tembladero Slough and then into Monterey Bay, located approximately ten miles northwest of Salinas. The importance of Carr Lake to the region is most clearly indicated by the designation of the entire footprint of the lakebed as a floodway by the Federal Emergency Management Agency (FEMA FIRM, 2009). This floodway designation means that no changes can be made to the storage capacity of the lakebed without FEMA approval. Carr Lake was first designated as a FEMA floodway in the late 1970's, and continues to provide the City of Salinas and other downstream properties with some of the most important flood attenuation functionality within the regionally significant Ditch drainage system.

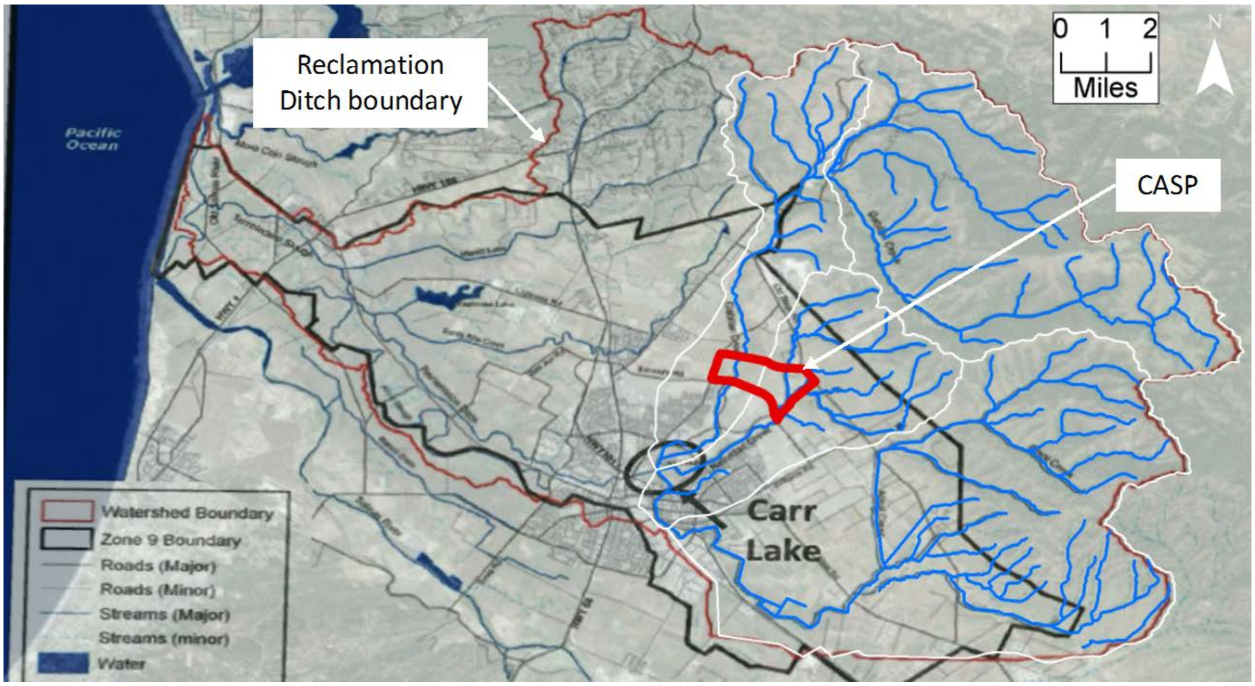


Figure 2-9 Reclamation Ditch drainage area. Overlay source of Reclamation Ditch boundary: Casagrande and Watson, 2006; overlay source of Carr Lake watershed: Senter and others, 2017.

Schaaf and Wheeler (2002), in their Carr Lake flood control study, estimated that a potential 66 percent increase in impermeable surface areas upstream of Carr Lake would result in a 4 to 9 percent increase in peak flows during storm events, with more frequent storm events posing a greater relative increase in peak flows. Moreover, the storm drain system of the City of Salinas operates at or near capacity during large storm events (SWMP, 2004). In the years since these studies, the City has adopted stormwater management policies that include requirements of no increases in peak flow from new development (SWDS, 2013), policies that include developments in the CASP project area.

Gabilan and Natividad Creeks constitute approximately 60 square miles of surface runoff through Carr Lake, with Alisal Creek contributing surface runoff from another 40 square miles. The Ditch system was built in the early 1900s to keep the lakes and upstream lands, such as those in the CASP project area, drained for agricultural use. The Ditch was not built with flood conveyance capacity for a growing City of Salinas in mind, so the amount of discharge the system can attenuate and convey is at its limit, and highlights the importance of Carr Lake as a flood storage area near the upstream extent of the Ditch system (Senter and others, 2017).

Carr Lake itself functions within the Ditch system as a thru-flow detention basin with passive flow controls. Drainage out of the lakebed under the North Main Street bridge under low flow conditions exits through a 36-inch diameter pipe positioned below a much larger double 8 ft x 8 ft box culvert that activates once water surface elevations increase enough. The 36-inch outlet is undersized compared to those further downstream and therefore restricts peak flows and downstream flooding (Schaaf & Wheeler, 2002). The current configuration limits outflows during small storms to the capacity of the existing 36-inch culvert, at an invert elevation of 30.54 feet, until lakebed water surface elevations reach the bottom of the box culvert invert elevation of 35.98 feet (Ballman and others, 2015). This results in water surface elevations within the lakebed over 5 feet deep at the outlet prior to an increase in outflow discharge, and creates a large volume of water that is limited to a maximum discharge in the range of 60-70 ft^3/sec through the 36-inch culvert.

These limitations to outflows from Carr Lake combined with the flat, low slope configuration of the lakebed (which has been under agricultural use for decades) means that flood inflows spread out relatively evenly across lakebed land surfaces at a given elevation, resulting in two important consequences for flood conditions. First, as just discussed, the lakebed water surface elevation remains shallow for an extended period, so outflow remains in the 60-70 ft^3/sec range for an extended period too, regardless of how large or small upstream inflows are, until water surface elevations are high enough for the box culverts to become engaged. Second, the same principles apply at the end of a flood event, so standing water will remain for days as a function of the outflow capacity of the low flow culvert. Inefficiencies in the flood routing capacity of the lakebed combined with inefficiencies of the North Main Street culvert to move flows downstream as peak discharges recede have been noted in almost every report that has focused on Carr Lake over the past 40 years (Senter and others, 2017). Restricted flows thus result in partial flooding of the lakebed during most storm events. During a 2-year return interval flow event (i.e. a discharge that occurs on average every 2 years), more than half of the lakebed can be flooded. During a ten-year event, nearly 90% of the lake bed is inundated and in a 25-year event, the entire lakebed, including the

Sherwood Lake Mobile Home Park, may be inundated. During a 100-year event, water elevations could spill onto Highway 101 and into parts of downtown Salinas (Schaaf & Wheeler, 2002).

The 1995 and 1998 El Nino wet winter seasons illustrate how substantial flooding and property damage can occur during high rainfall/heavy flooding conditions. During the 1995 water year, the City of Salinas received 20.1 inches of rainfall, approximately 6 inches above the annual average. Rainfall in the southern half of the Salinas Valley was more substantial (25.3 inches in King City) which caused the Salinas River to peak at 95,000 cfs at the USGS #11152500 Salinas River near Spreckels gage. Salinas River high flows overtopped its banks at several locations sending river water onto flat areas within Salinas. Meanwhile, Carr Lake was completely flooded due to heavy runoff from the Gabilan, Natividad, and Alisal Creek watersheds. Similarly, in water year 1998, the City of Salinas received 30.1 inches of rain (second highest total on record). Detained flows in Carr Lake reached an elevation of 42.9 feet, flooding the Sherwood Lake Mobile Home Park for 11 days. Properties, agricultural fields, and the drainage system itself were damaged (Casagrande and Watson, 2007) because of so much rainfall and subsequent runoff.

In addition to flood routing and outflow capacities, the lakebed channels and the Ditch downstream of Carr Lake are impacted by sediment transport from the upper watersheds (identified as mostly from agricultural fields; SWMP, 2004), which requires regular maintenance and dredging (Casagrande and Watson, 2006). Studies predict that conversion of land from row crops to residential will result in reductions of sediment loads (Woodward and Foster, 1997), so development of the CASP project area may result in sediment load reductions at Carr Lake and the downstream Ditch system.

In summary, Carr Lake is critical as a FEMA flood control detention/attenuation basin to the City of Salinas and surrounding areas. The Ditch system cannot accommodate any additional stormwater loading, and City of Salinas neighborhood stormwater drain systems are also at capacity. Any impacts (whether positive or negative) that occur in the CASP project area will translate directly downstream into and through Carr Lake.

2.3.3 PEAK FLOW ESTIMATES

Peak flow estimates under existing conditions were modeled and reported by PACE (2007a) at some CASP project boundaries (**Table 2-4**). A review of their supporting documentation suggests that all contributing areas upslope of CASP project boundaries were included in modeling runs. Gabilan Creek results indicate that the CASP project area contributes a minor amount of runoff into the creek corridor between the upstream inflow at future Russel Road and the downstream boundary at Boronda Road, with the largest increase associated with the long-duration 72-hour event (**Table 2-4**). This result seems reasonable, as high infiltration capacities associated with the historical floodplain eventually slows as soils become fully saturated (**Figure 2-3**; also Carpenter and Cosby, 1925; **Appendix A**, Figure 1).

Table 2-4 Modeled peak flows under existing conditions.

Modeled Discharge Location	Peak flow Rainfall duration (hours), return interval (years) 24 h, 10 yr	 24 h, 100 yr	 72 h, 100 yr
Gabilan Creek	*cfs*	*cfs*	*cfs*
Upstream future Russell Road extension	2236	11414	13397
Downstream boundary @ Boronda Road	2283	11423	13707
Natividad Creek			
Upstream boundary @ future Russell Road extension	284	1006	1357
Upstream boundary @ future Constitution Blvd extension	124	635	973
Downstream boundary @ Boronda Road	513	2020	3089

Natividad Creek model results (PACE, 2007a) reported at the Boronda Road downstream extent include about 20% of flow of unknown origination, likely because the tributary that drains across Old Stage Road (**Figure 2-2**) was not included in reported results. Natividad Creek hillslopes are steeper, closer to the creek corridor, and soils are less permeable than those in Gabilan Creek (**Figure 2-3**). These features suggest that runoff rates in Natividad Creek may be higher relative to Gabilan Creek runoff rates in the form of flows peaking more quickly at higher velocities during intense rainfall events. On the other hand, total discharge at the downstream boundary is substantially lower in Natividad than Gabilan for each modeled flow by about 4-5 times (**Table 2-4**), as would be expected with watershed area and elevation differences.

2.3.4 Existing Stormwater Conveyance System

There are no existing City of Salinas storm drain lines upstream of or within the CASP project area. Under existing conditions, runoff flows toward Gabilan Creek or Natividad Creek according to general overland flow pathways (**Figure 2-2**). Runoff downstream of the CASP project area is conveyed through the Ditch system either as flows in the creeks or into the City of Salinas storm drain system as defined in the City of Salinas Stormwater

Master Plan (SWMP, 2004; **Figure 2-10**; upgrades or additions to the storm drain system since 2004 are not represented in this figure).

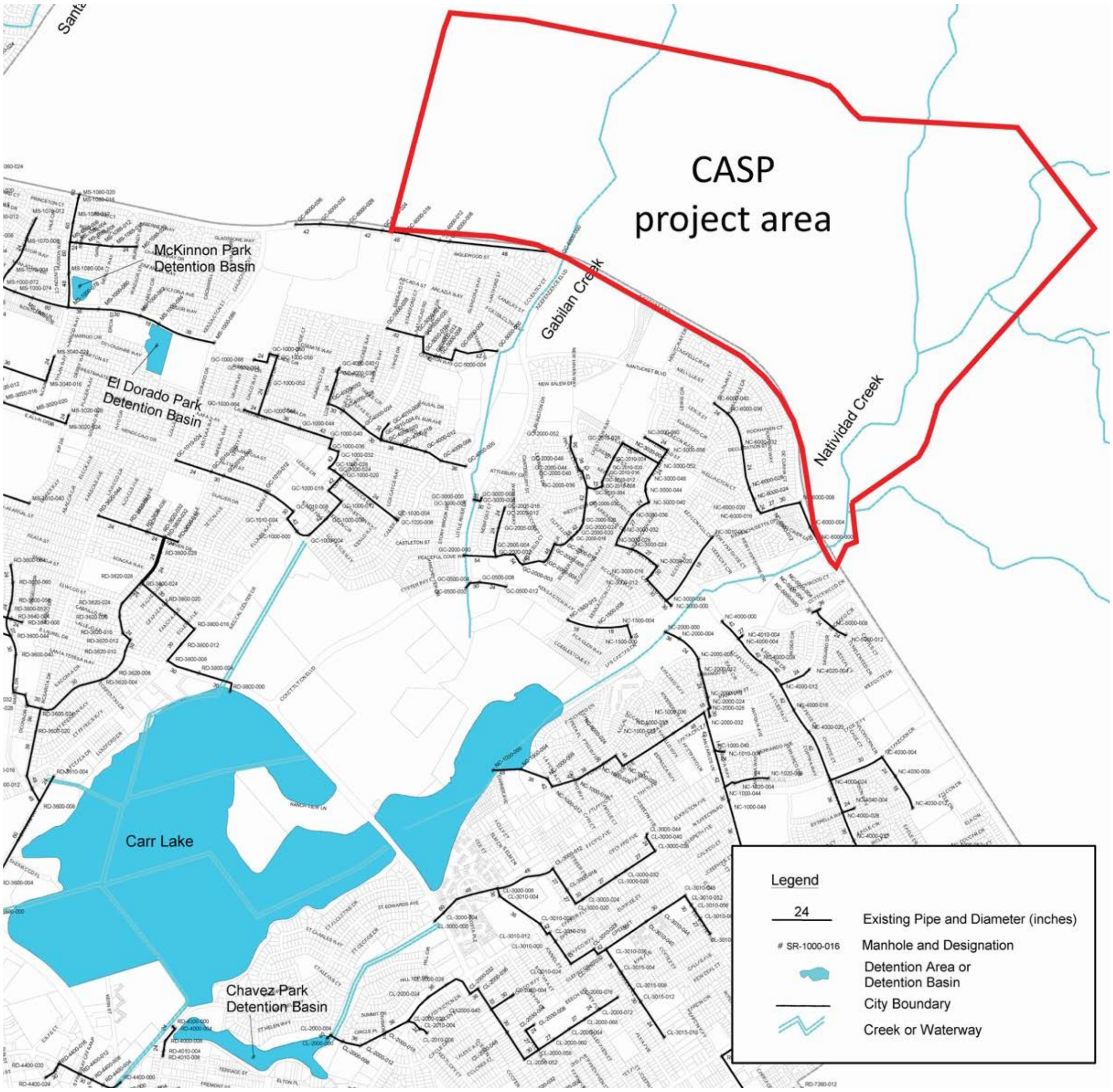


Figure 2-10 Approximate boundaries of the CASP project area and City of Salinas storm drain system, circa 2004. Source: SWMP, 2004.

The City of Salinas Stormwater Master Plan (SWMP, 2004) makes the following statements regarding the potential effects of urbanization in the CASP area:

- Existing storm drains within Salinas are at maximum capacity and cannot accept increased peak flows without causing additional flooding.

- The Reclamation Ditch system does not have capacity for additional runoff.
- Detention storage within the CASP project area will be required for all new development that contributes runoff to Gabilan and Natividad Creeks to avoid adversely impacting drainage through Carr Lake and the Reclamation Ditch system.
- Depending on the location of future detention basins, detention storage areas could be drained to an existing 42- and 48-inch pipe in Boronda Road between El Dorado Drive and Gabilan Creek that currently conveys agricultural runoff from north of Boronda Road to Gabilan Creek. The hydraulic capacity of the pipe is 50 cfs for the 42-inch segment and 120 cfs for the 48-inch segment.
- The eastern portion of the area north of Boronda Road and west of Williams Road drains to Natividad Creek. There are no existing City storm drain facilities with the capacity to serve this area. Detention storage within the CASP project area will be required prior to discharge to Natividad Creek or its tributaries to avoid adversely impacting drainage through Carr Lake and the Reclamation Ditch system.

In summary, the Ditch system at and downstream of Carr Lake cannot accommodate additional stormwater loading and the City of Salinas stormwater drain systems are at or very near capacity during flood events. All runoff from the CASP project area will need to be managed within the project area.

2.4 FEMA Flood Zones

Predicted flood zones located in the CASP project area in the Gabilan and Natividad Creek corridors are shown on FEMA FIRM panels 06053C0226G, 06053C0228G, and 06053C0230G (FEMA FIRM, 2009; **Figure 2-11**). Gabilan Creek flood flow predictions were modeled by FEMA using flow data from the USGS #11152600 Gabilan Creek near Salinas gage (out of service as of October 2014). Natividad Creek flood flow predictions were approximated, which is a typical FEMA practice for smaller, ungaged watersheds.

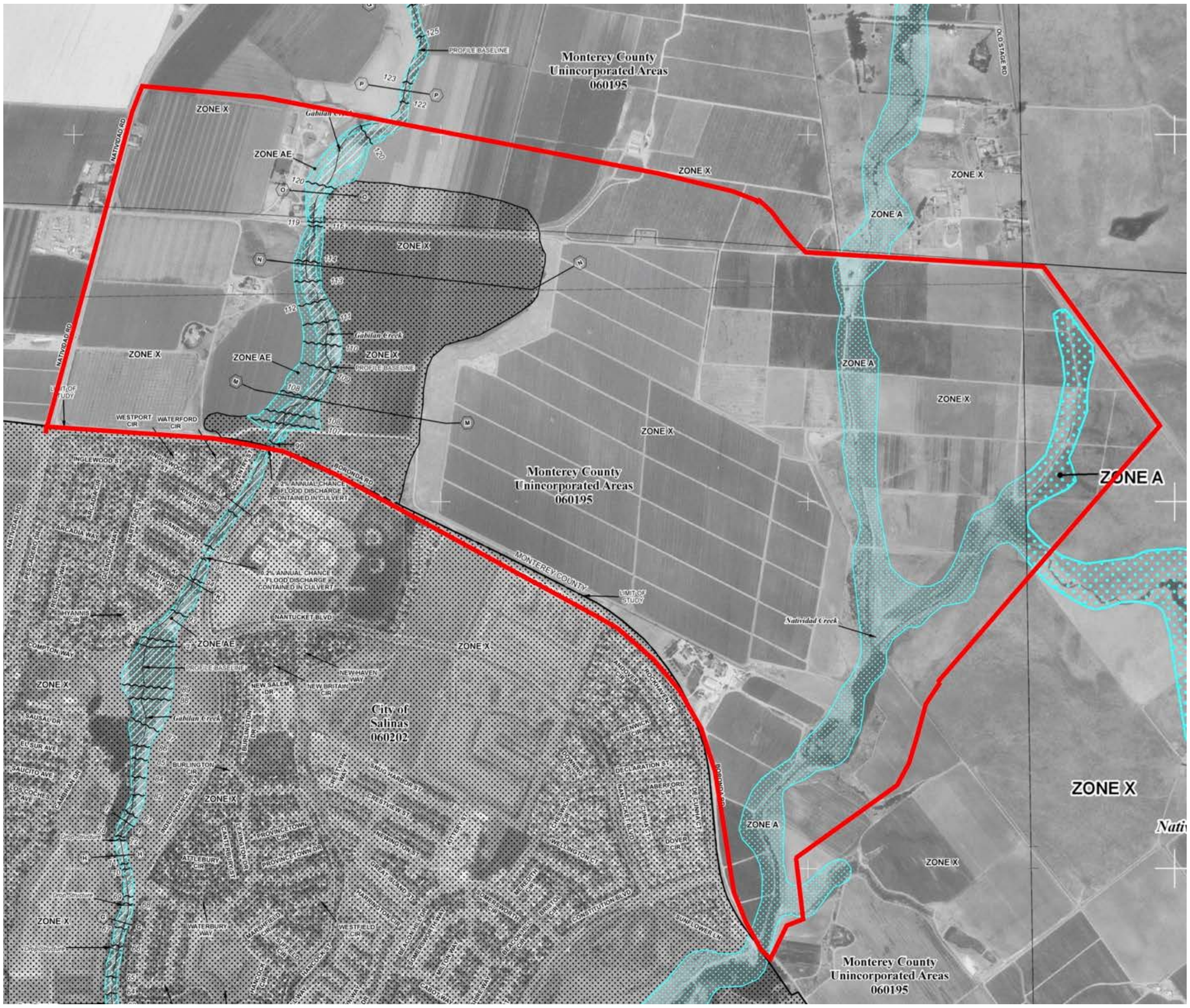


Figure 2-11 FEMA zones within the CASP project area.

Delineated flood zones include areas adjacent to both creek channels; these are depicted in an aqua/green color along all corridors (**Figure 2-11**). Along Gabilan Creek, Zone AE indicates areas inundated by a 1% annual chance flood (i.e., a 100-year flood event), and where water surface elevations (in feet) have been determined using modeling techniques. Those elevations can be seen in **Figure 2-12** next to cross-section lines bisecting the creek. Along Natividad Creek, Zone A indicates areas that will be inundated by a 1% annual chance flood, but for which no water surface elevations have been calculated because of the approximation technique used for ungaged watersheds. Shaded Zone X areas are Special Flood Hazard Areas anticipated to be limited to less than one-foot of flooding depth during a 100-year event and/or subject to flooding between the 100- and 500-year events. Changes to land surfaces in these zones will trigger required FEMA map revisions, with flood insurance requirements based on modeled flood conditions using final grading plans for the CASP project area.

Areas that are designated as unshaded Zone X are not expected to flood up to the level of a 500-year event. Changes to land surfaces in unshaded Zone X areas do not trigger FEMA map revisions and no flood insurance requirements are imposed on structures in these areas.

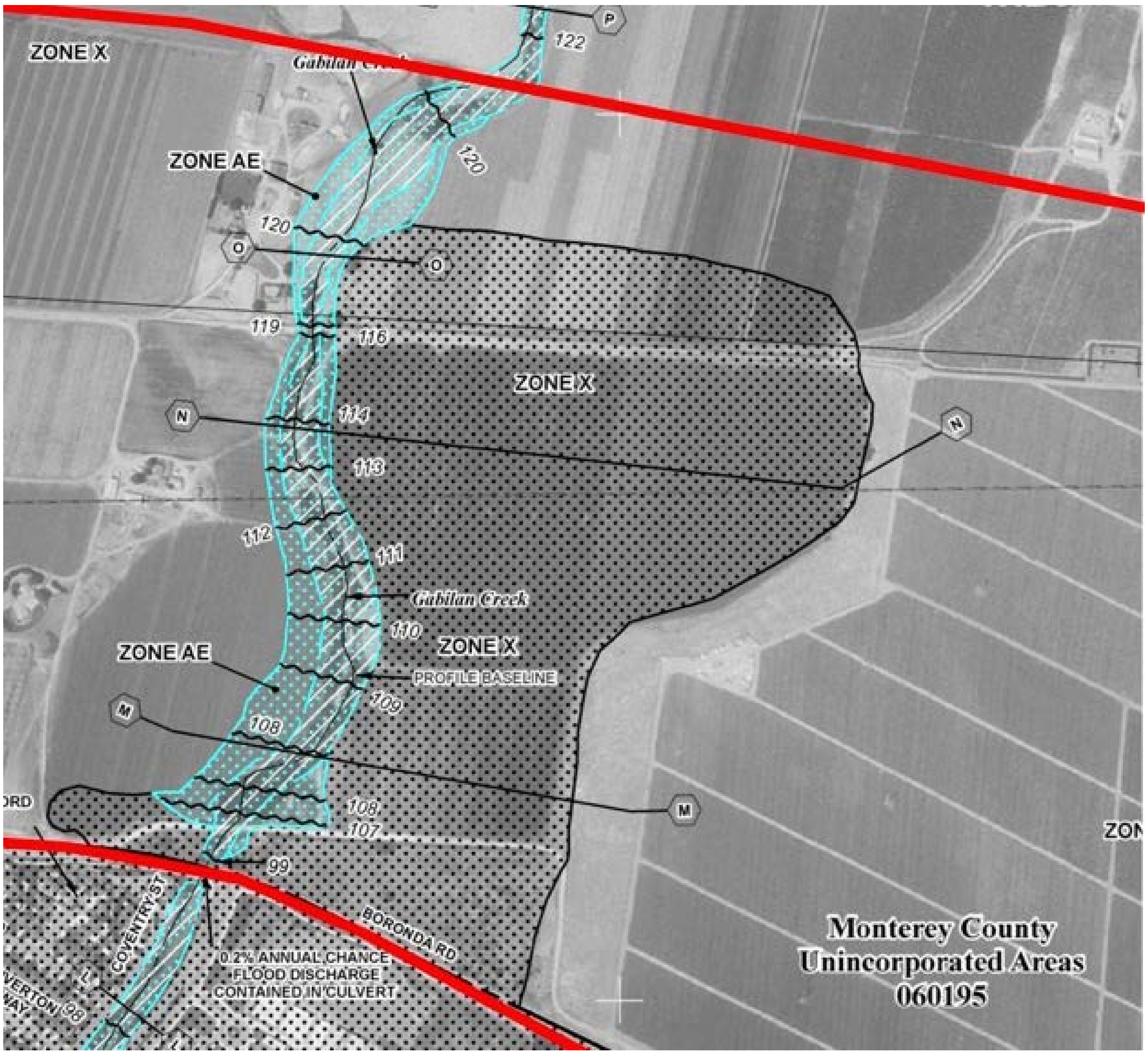


Figure 2-12 Detail of FEMA-predicted flooding in Gabilan Creek within the CASP project area, including delineations of Zone AE (flood zone), shaded Zone X (Special Flood Hazard Area), and unshaded Zone X (no flood insurance requirements).

2.5 Groundwater Quantity and Quality

The California Sustainable Groundwater Management Act (SGMA) was passed by the California State Legislature in 2014 (SGMA, 2014). As required by the SGMA, a Salinas Valley Groundwater Basin planning process is underway (SVGBP, 2017), with local stakeholders working to create a collaborative plan for sustainable groundwater use in the Salinas Valley Basin by 2020. The CASP project area is located in the East Side aquifer sub-area of the Salinas River Groundwater Basin (**Figure 2-13**). Surficial soils are primarily alluvium formed by alluvial fan deposits originating from the Gabilan Mountain Range (USDA-SCS, 1978), with incomplete separation of the aquifers from the soil surface by aquitards that are generally clay layers that have very low permeability and infiltration capacities.

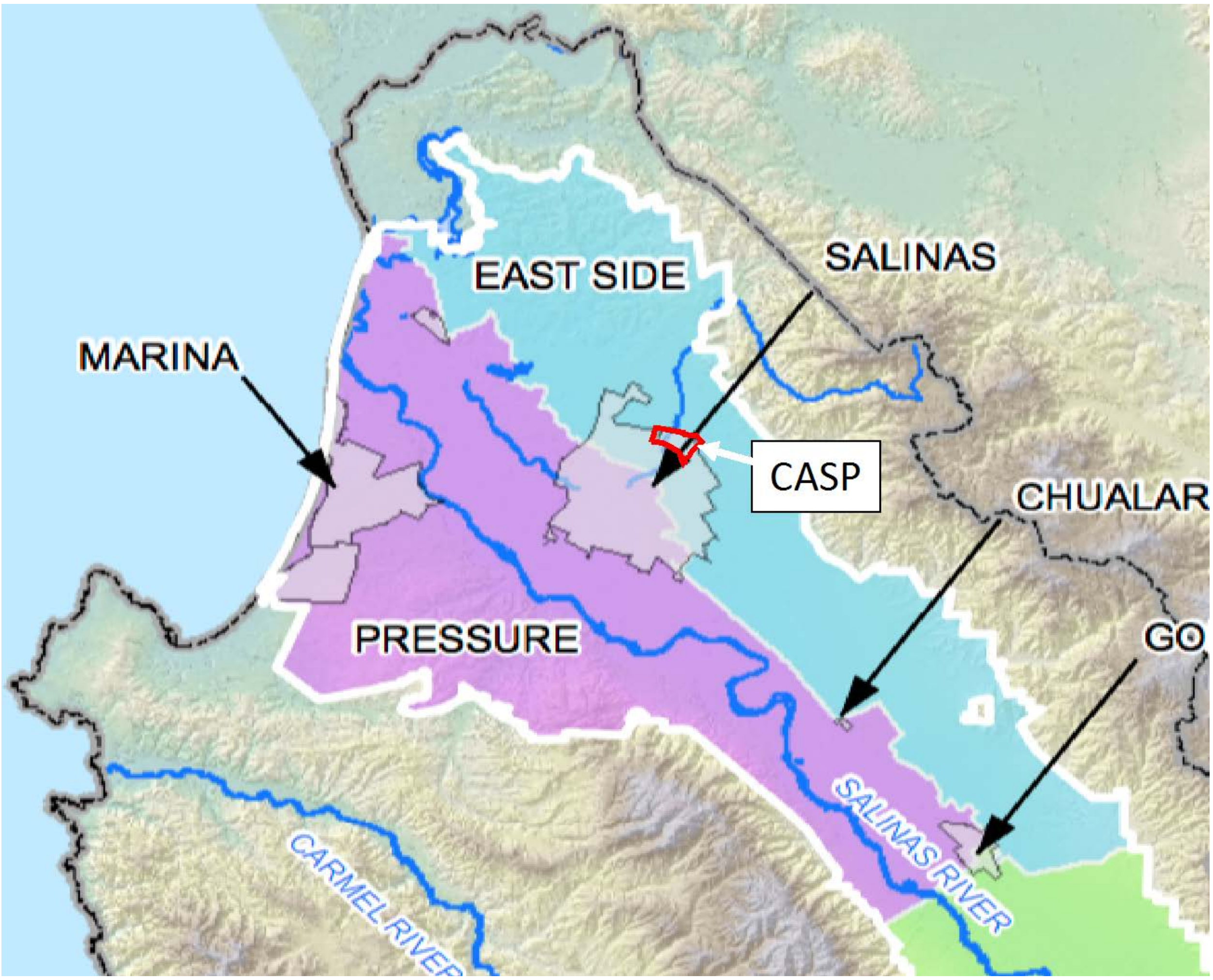


Figure 2-13 Groundwater aquifer delineations in northern Salinas Valley. CASP is located within the East Side aquifer. Source: MCWRA, 2013.

Groundwater underlying the CASP project area has direct connection to the soil surface and was measured at depths of 90-100 feet below ground surface in August 2013 (**Figure 2-14**, MCWRA, 2013; most recent publically available data). Groundwater elevations in the northern Salinas Valley have declined substantially from decades of groundwater pumping, primarily for agricultural use, including in the East Side aquifer area. Acceleration of groundwater recharge into the East Side aquifer could potentially be accomplished by diverting surplus flows in all years, and especially in wet years, onto undeveloped land areas for groundwater recharge purposes. Areas with HSG A and B soils and high infiltration rates are most ideal for use as recharge areas. Within the CASP project area, areas adjacent to Gabilan Creek (**Figure 2-3**) would be best-suited for groundwater recharge purposes, with areas directly adjacent to Natividad Creek also well-suited for groundwater recharge purposes.

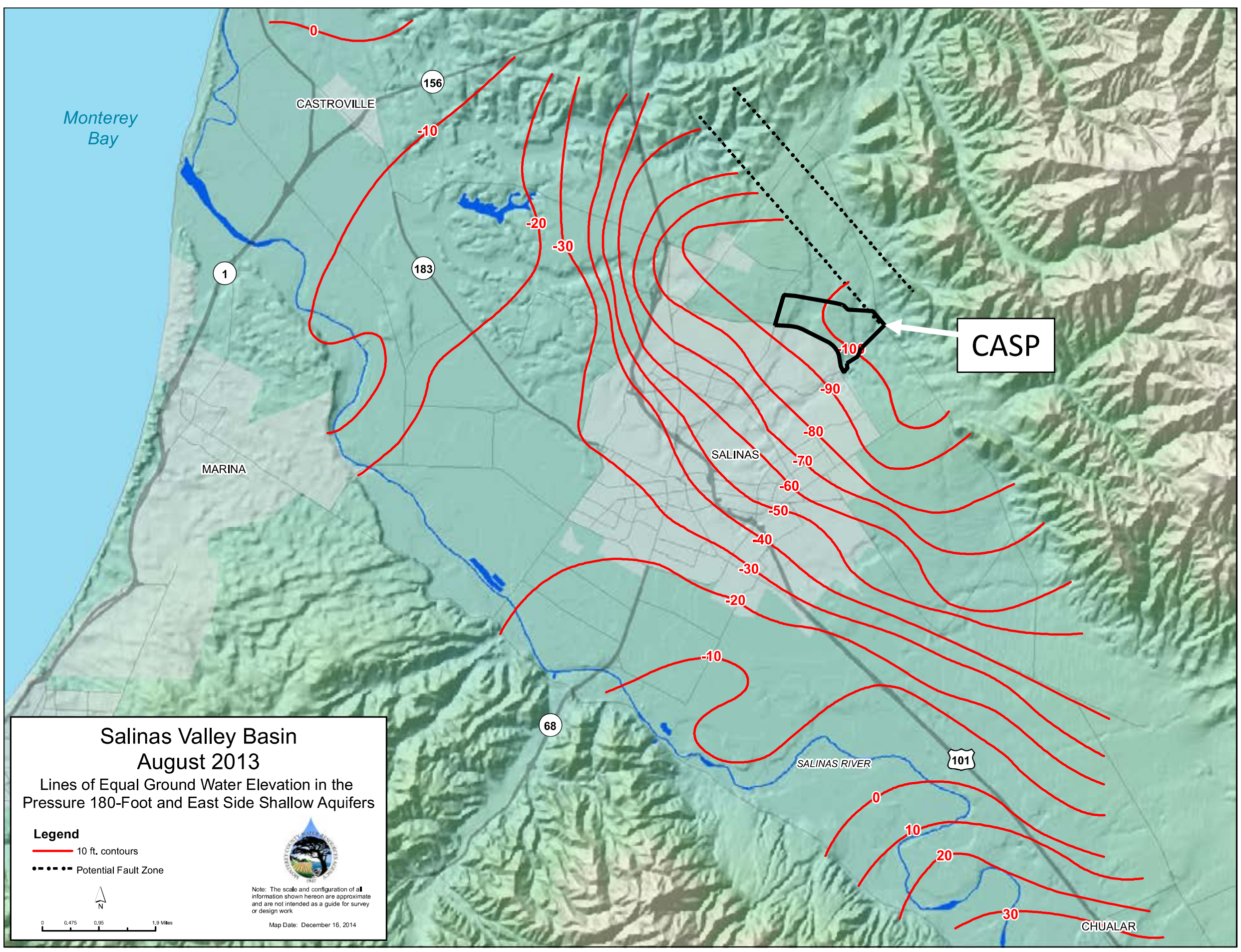


Figure 2-14 Groundwater elevations in the Pressure 180-foot and East Side shallow aquifers, August 2013. Source: MCWRA, 2013.

Groundwater pumping near coastal areas can cause seawater intrusions as fresh water is withdrawn from aquifers. The extent of seawater intrusion in the Salinas River area is to-date limited to the Pressure Aquifer west of Highway 101, and has receded in recent years (**Figure 2-15**, MCWRA, 2014; most recent publically available data). There are no impacts related to seawater intrusion on the aquifer underlying the CASP project area. However, any recharge of the aquifers via infiltration from overland flows and stream flows in the Gabilan and Natividad Creek watersheds supports groundwater quality in the underlying aquifers and helps to limit seawater intrusion to the west. Therefore, maintenance of recharge to the groundwater basin is an important priority for Salinas and the greater Salinas Valley.

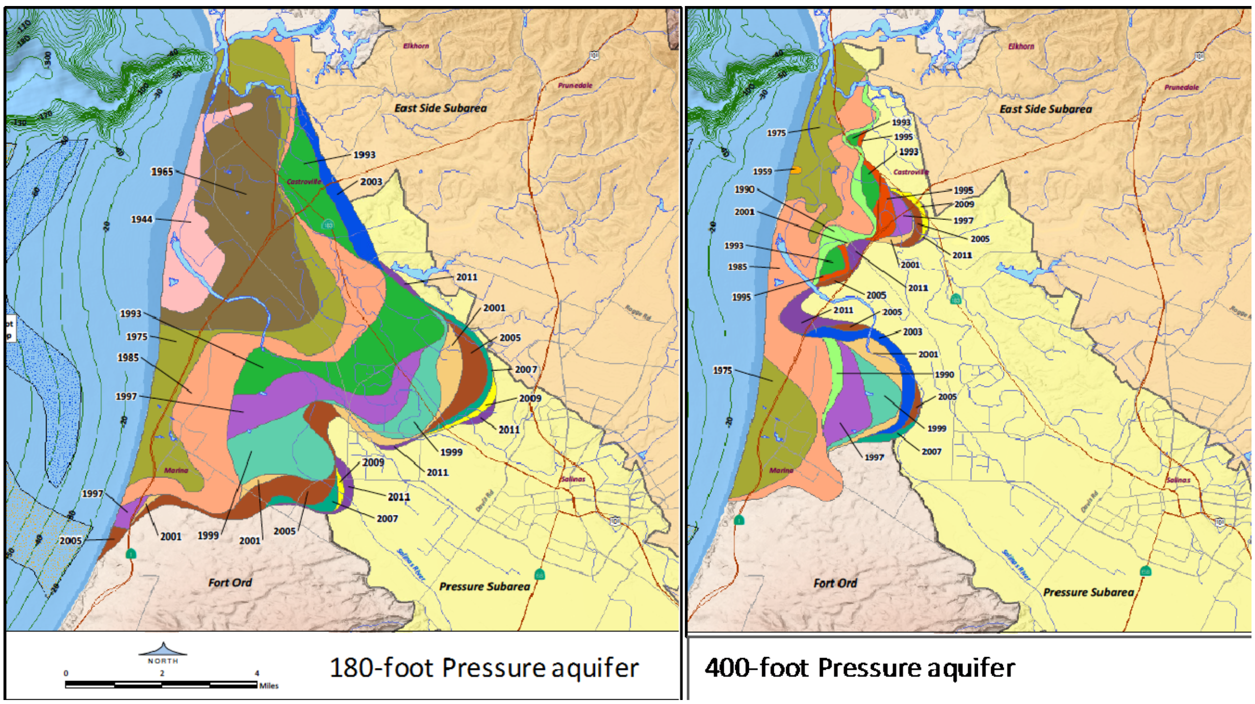


Figure 2-15 Historic (1944-2011) seawater intrusion extents into the shallow 180-Foot Pressure aquifer and deep 400-foot Pressure aquifer. Source: MCWRA, 2014.

Nitrate contamination of shallow aquifers used for water supply is a significant problem in the Salinas Valley. "Technical Report 4: Groundwater Nitrate Occurrence" (Center for Watershed Sciences, 2012) states that numerous water supply wells in the Salinas Valley have been "closed" due to nitrate contamination that exceeds the nitrate drinking water MCL (maximum concentration limit) of 45 mg/L. The report identifies rising trends in groundwater nitrate concentrations from 1978 through 2007, with some East Side nitrate concentrations increasing from 40 mg/L to 105 mg/L during that period. The California

GAMA special study (Moran et al., 2011) on nitrate fate and transport in the Salinas Valley states that geochemical and isotopic results for groundwater samples containing nitrate have a signature consistent with inorganic fertilizers, demonstrating that the primary source of nitrate contamination of Salinas Valley groundwater is agriculture.

Groundwater quality data reported in the Monterey Bay and Salinas Valley Groundwater Ambient Monitoring and Assessment study (Kulongoski and Belitz, 2007) indicates that water quality for the deep East Side 400-foot aquifer in the vicinity of the CASP plan area meets drinking water standards for all constituents except Radon-222.

The impact of agricultural and urban land uses on groundwater quality is heavily dependent on the management of those activities, including farming practices and use of Best Management Practices in urban settings to limit the addition of nitrates and other compounds to streamflows and infiltrating waters.

2.6 Surface Water Quality

Any overland flow runoff from the CASP plan area currently flows directly into Gabilan Creek and Natividad Creek via surface runoff patterns (**Figure 2-2**), evaporates, or infiltrates into soils. Both creeks flow into the Carr Lake lakebed and then pass downstream through the Reclamation Ditch system. Multiple agencies have conducted water quality monitoring within the Ditch watershed (**Figure 2-9**). CSU Monterey Bay (Casagrande and Watson, 2007) summarized water quality conditions at various monitoring sites upstream of Carr Lake in their evaluation of the potential benefits of the conversion of Carr Lake lakebed into multiple-use park space (also see Senter and others, 2017 for discussion of hydrologic constraints and opportunities associated with potential future land uses within the lakebed). Trends in surface water quality conditions include the following:

- Water quality conditions are variable, but generally are degraded by intensive agriculture and urban land uses;
- During summer and when water is present, dissolved oxygen, nutrients, suspended sediment, and fecal coliform concentrations commonly exceed established water quality objectives; and
- During winter, high suspended sediment and nutrient concentrations are common.

CSU Monterey Bay measured streamflow and water quality in the Ditch as part of their Central Coast Watershed Studies program (Inman and others, 2014). Sampling data downstream of Carr Lake were obtained from two sites; where Boronda Road intersects the Ditch and where Davis Road intersects the Ditch on the outskirts of Salinas to the west. Measurements taken between November 11 and December 2, 2014 are summarized in **Table 2-5**. Dissolved oxygen levels (DO) were robust, and salinity and TDS (total dissolved solids) were low; each indicating acceptable water quality within these parameters. High turbidity values are likely correlated to rainfall-related runoff, as would be expected (Inman and others, 2014).

Table 2-5 Summary of Reclamation Ditch Water Quality Measurements.

Reclamation Ditch
Water Quality Measurements - Mean of Samples on Dates

Location / Date	TDS (mg/L)	Salinity (ppt)	DO (mg/L)	Turbidity (NTU)
Boronda Road				
11/11/14	1130	0.4	7.8	n/a
11/13/14	452	0.1	9.1	n/a
11/18/14	376	0.3	10.7	33
11/25/14	357	0.3	11.7	90
12/2/14	41	0	12.1	700
Davis Road				
11/11/14	1082	0.4	9.4	n/a
11/13/14	336	0.1	8.9	n/a
11/18/14	909	0.3	10.6	27
11/25/14	882	0.3	11.7	90
12/2/14	32	0	12.5	130

Sampling performed by CSU Monterey Bay Watershed Institute

Agricultural return flows from upstream field sources make up a portion of flows into the Carr Lake lakebed throughout the year. In yearly dry-season summer conditions, such flows may constitute most or all flows entering Carr Lake (Ballman and others, 2015). Agricultural return flows and other anthropogenic activities carry various pollutants that are detrimental to water quality. Gabilan and Natividad Creeks, as well as Alisal Creek, have listed 303(d) impairments to aquatic waters entering Carr Lake (**Table 2-6**).

Table 2-6 Listed 303(d) impairments to aquatic waters entering Carr Lake. Source: CCRWQCB, 2010.

Pollutants impairing waterbodies that enter Carr Lake.

Creek	Ammonia (Unionized)	Escherichia coli (E. coli)	Fecal Coliform	Low Dissolved Oxygen	Nitrate	pH	Sediment Toxicity	Sodium	Temperature, water	Turbidity	Unknown Toxicity
Gabilan	x		x		x	x	x			x	x
Natividad	x	x		x	x	x	x		x	x	x
Alisal			x		x			x			

Pollutants include those categorized as nutrients, pathogens, toxicity, sediment, and miscellaneous

3 PROPOSED PROJECT DESCRIPTION

3.1 Project Plan

The land use plan and proposed alignments of roads, developments, parks, schools, and runoff retention basins are summarized in **Figure 3-1**. The CASP project area contains approximately 760 acres of land, which is proposed to be utilized for 320 acres of residential development, 44 acres of mixed use commercial development, 187 acres of streets, and 209 acres of playing fields, linear parks, creek corridors, and other open spaces. Additional details regarding the project plan are provided in the City of Salinas Draft Central Area Specific Plan (CASP Draft, 2013) and in the Notice of Preparation for this EIR (CASP NOP, 2017).

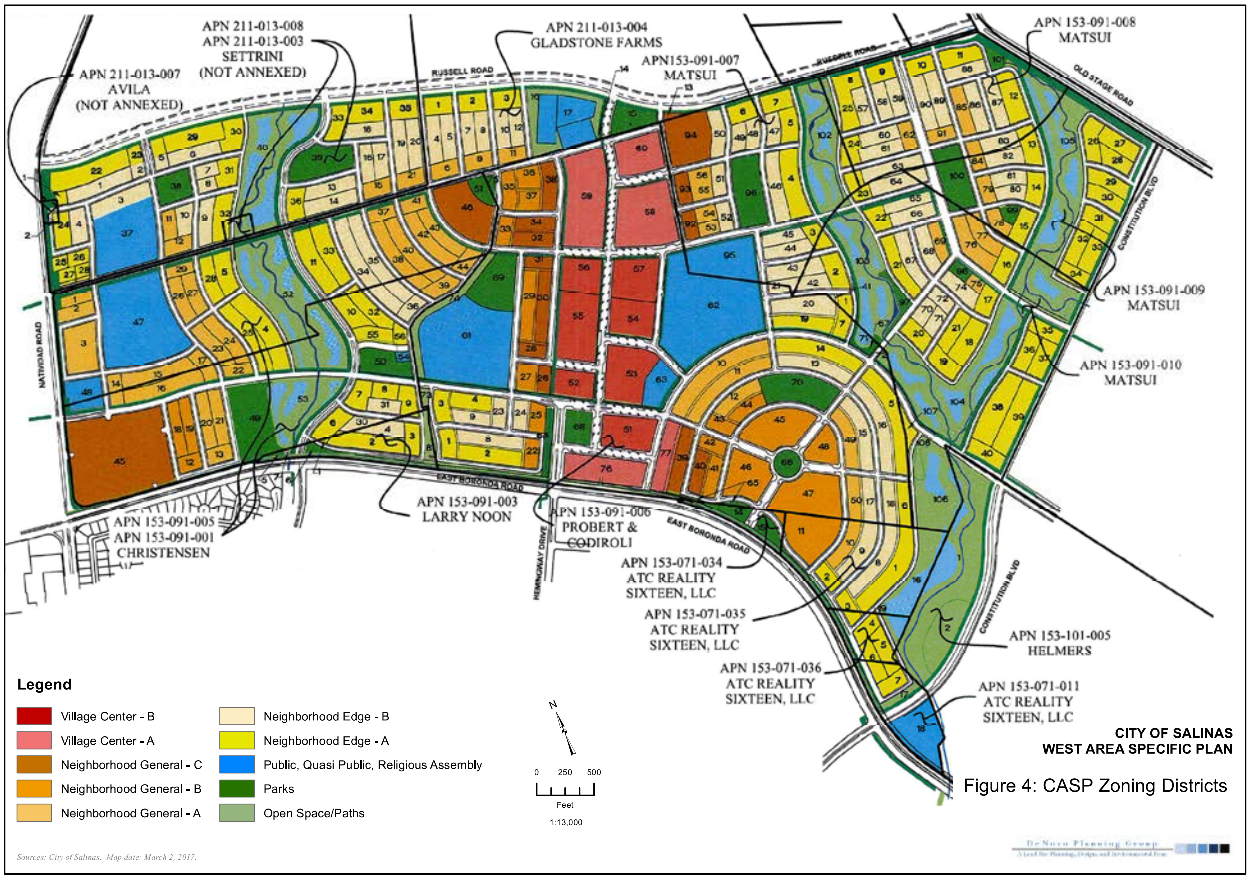


Figure 3-1 CASP proposed site plan. Source: CASP NOP, 2017.

Topography within the CASP project site will require extensive grading to create a developable site for the proposed site plan (**Figure 3-1**), especially at transition slopes between existing bluffs and at the creek corridor boundaries (**Figure 3-2**, CASP Draft, 2013). Major streets and neighborhoods will be built along constructed grading slopes. Final grading plans are expected to maintain existing overland drainage patterns and to tie in to existing conditions to the greatest degrees possible, and will be submitted to the City Engineer for review and approval prior to construction (CASP Draft, 2013). Maximum cuts and fills of up to 30 feet are anticipated, and as much as 4 million cubic yards of earth could be moved within the CASP project area. Additional details were not available to fully interpret **Figure 3-2**.

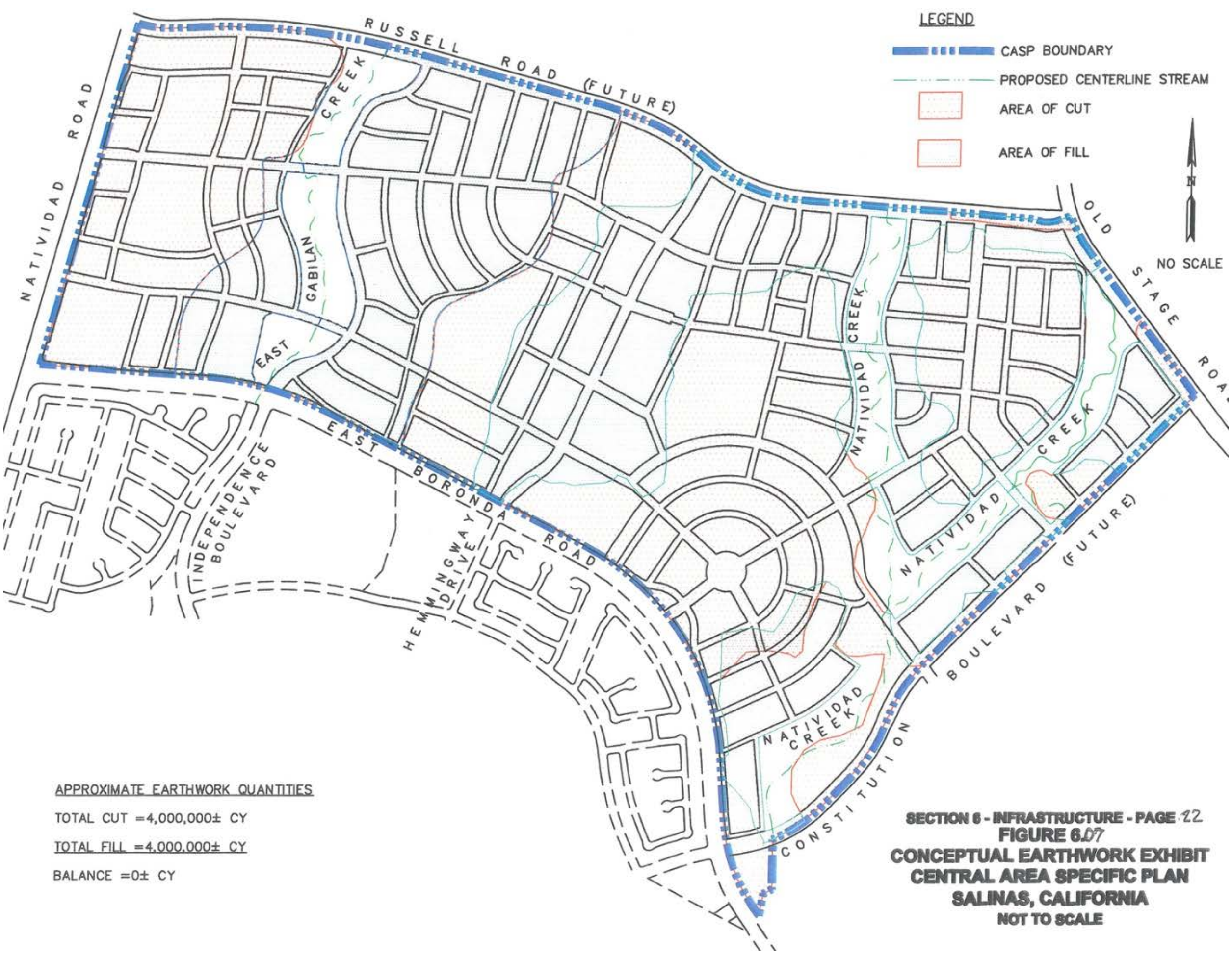


Figure 3-2 CASP conceptual grading plan. Source: CASP Draft, 2013.

3.2 Stream Corridor

Existing Gabilan Creek and Natividad Creek corridors within the CASP project area have been degraded and channelized because of agricultural operations (see **Appendix A** for supporting images). The CASP project intent is to naturalize both stream corridors and to build detention/retention/water quality basins along corridor edges that are part of anticipated improvements to existing hydrologic and ecological functions. A storm drain system will be built to convey surface runoff from the development into the corridors through a series of low impact development (LID) best management practices (BMP) features in open spaces. Other CASP project area improvements are intended to provide open space networks that include passive natural areas and active recreation and outdoor education areas (CASP NOP, 2017). Fruition of these plans would add habitat, aesthetic, recreational, storm water quality, and management value to the local setting via the creek corridors and LID BMP features.

Substantial earth grading (**Figure 3-2**) is planned within 100-year FEMA flood zones A and AE (**Figure 2-11**, **Figure 2-12**) as a means to restore and enhance the corridors to a more natural meandering, well-vegetated condition (CASP Draft, 2013) as well as to construct detention/retention/water quality basins (PACE, 2007a). Additional hydraulic studies and FEMA map revisions will be needed to ensure base flood elevations do not impact the proposed grading plans and associated development (CASP Draft, 2013).

The City of Salinas Stormwater Master Plan (SWMP, 2004) states that either a regional detention storage basin plan would be needed or that a project is required to build enough stormwater detention infrastructure to handle all needs within the project itself. The CASP project plans to develop runoff management infrastructure to handle all needs within the project itself. Basin locations in current plans are placed within the stream corridors (CASP NOP, 2017) and preliminary sizing and configuration plans have been developed (PACE, 2007a).

Detention/retention/water quality basins are proposed to be located exclusively within the restored Gabilan and Natividad Creek corridors (**Figure 3-3**). The combination detention/retention/water quality basins would be used to improve water quality, promote infiltration, store water, provide hydromodification mitigation, and avoid increases in peak storm-related flows from the CASP project area from entering the creeks and moving downstream into Carr Lake. Onsite storm drains within the CASP project site are expected to direct runoff to these facilities, which are required to maintain all existing values in runoff flow rates, volumes, and durations (SWDS, 2013; PACE 2007b) as agricultural lands are converted from pervious to impervious surfaces.

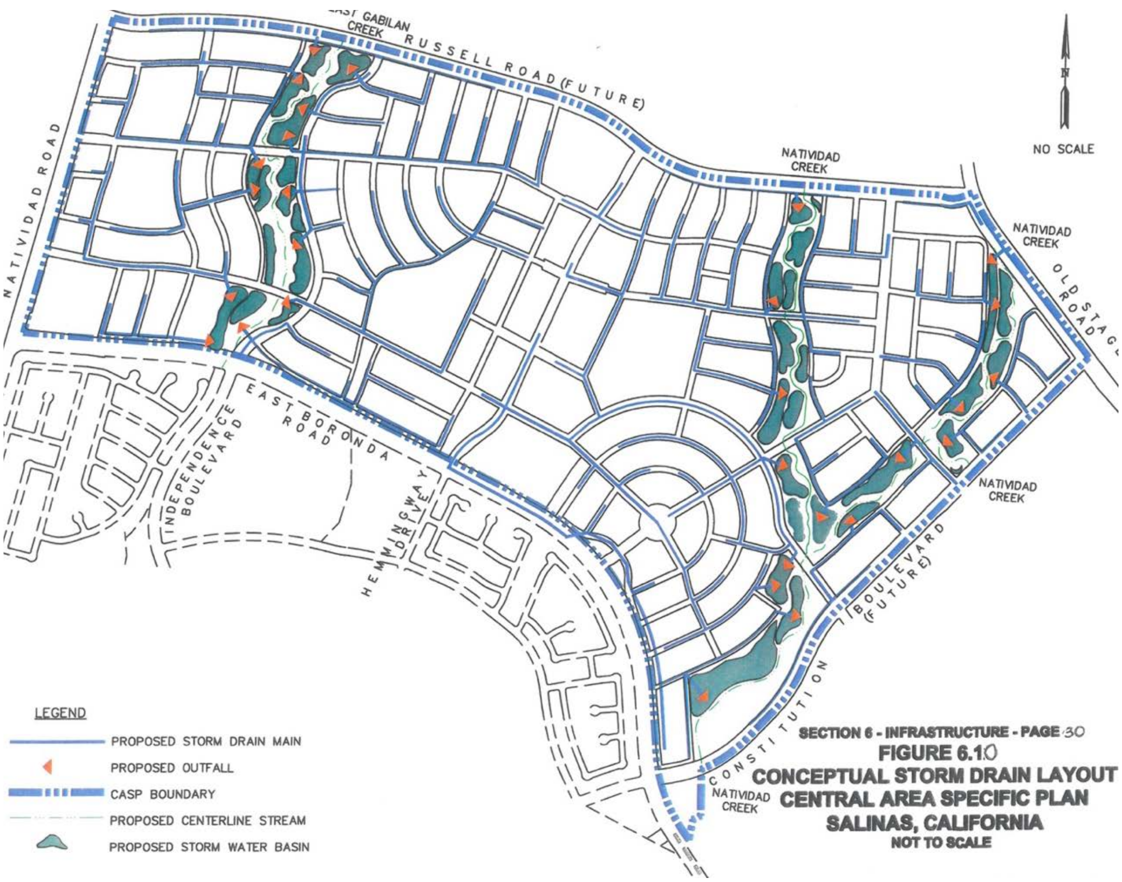


Figure 3-3 **CASP conceptual storm drain and stormwater basin plan.** Source: CASP Draft, 2013.

3.3 Drainage Infrastructure

Combination detention/retention/water quality basins are planned along both sides and much of the length of the Gabilan and Natividad Creek corridors within the CASP project area (**Figure 3-3**; CASP Draft, 2013; CASP NOP, 2017). A study and modeling of existing and proposed hydraulic/hydrologic conditions was conducted to size preliminary detention/retention/water quality basins (PACE, 2007a). The study used average rainfall depths from NOAA rainfall distributions estimates for Natividad and Gabilan Creeks, respectively, as 2.5 and 2.9 inches for a 10-year, 24-hour event, and as 4.3 to 5.1 inches for the 100-year, 24-hour event. For a 100-year 72-hour rainfall event, they used the USACE 1955 storm event of record (see Appendix B-2 in Schaaf & Wheeler, 1999), as 6.5 (Natividad), 6.4 (lower Gabilan), and 7.0 inches (upper Gabilan).

The CASP storm water drainage system will need to meet a number of requirements from the City of Salinas, the County of Monterey, and the State of California. The CASP NOP

(2017) acknowledges that these include LID requirements, water quality treatment requirements, and hydro-modification mitigation requirements. In addition to fulfilling these requirements, the CASP project intends to utilize site and parcel-based post-construction BMPs to the maximum extent practicable, to:

- maximize storm water infiltration and groundwater recharge;
- filter any storm water runoff to meet water quality requirements;
- reduce the cost of “grey” infrastructure in favor of “green” infrastructure; and
- mitigate the post-project peak storm water runoff rates and storm water runoff volumes with the intent of avoiding negative impacts to any downstream facility.

The storm water conveyance system would include an integrated network of open waterways and drains, underground storm drain pipes, detention/retention/water quality basins, and a wide range of LID and BMP features (CASP NOP, 2017). Storm drain pipelines will total roughly 25,000 feet in length (P&D Consultants, 2005).

A preliminary storm drain design was developed by P&D Consultants (2005; **Figure 3-3**), which stated that basin designs must incorporate features that provide storm water quality benefits, while still meeting flood control needs. This 2005 report also stated that, as part of the prevailing National Pollutant Discharge Elimination System (NPDES) requirements, the Permittee would be required to review existing numeric sizing criteria for structural treatment BMPs and to ensure that volume-based BMPs are designed to mitigate for potential pollutants, either through infiltration or treatment.

Preliminary detention/retention/water quality basin design plans were developed for the Natividad Creek portion of the CASP project area, with similar Gabilan Creek features to be developed later in the process. The preliminary Natividad Creek plans show basins occupying the edges of the stream corridors (**Figure 3-4**, PACE, 2007a), where inundation would be expected to occur during high flow events per preliminary modeling (**Figure 3-5**). The basins would be built as linked systems that could include water quality wetland forebays that promote sediment deposition prior to conveying flows sequentially into detention basins and retention basins which may have water quality wetlands at the inlets (**Figure 3-6, Figure 3-7**). Flows would convey through a series of passive controls and underdrains, and manual gates could be operated in certain circumstances.

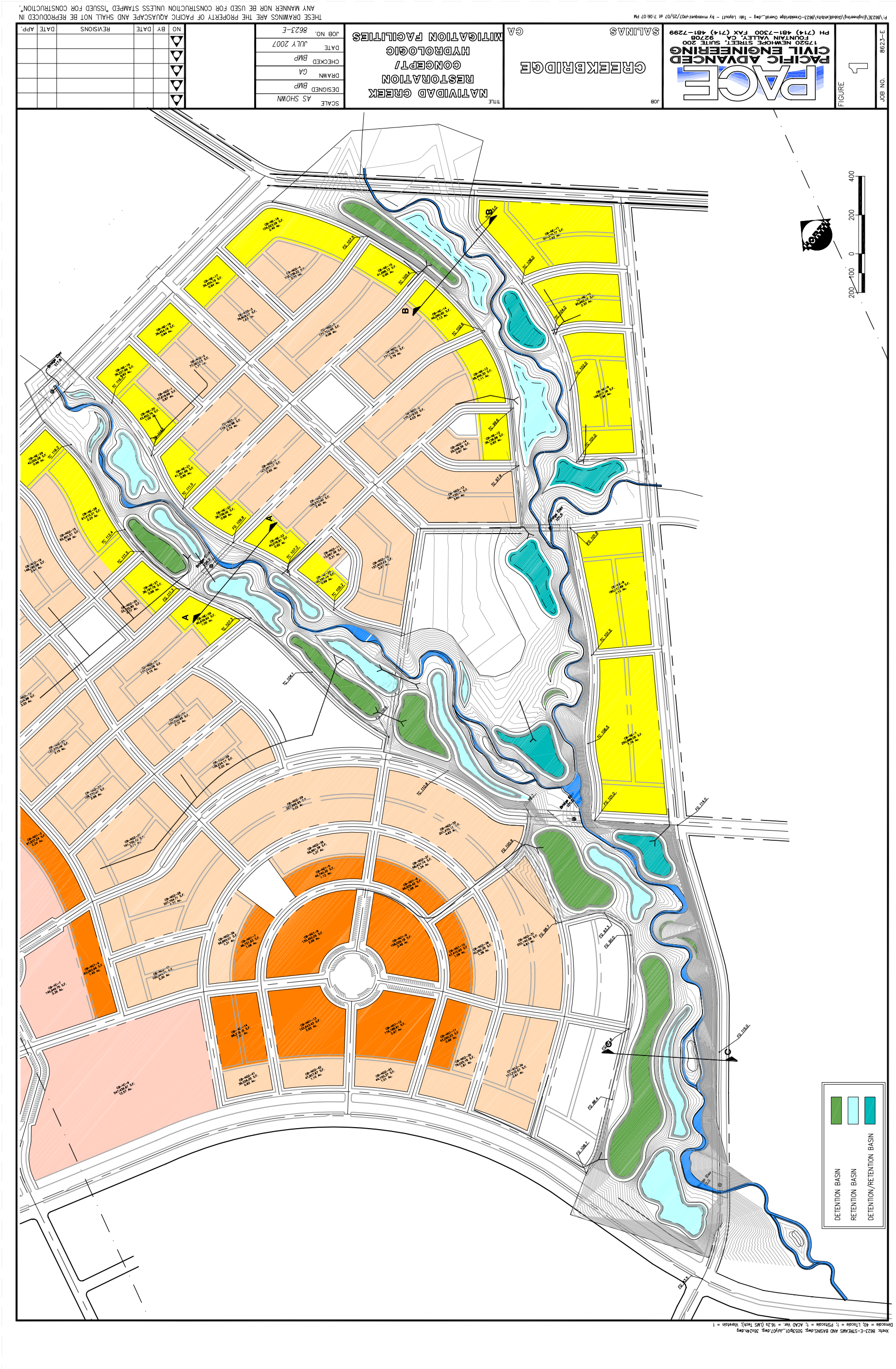
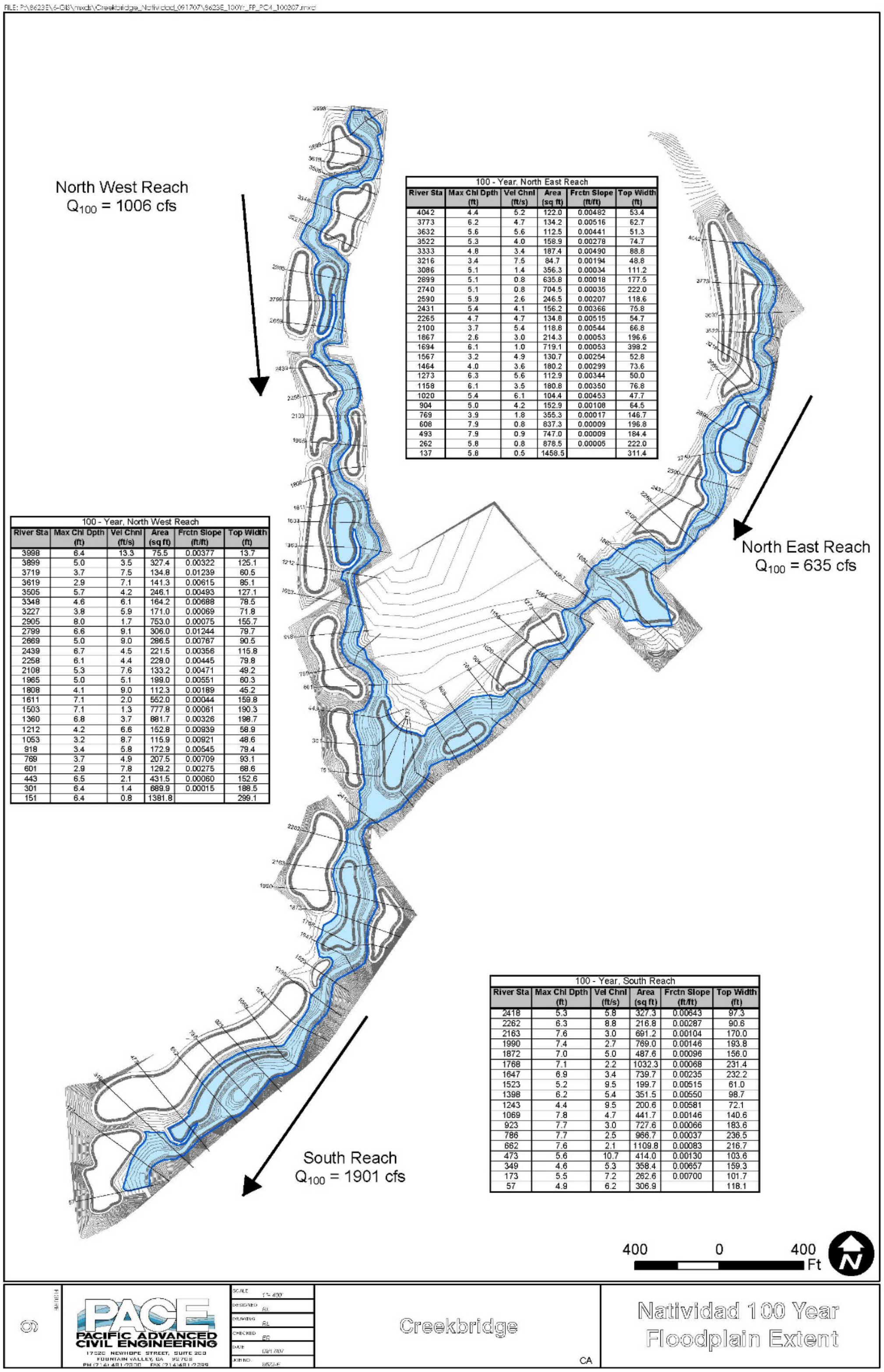


Figure 3-4 Preliminary placement of combination detention/retention/water quality basins in the Natividad Creek corridor under low flow conditions. Note that image orientation is different than other figures. Source: PACE, 2007a.



100 - Year, North East Reach					
River Sta	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Area (sq ft)	Frctn Slope (ft/ft)	Top Width (ft)
4042	4.4	5.2	122.0	0.00482	53.4
3773	6.2	4.7	134.2	0.00516	62.7
3632	5.6	5.6	112.5	0.00441	51.3
3522	5.3	4.0	158.9	0.00278	74.7
3333	4.8	3.4	187.4	0.00490	88.8
3216	3.4	7.5	84.7	0.00194	48.8
3086	5.1	1.4	356.3	0.00034	111.2
2899	5.1	0.8	635.8	0.00018	177.5
2740	5.1	0.8	704.5	0.00035	222.0
2590	5.9	2.6	246.5	0.00207	118.6
2431	5.4	4.1	156.2	0.00366	75.8
2265	4.7	4.7	134.8	0.00515	54.7
2100	3.7	5.4	118.8	0.00544	66.8
1867	2.6	3.0	214.3	0.00053	196.6
1694	6.1	1.0	719.1	0.00053	398.2
1567	3.2	4.9	130.7	0.00254	52.8
1464	4.0	3.6	180.2	0.00299	73.6
1273	6.3	5.6	112.9	0.00344	50.0
1158	6.1	3.5	180.8	0.00350	76.8
1020	5.4	6.1	104.4	0.00453	47.7
904	5.0	4.2	152.9	0.00108	64.5
769	3.9	1.8	355.3	0.00017	146.7
608	7.9	0.8	837.3	0.00009	196.8
493	7.9	0.9	747.0	0.00009	184.4
262	5.8	0.8	878.5	0.00005	222.0
137	5.8	0.5	1458.5		311.4

100 - Year, North West Reach					
River Sta	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Area (sq ft)	Frctn Slope (ft/ft)	Top Width (ft)
3998	6.4	13.3	75.5	0.00377	13.7
3899	5.0	3.5	327.4	0.00322	125.1
3719	3.7	7.5	134.8	0.01239	60.5
3619	2.9	7.1	141.3	0.00615	85.1
3505	5.7	4.2	246.1	0.00493	127.1
3348	4.6	6.1	164.2	0.00688	78.5
3227	3.8	5.9	171.0	0.00069	71.8
2905	8.0	1.7	753.0	0.00075	155.7
2799	6.6	9.1	306.0	0.01244	79.7
2669	5.0	9.0	286.5	0.00767	90.5
2439	6.7	4.5	221.5	0.00356	115.8
2258	6.1	4.4	228.0	0.00445	79.8
2108	5.3	7.6	133.2	0.00471	49.2
1965	5.0	5.1	199.0	0.00551	60.3
1808	4.1	9.0	112.3	0.00189	45.2
1611	7.1	2.0	552.0	0.00044	159.8
1503	7.1	1.3	777.8	0.00061	190.3
1360	6.8	3.7	881.7	0.00326	198.7
1212	4.2	6.6	152.8	0.00939	58.9
1053	3.2	8.7	115.9	0.00921	48.6
918	3.4	5.8	172.9	0.00545	79.4
769	3.7	4.9	207.5	0.00709	93.1
601	2.9	7.8	129.2	0.00275	68.6
443	6.5	2.1	431.5	0.00060	152.6
301	6.4	1.4	689.9	0.00015	188.5
151	6.4	0.8	1381.8		299.1

100 - Year, South Reach					
River Sta	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Area (sq ft)	Frctn Slope (ft/ft)	Top Width (ft)
2418	5.3	5.8	327.3	0.00643	97.3
2262	6.3	8.8	216.8	0.00287	90.6
2163	7.6	3.0	691.2	0.00104	170.0
1990	7.4	2.7	769.0	0.00146	193.8
1872	7.0	5.0	487.6	0.00096	156.0
1768	7.1	2.2	1032.3	0.00068	231.4
1647	6.9	3.4	739.7	0.00235	232.2
1523	5.2	9.5	199.7	0.00515	61.0
1398	6.2	5.4	351.5	0.00550	98.7
1243	4.4	9.5	200.6	0.00581	72.1
1069	7.8	4.7	441.7	0.00146	140.6
923	7.7	3.0	727.6	0.00066	183.6
786	7.7	2.5	966.7	0.00037	236.5
662	7.6	2.1	1109.8	0.00083	216.7
473	5.6	10.7	414.0	0.00130	103.6
349	4.6	5.3	358.4	0.00657	159.3
173	5.5	7.2	262.6	0.00700	101.7
57	4.9	6.2	306.9		118.1

Figure 3-5 Preliminary results with blue coloration showing inundation of some detention/retention/water quality basins in the Natividad Creek corridor during a 100-year flood event. Source: PACE, 2007a.

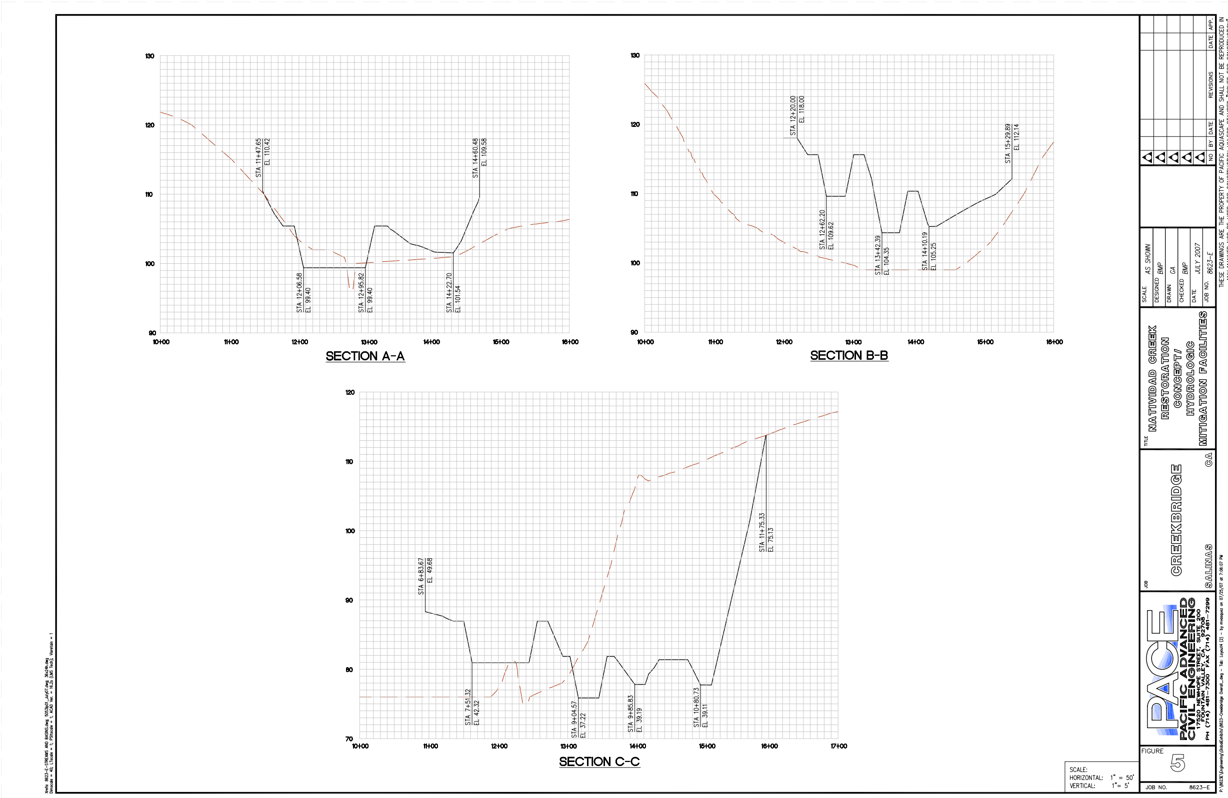


Figure 3-6 Conceptual cross-sectional layouts of detention/retention/water quality basins. See Figure 3-4 for section locations. Source: PACE, 2007a.

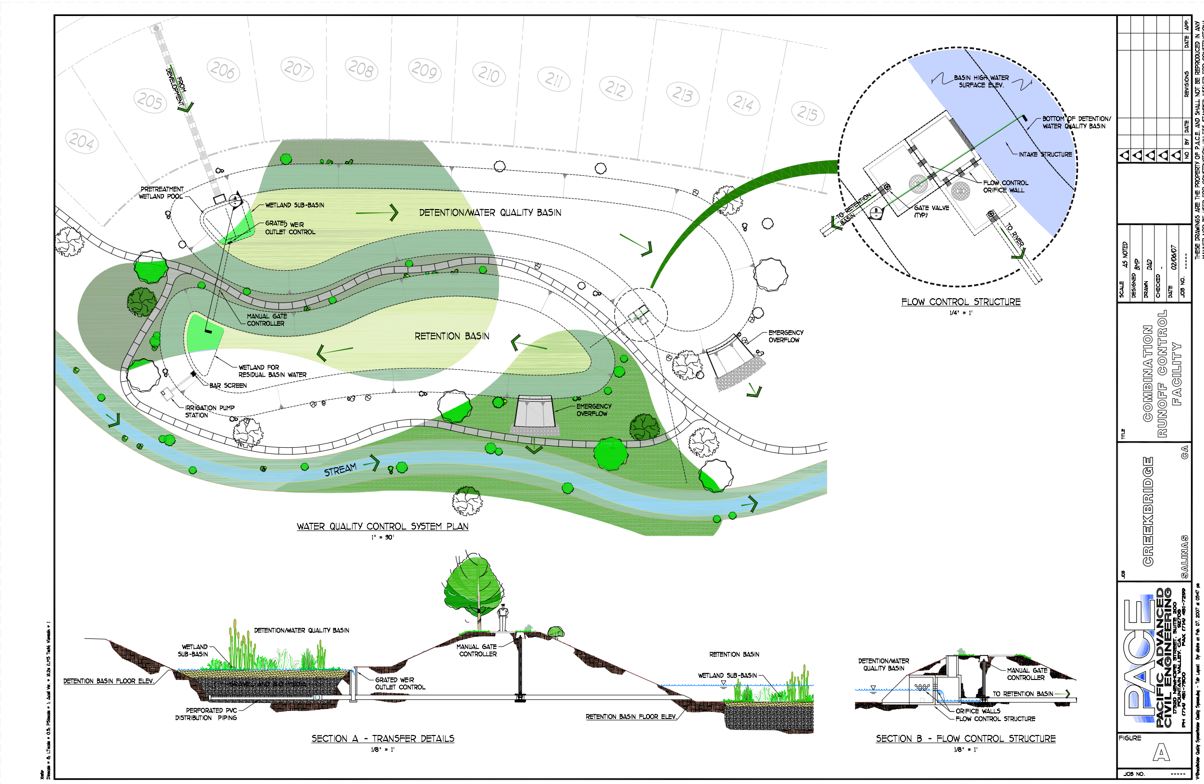


Figure 3-7 **Conceptual drawings of detention/retention/water quality basins planned as integral features of the restored creek corridor.** Source: PACE, 2007a.

3.4 Runoff and Infiltration Management

Total average annual rainfall depth is 15.5 inches and the CASP surface area is 760 acres (CASP NOP, 2017). This yields an annual rainfall volume of approximately 980 acre-feet. Nearly all existing area is in use as agricultural fields, while the proposed project would convert as much as 60% of the area to impervious surfaces. An increase in impervious surfaces could result in commensurate groundwater recharge reduction in the range of 500-600 acre-feet. Any differences between existing groundwater pumping rates and future municipal water usage were not within the scope of this report. Under the assumption of reductions in groundwater extraction rates associated with land use changes from agricultural, a net decrease in groundwater extraction is likely to offset any potential decrease in infiltration. Moreover, detention/retention/water quality basins are proposed to be built in the creek corridors under the assumption of relatively high infiltration capabilities, which could provide an increase in total surface water infiltration into the underlying groundwater aquifer.

Any capability for the CASP project to increase groundwater infiltration rates into the local aquifer would be beneficial to the East Side aquifer and the greater Salinas region. Mapped groundwater depth below ground surface shows that CASP project location overlies the greatest groundwater surface depression (at a negative 90-100 feet) of the East Side aquifer, so additional infiltration of surface water compared to existing conditions should have a maximal impact on groundwater replenishment, making this a particularly important infiltration opportunity. It is important to note, too, that while the shallow East Side groundwater aquifer may lie up to 100 feet below the ground surface in some areas of the CASP project area, creek flows can nevertheless be a direct expression of shallow groundwater.

Earth Systems Pacific (2007) conducted soils tests within the Natividad Creek watershed area of the CASP project. They collected soil profile data at depths up to 16.5 feet from logged soil borings, performed water percolation tests on-site in holes 2 to 6 feet in depth, conducted infiltrometer tests on surficial soils to a depth of about 18 inches, and conducted lab tests for particle size distribution, hydraulic conductivity, and compaction. Overall conclusions of existing subsurface conditions included the following:

- Clay soil layers have low potential for infiltration,
- Silty, sandy, clayey soils have moderate to rapid infiltration potential,
- Recompacted soils tests in the lab yielded higher infiltration rates than relatively undisturbed *in situ* soils, with relative infiltration rates remaining constant (i.e., clays were slowest),
- *In situ* infiltration test rates were highly variable, with lower infiltration rates in compacted or irrigated areas, and
- Clay layers ranged from 1-3 feet in about half of the boring and test pit locations, but exceeded 9 feet in thickness in some areas, suggesting no consistent trend and high variability.

In relation to the needs of any stormwater control facilities, Earth Systems Pacific (2007) offered the following observations:

- Stormwater control facilities located in sandy soils would likely infiltrate water relatively rapidly, whereas rates would be slower in clays and clayey sands,

- Any silts and clays that deposit into stormwater control facilities would reduce infiltration capacities, so proper maintenance would be needed to maintain target infiltration capacities, and
- Stormwater control facilities would likely be most effective if constructed as deep as practicable to intercept sandy deposits, whether indirect or direct infiltration methods are used.

Whether permanent detention/retention/water quality basins will function over the long-term in the relatively non-cohesive fine-grained materials that currently exist within all stream corridors will need to be investigated in other iterations of the design process. Whether permanent detention/retention/water quality basins will function over the long-term in more clayey soils at depth will need to be investigated in other iterations of the design process.

PACE (2007a) conducted a series of hydraulic/hydrologic analyses for mitigation basin designs, utilizing an average saturated infiltration rate of 0.09 inches per hour based on Earth Systems Pacific (2007) infiltration test results for 31 locations in the Natividad Creek area of the CASP project (minimum infiltration rate of 0.00005 inches per hour and maximum of 1.42 inches per hour; no tests were conducted in the Gabilan Creek area). PACE (2007a) used the average saturated infiltration rate in preliminary analyses to size basins (**Table 3-1**) that would fulfill various regulatory requirements for detention, retention, and water quality components of water resource management.

Table 3-1 Summary of stormwater control facility basin storage requirements.
Source: PACE (2007a).

CASP project area subwatersheds					Maximum day retention		
	Drainage area	City of Salinas Detention	72-hr storm, Retention	WQ	no infiltration	Factor of Safety 2	Factor of Safety 4
Gabilan	acres	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
1	128.7	14.4	11	3.53	30.2	7.7	14.5
2	139.5	14.7	12	3.83	28.8	7.2	13.4
Natividad							
3	285	35.2	31	7.83	79.1	21.9	41.2
4	84.1	6.4	3	2.31	14.6	3.1	5.7
5	15	0.6	4	0	3.9	0.8	1.5
6	13	0.8	2	0	2.0	0.3	0.5
Total	665.3	72.1	63	17.5	158.6	41	76.8

Basin sizing assumptions were based on field data and provide for conservative sizing results; those related to factors of safety for the maximum one-day retention volume compared to “no infiltration” indicate how important infiltration functionality will be to project success. The total area of creek corridor available for natural flows compared to the total area dedicated to the detention/retention/water quality basins was not specified, but simple estimates using available information (**Table 3-1, Figure 3-4**, **Figure 3-6**) suggest that basins will occupy about one-half to two-thirds of the proposed stream corridor area. Whether necessary conveyance capacity for upslope stream flows and necessary volumetric capacity of the detention/retention/water quality basin will be available in high flow conditions is a significant concern - particularly if some basins are inundated during larger floods. The interaction between creek flows and local stormwater flows will need to be investigated.

A set of design considerations (PACE 2007a) includes brief discussions of future needs in the next iterations of stormwater hydrologic control measures as the CASP project moves forward:

- Higher infiltration rates in the corridors as a primary motivation to site the basins within the stream corridors,
- Potential for basins to store creek flows as well as development runoff during the highest flow conditions,
- Exploration of a range of basin facility configurations,
- Importance of mosquito control,
- Importance of vegetation selection,
- Basin depths and embankment side slopes as safety considerations,
- Outlet operations and potential for clogging,
- Avoidance of basin slope erosion,
- Maintenance access, and
- Maintenance of infiltration capacities by regular removal of sediment deposition.

In addition to stream corridor detention/retention/water quality basins, LID principles are planned for implementation throughout the CASP plan area (CASP NOP, 2017), although number, locations, and sizes are not yet specified. The expectation is that developed site hydrology will be managed to the maximum extent practicable by storing, infiltrating, and detaining runoff per regulatory requirements using LIDs, BMPs, and a combination of detention/retention/water quality basins (**Figure 3-4**).

Proposed LID features would be located next to impervious areas within the plan area (**Figure 3-1**). LID features that may be utilized include pervious strips concentrated along residential streets and at driveways to disconnect developed lots from the drainage system, bio-swales, on-site bio-retention, and porous pavement (SWDS, 2013). Runoff retained in LID features would be used by plants, as well as evaporate or infiltrate into underlying soils for groundwater recharge. Underdrains piping to the storm water drainage system would be installed where soils have low permeability, to prevent extended ponding of trapped water.

3.5 Water Quality Treatment

The PACE (2007a) report identifies water quality treatment basins and how water quality basins/wetlands would work in tandem with detention/retention basins (**Figure 3-7**). Each water quality basin would include minimum standards for sizing treatment control BMPs in volume- or flow-based facilities that would detain the water quality design storm and any additional volume of runoff caused by the development above the pre-development runoff during the design event. The CASP NOP (2017) acknowledges that the potential impacts on hydrology and water quality caused by the proposed project will require additional detailed analysis and conformity to water quality regulations. As suggested by the PACE (2007a) report, the approach to water quality treatment is expected to use LID principles that include water quality BMPs. As mentioned above, locations for LID/BMPs have not yet been identified.

4 REGULATORY SETTING

4.1 State Laws and Regulations

The California Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). MS4s are defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned or operated by a public body (i.e. city, county, etc.) designed or used to collect or convey stormwater, not a combined sewer, and not part of a publicly owned treatment works (SWDS, 2013). Under Phase I of the MS4 permit program, the California Regional Water Quality Control Board issued an NPDES permit to the City of Salinas (Permit No. CA0049981; CCRWQCB Order R3-2012-0005) which regulates development within city limits (CCRWQCB, 2012). Recognized impairments to the receiving waters include:

1. Listed impairments to the following receiving waters: Gabilan Creek, Natividad Creek, Reclamation Ditch, either within or downstream of the project area include: nitrate, ammonia, fecal coliforms, E. Coli, turbidity, priority organics, pesticides, copper, low dissolved oxygen, low pH, sediment toxicity, unknown toxicity, cholorpyrifos, and diazinon.

The NPDES permit imposes multiple regulations on the City of Salinas in operating its MS4, including the following key requirements:

- Discharges which contribute to exceedances of water quality standards and are not reduced to the maximum extent practicable are prohibited.
- Projects in future growth areas are required to manage rainfall at the source using uniformly distributed decentralized controls, natural treatment, and volume reduction BMPs (e.g., bio-retention features, vegetated swales, filter strips) as the first means of meeting stormwater management criteria.
- Erosion and sediment control BMPs shall be installed to reduce pollutant discharges from construction areas and to control ongoing sediment production from slopes and channels.
- Soil stabilization shall be implemented on disturbed areas immediately following the completion of earth disturbing activities.

- Source control BMPs shall be implemented in projects to minimize the discharge of pollutants.

Furthermore, the NPDES requires the following detention/retention/water quality capabilities for storm related runoff:

- Detention/retention of the volume of runoff from impervious areas produced from the 24-hour 85th percentile storm event, which is currently set at 0.6 inches of rainfall for the City of Salinas.

The NPDES permit identifies one Total Maximum Daily Load (TMDL) limitation, for fecal coliform concentrations in receiving waters. Based on a minimum of not less than five samples for any 30-day period, fecal coliform concentrations shall not exceed a log mean of 200 MPN/100 mL (MPN is defined as "most probable number"), nor shall more than ten percent of total samples during any 30-day period exceed 40 MPN/100 mL. Discharges to the receiving waters which cause an exceedance of this criterion must be prevented.

Finally, the NPDES permittee shall develop, update, and implement an effective stormwater pollution prevention plan (SWPPP) that identifies BMPs, standard operating procedures, inspection procedures, checklists, schedules, and records of performing these activities in conformance with the permit.

4.1.1 Groundwater Law

The importance of maintaining sustainable groundwater supplies has driven the formation of a nascent regulatory framework, as passed into law by the statewide Sustainable Groundwater Management Act (SGMA, 2014). In Salinas Valley, a mandatory groundwater basin planning process is underway. Local stakeholders have formed the Salinas Valley Groundwater Sustainability Agency with the intent to develop implementation plans for sustainable groundwater use in the Salinas Valley Basin by 2020 (SVGSA, 2017). The CASP project area will be regulated in the future through the SVGSA organization operating within the framework of the SGMA.

4.2 Local Regulations and Policies

The most current City of Salinas standards are defined in "Stormwater Standards for New and Redevelopment Projects" (SWDS, 2013), The regulations pertinent to this ADEIR, given the project size, are summarized below in **Table 4-1**. The SWDS was formally updated to incorporate requirements of the NPDES permit issued to the City in 2012.

Table 4-1 Summary of applicable City of Salinas SWDS (2013) requirements

SWDS Section	Applicable Project Impact	Limitation or specification
2.1.1	Runoff generated by projects where more than 50% of existing impervious areas will be altered	All runoff from entire project area shall be included in treatment design
2.2.1	Changes in ground surface	• Minimize impervious area • Limit disturbances of natural drainage features • Minimize compaction of highly permeable soils • Minimize clearing and grading of native vegetation
2.2.1	Pollution source control	BMPs must be applied to all impervious areas and incorporate landscaping that minimizes runoff and promotes infiltration
2.2.4	Retention of runoff from impervious areas	• When design infiltration rate is greater than 0.3 in/hr, off-site discharges from all rainfall events up to 0.98 inches of rainfall in 24 hours (95th percentile storm event) shall be prevented using retention and infiltration methods. • When design infiltration rate is less than or equal to 0.3 in/hr, a low flow control system with the capacity of no more than 0.01 cfs per tributary acre is permitted.
2.2.5	Control of peak storm flows	Post development peak storm flows shall not exceed pre-project peak flows for the 2- through 100-year rainfall events. A calibrated continuous simulation

		hydrologic model must be used to evaluate stormwater control measures.
2.3	Stormwater control plan	Plan must be submitted that addresses sizing, infiltration feasibility, and other performance calculations, and LID and BMP controls.
2.4	Operation and Maintenance plan	Plan must include procedures and schedule that will be used to maintain long-term effectiveness of flow controls and BMPs.
3.3.2.1	Proximity of BMPs to potable water wells	Minimum of 100 feet separation.
3.3.2.3	Depth from infiltration BMPs to seasonally high groundwater level	Minimum of 5 feet for indirect infiltration features and 10 for direct infiltration features, or demonstration that sufficient measures will ensure insignificant risk of groundwater contamination.
4.5.1 and 4.6	Attenuation of peak flows to pre-project conditions	• Peak flow matching up to the 100-year storm event. • Adequate mitigation of the 2-year peak flow is assumed if the 10-year peak post-project flow is reduced to pre-project discharge and if the 2-year post-project flow is less than 60 percent of the pre-project 10-year peak flow.
5.9	Detention of discharges flowing to Carr Lake	Monterey County Water Resources Agency criteria will be met.
5.9	Detention/retention facility sizing calculations	• 24-hour duration storms shall be used for detention facility sizing

		• discharge shall not exceed the available downstream capacity
6.1.4	Control of potential groundwater contamination	Only indirect infiltration (infiltration after treatment in a BMP) is allowed when there is potential for contaminant spills or transportation of contaminants from contributing areas.

Municipal ordinances related to floodplains in the City of Salinas Code of Ordinances (2017) that are pertinent to the CASP project area include information located in Sec. 9-54.3, Sec. 9-55.1, Sec. 9-55.3., and Sec. 9-55.4. The City of Salinas has established the following standards that will apply to the CASP project area:

- All new construction must be built a minimum of two feet above the base flood elevation (Sec. 9-55.1.c).
- If the site is filled above the base flood elevation, an application for a letter of map revision based on fill (LOMR-F) must be submitted to the floodplain administrator with the pertinent information (Sec. 9-55.3.a).

The Monterey County Water Resource Agency has imposed regulations for floodplains in the County, Ordinance 5139 (Monterey County Board of Supervisors, October 2009). Pertinent regulations applying to the CASP project area include those listed below:

- Lands within the FEMA FIRM identified 100-year floodplain (Special Hazards Areas) and areas within 200 feet of a river or with 50 feet of a watercourse are subject to these regulations.
- No construction is allowed within regulatory floodway Zones A or Zones AE.
- Any encroachment into a regulatory floodway shall not result in any increase of base flood elevations.
- New construction shall have the lowest floor, including basement, elevated to at least one foot above the base flood elevation (City of Salinas has a 2-foot standard).

5 STANDARDS OF SIGNIFICANCE

Under accepted criteria for assessing impacts under the California Environmental Quality Act (CEQA, 2016), the Salinas CASP project would have a significant impact with regard to hydrology and water quality if it would:

1. Violate any water quality standards or waste discharge requirements.
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade water quality.
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Be subject to inundation by seiche, tsunami, or mudflow.

6 PROJECT INDUCED CHANGES IN HYDROLOGY AND WATER QUALITY

6.1 Runoff and Infiltration

The proposed CASP development is expected to contain water quality BMPs based on LID principles, and detention/retention/water quality basins designed to maintain or reduce existing conditions runoff to the Gabilan and Natividad Creek channels. Changes to land characteristics from agricultural to impervious surfaces (housing, streets) will increase runoff potential. Depth to groundwater in the creek corridors compared to detention/retention/water quality basin invert elevations will be an important determination, as indirect infiltration basins are required to be 5 feet above seasonally high groundwater elevations (SWDS, 2013).

The infiltration capacity of soils varies between watersheds and from location to location, with the highest infiltration capacity located within the Gabilan Creek corridor and historic floodplain (**Figure 2-3**). Natividad Creek also contains high infiltration capacity zones within its corridor, but has less overall infiltration capacity. Infiltration capacities may change dramatically in areas impacted by extensive proposed grading, depending on what soils types are exposed, level of compaction, and what soils are placed as top soils.

The ability of detention/retention/water quality basins to infiltrate stormwater will be dependent on whether basins are situated in sandy soils or clayey soils. The ability of detention/retention/water quality basins to remain structurally sound may also be dependent on whether basins are situated in sandy soils or clayey soils. Investigations into whether both conditions can be met are needed.

Evapotranspiration (ET) has been shown to decrease when irrigated agricultural land is converted into urbanized settings (Grimmond and Oki, 1999). Existing ET, which averages about 35 inches per year (**Figure 2-8**), could decrease to as little as 20-25 inches per year and may result in more runoff routed into the local groundwater aquifer than under current conditions. If ET rates are lower and appropriately sized basins are built and properly maintained, as envisioned within both creek corridors, infiltration capacities into the local groundwater aquifer should be maintained or could potentially increase.

Results of peak and total volume runoff calculations and detention basin sizing calculations (PACE, 2007a) for predicted high flow runoff conditions appear to meet regulatory requirements for the proposed development.

6.2 Flooding

The CASP project area Gabilan and Natividad Creek corridors are subject to flooding. **Figure 2-11** indicates the extent of designated floodway Zone AE (Gabilan Creek) and Zone A (Natividad Creek). The City of Salinas Code of Ordinances (2017) standards of construction Sec. 9-55.1. states that all new construction shall be built at a minimum elevation of 2-feet above the base flood elevation (i.e., the 100-year flood elevation). An application for a letter of map revision must be filed with the City of Salinas floodplain administrator and FEMA with necessary information for approval, because of extensive grading plans for developments, and extensive grading plans within the creek corridor in support of creek channel rehabilitation and detention/retention/water quality basins. Preliminary placements of the detention/retention/water quality basins appear to conform to FEMA flood zones (**Figure 6-1**).

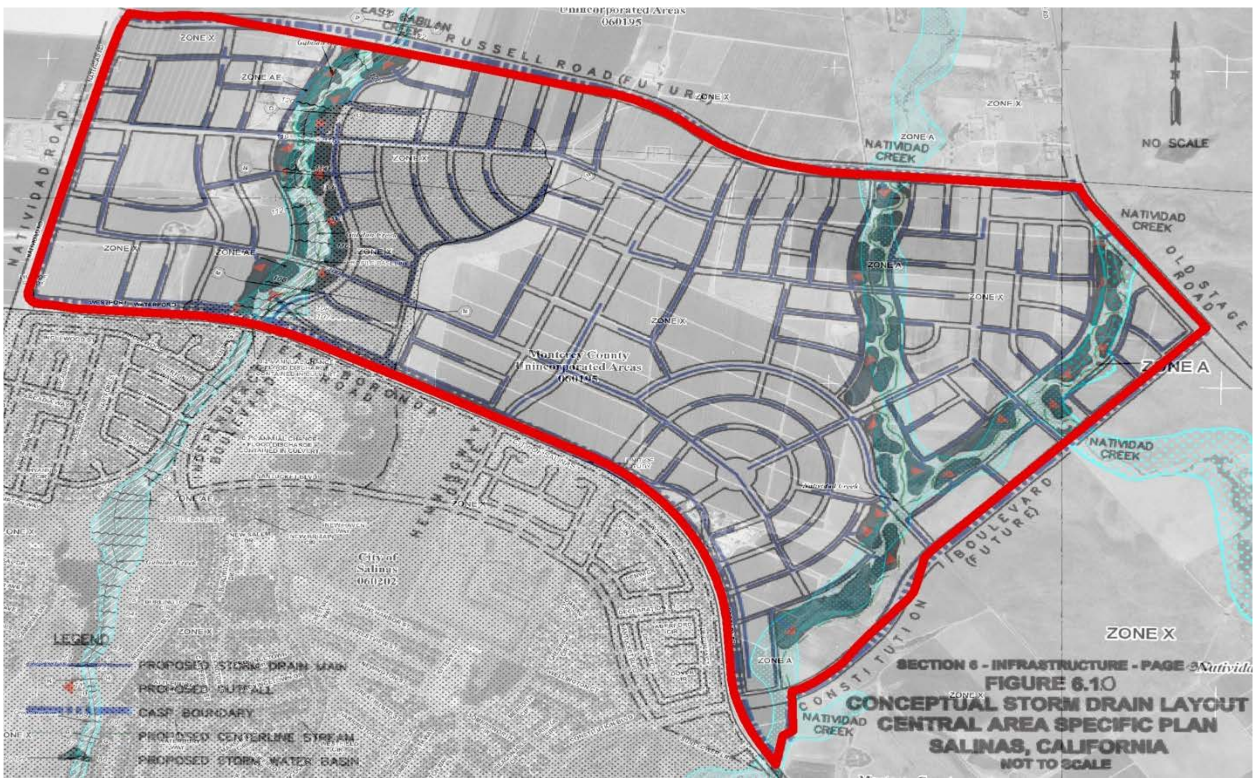


Figure 6-1 **Conceptual stormwater basin placements overlain on FEMA flood zone mapping indicates relative agreement of basin placements with FEMA Zone AE (Gabilan) and Zone A (Natividad).**

The conceptual drainage infrastructure plan for the CASP project area (**Figure 3-3**) includes storm drain piping that is intended to preserve existing drainage patterns, such that drainage is directed into the appropriate creek corridor (P&D Consultants, 2005). In addition to stream corridor basins, open space areas will contain LID BMPs as supplemental detention/retention/water quality basins. All basins are expected to have potential for infiltration and flood flow attenuation for on-site flows (PACE, 2007a).

The CASP project area will undergo extensive grading to create a developable site for the proposed site plan, especially at transition slopes between existing bluffs and at the creek enhancement corridor boundaries (CASP Draft, 2013). Maximum cut and fill of up to 30 feet are anticipated, and as much as 4 million cubic yards of earth moved within the CASP project area. Grading of this magnitude will dramatically change land elevations and has the potential to substantially change the infiltration rates of affected soils. The conceptual pattern of cut/fill is indicated on **Figure 3-2**; however, a high-resolution figure and cut/fill quantities would be needed to reliably interpret cut/fill areas but was not available for this report. As a result of extensive grading, existing flood mapping will no longer be applicable. The project applicant will be required to submit an application for a letter of map revision based on fill (LOMR-F) to the City of Salinas floodplain administrator and FEMA for approval.

Natividad basin placements (**Figure 3-4**) indicates a general minimum 300-foot wide creek corridor with some areas up to 400-500 feet wide, with no structures located within the designated floodway extents of the creek corridors other than detention/retention/water quality basins. Provided that the storm drain system and basin facilities are adequately sized, are properly installed and maintained, and do not encroach on the channel conveyance area to an extent that prohibits smooth transitions at upstream and downstream boundaries as well as within the CASP project area itself for flood and sediment conveyance, additional flooding should not be induced by the proposed project.

6.3 Discharge to Existing Waterways and Storm Drains

The proposed storm drain alignments, detention/retention/water quality basins, and use of LID principles for water quality BMPs (locations not specified) are expected to be designed to prevent any increases in low flow discharges or storm related peak discharges, and to minimize any degradation of the quality of stormwater exiting the CASP project area. Calculations related to potential changes in storm related peak discharge and total storm runoff volume are reported in PACE (2007a). Detailed sediment transport studies in both creek corridors will have to take into account off-site stormwater flows and sediment transport capacities at upstream, downstream, and in-project stream corridors (PACE 2007a,b) It will be necessary to conduct additional hydraulic studies and properly size the capacity of the rehabilitated stream corridor and stormwater control basins, particularly if much of the stream corridor is occupied by basins as currently envisioned (**Figure 3-4**).

Analyses of stormwater discharges during rainfall events have been modeled (PACE, 2007a), which provides information needed to design LID/BMP features and detention/retention basins to meet the all stormwater management and water quality management standards. Some retained water will be lost to evapotranspiration and potentially much more will be expected to infiltrate into the ground and replenish the underlying groundwater aquifer. If LID/BMPs are properly designed, reductions in runoff to storm drains across a range of rainfall-runoff events may indicate that stormwater runoff would be retained within the project area relative to existing conditions.

6.4 Surface Water Quality

Important water quality concerns for Gabilan Creek, Natividad Creek, Carr Lake, and the downstream Reclamation Ditch receiving waters currently include turbidity, nutrient, and fecal coliform concentrations. Urbanized areas tend to produce contaminants such as heavy metals, oils and greases, pesticides, nutrients from landscape fertilizers, and household chemicals that may transport into the creeks. Water quality basins associated with detention/retention basins in the stream corridor were evaluated as part of the PACE (2007a). Smaller BMPs within the development were broadly discussed but not specified by location in the project plan (**Figure 3-1**) or CASP NOP (2017). Detention/retention/water quality basins are expected to be designed to capture and retain urban-associated contaminants as well as to reduce turbidity and nutrients which may be mobilized in the developed areas or which enter the area from upstream sources. Water quality detention basins and distributed BMPs should be designed to trap suspended solids and nutrients which may enter the CASP project area from upslope properties that will continue to be farmed. If properly designed, water quality BMPs and detention/retention/water quality basins would likely reduce loadings of contaminants, nutrients, turbidity, and fecal coliforms to the downstream receiving waters relative to existing conditions.

6.5 Groundwater Quantity and Quality

Impacts to groundwater are an important consideration for the CASP development plan as well as the East Side aquifer. Salinas Valley groundwater quantities have been declining for decades, as evidenced by the substantial lowering of water levels in local aquifers because of groundwater extraction practices (**Figure 2-14**). Groundwater quality has also been degrading for decades, with nitrate loading from agricultural activities and with varying degrees of potential for salinity intrusions into freshwater groundwater supplies (**Figure 2-15**). If detention/retention/water quality basins are to be located in the stream corridors, then there is potential for depth to seasonally high groundwater to be less than 5 feet as required by SWDS (2013) section 3.3.2.3 (see **Table 4-1**) for indirect infiltration, in which case the project will have to demonstrate that sufficient measures will be employed to ensure an insignificant risk of groundwater contamination.

The BMPs proposed as part of the CASP project plan should be designed to infiltrate as much stormwater runoff as practicable into the ground (SWDS, 2013) prior to entering the storm water drain system. The expected predicted impact of the development, with appropriately designed detention/retention/water quality basins and BMPs, would be to decrease the volume of runoff from the CASP project area during large rainfall events and eliminate discharges completely for storms up to 0.98 inches in 24 hours. A portion of the detained runoff should infiltrate into the ground if the basins and BMPs are correctly installed and maintained, which should contribute to local aquifer replenishment. Evapotranspiration should also decrease (Grimmond and Oki, 1998), as a result of a change in irrigation practices from agricultural to mostly dry climate landscaping and concerted efforts to increase infiltration. Water quality basins and BMPs would be designed to trap contaminants and to beneficially make use of nutrients in vegetated swales and planted areas. Moreover, application rates of fertilizers to urbanized areas would decrease from those typically used in agriculture. The aggregate effect of the proposed development should be an increase in infiltration of stormwater runoff and a decrease in the loading of nutrients such as nitrates into the local groundwater aquifers.

7 IMPACT ANALYSIS

The Salinas CASP project could have a significant impact on hydrology and water quality if changes in hydrologic conditions and production of water contaminants caused by the proposed project are not adequately mitigated. Potential project impacts are discussed in the same order as the Standards of Significance listed in Section 5.

1. **Would the project violate any water quality standards or waste discharge requirements?**

1.1 Surface Water: There are no plans to discharge stormwaters into the existing City of Salinas storm drain system. Storm drains within the CASP project area will convey stormwaters to detention/retention/water quality basins in the creek corridors and eventually into Gabilan Creek and Natividad Creek. Waters that do not infiltrate or evaporate will be released following discharge requirements, and conveyed downstream into Carr Lake and the Reclamation Ditch system. Listed impairments of these receiving waters (CCRWQCB, 2012) include: nitrate, ammonia, fecal coliforms, E. Coli, turbidity, priority organics, pesticides, copper, and low pH. If runoff from the project site is not treated, then increases in the listed water quality impairments for these receiving waters would be likely.

The NPDES permit granted to the City of Salinas by the Central Coast RWQCB (CCRWQCB, 2012) prohibits discharges which contribute to exceedances of water quality standards and requires that source control BMPs are implemented to minimize discharge of pollutants. The permit defines one TMDL limitation for these receiving waters: fecal coliform concentrations. Accordingly, based on a minimum of not less than five samples for any 30-day period, fecal coliform concentrations shall not exceed a log mean of 200 MPN/100 mL, nor shall more than ten percent of total samples during any 30-day period exceed 40 MPN/100 mL. Untreated stormwater discharges have the potential to contribute fecal coliforms to receiving waters due to the presence of animal wastes in impervious and landscaped areas. The City of Salinas Stormwater Development Standards for New and Redevelopment Projects (SWDS, 2013) require pollution source control for all impervious areas using LID principles and BMPs.

Impact HYDRO-1: Stormwater discharges from the CASP project area, if not treated, could violate the City of Salinas NPDES permit as well as the City of Salinas stormwater development standards, and would likely contribute to violations of the receiving water TMDL for fecal coliforms.

Mitigation Measure HYDRO-1.1: The project applicant will submit for approval detailed plans and calculations for BMPs and water quality basins designed to meet the prevailing regulatory requirements and reduce contaminant loadings to receiving waters to the maximum extent practicable.

Mitigation Measure HYDRO-1.2: The project applicant will implement a long-term operations and maintenance plan designed to maintain BMP and flow controls needed to meet water quality standards to the maximum extent practicable, as specified via implementation of an SWPPP.

Impact HYDRO-2: Runoff from construction sites and activities, if not intercepted and treated, would violate the City of Salinas NPDES permit and City development standards, and would likely contribute to increased sediment and contaminant loadings to receiving waters.

Mitigation Measure HYDRO-2.1: The project applicant will implement appropriate construction activities controls, as required by regulations, to minimize runoff, erosion, and sediment mobilization. All phases of construction within the CASP project area will be carried out under criteria established in the SWPPP conforming to the prevailing Construction General Storm Water Permit.

Mitigation Measure HYDRO-2.2: During construction activities, there is a substantial risk of mobilization of sediment and soils and transport of sediment into receiving waters. The project applicant will implement the following NPDES permit requirements:

- Erosion and Sediment Control BMPs – Erosion control and sediment control BMPs shall be designed, installed, and maintained to reduce the discharge of pollutants from construction sites to the maximum extent practicable and protect water quality;
- Erosion and sediment from slopes and channels shall be controlled by implementing an effective combination of erosion control (source control) and other sediment control BMPs; and
- Soil Stabilization – Stabilization of disturbed areas shall, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased.

1.2 Groundwater: The project will modify water movement across the land surface and infiltration of rainfall and runoff into the groundwater system. Local aquifers underlying the CASP project area are impacted by nitrate contamination. Groundwater in the project vicinity could be subject to increasing salinity due to existing seawater intrusion from Monterey Bay. Both impairments could affect use of groundwater for potable water supplies and for irrigation.

The project, if no means were provided to preserve infiltration capacities, would likely reduce net infiltration and reduce the beneficial effects of this fresh water supply into the groundwater system. The net impact could be an increase in build-up of contaminants in the groundwater in the East Side aquifer.

The project without mitigation will likely decrease the amount of nitrates entering the groundwater from the plan area, due to elimination of agricultural fertilizer application. Water quality basins and BMPs have the potential to add to groundwater contamination levels from other pollutant sources such as fecal coliforms if BMPs are not properly designed, sited, and maintained.

The City of Salinas SWDS (2013) states the following requirements with respect to infiltration systems, whether BPMs or detention/retention/water quality basins:

- No water wells can be located within 100 feet;
- A minimum of 5 feet for indirect infiltration, or 10 feet for direct infiltration, of separation must be maintained between infiltration basins and seasonally high groundwater;
- Site infiltration testing is required whenever a design infiltration rate is used. Maximum design infiltration rates shall be no more than half of the lowest infiltration test result;
- Borings or test pits must be used to identify seasonally high groundwater and potential shallow restrictive soil layers and/or bedrock;
- Direct infiltration is not allowed where there is potential for spills or transportation of contaminants; and
- Indirect infiltration systems (bio-retention basins, vegetated swales, pervious pavements) are allowed in all locations except where highly concentrated contaminants can be expected.

Impact HYDRO-3: Infiltration of rainwater and irrigation water from the proposed project, if not properly managed, could violate the City of Salinas stormwater development standards and contribute to increased contamination of the underlying groundwater.

Mitigation Measure HYDRO-3.1: The project applicant will use LID principles to design, site, and install stormwater basins and BMPs in accordance with City of Salinas stormwater development standards and maintenance procedures, and funding mechanisms will be established for those facilities to assure adequate performance in treating storm water and controlling infiltration into the groundwater.

Impact HYDRO-4: Placement of detention/retention/water quality basins within the stream corridors could result in an indirect infiltration interface being within five feet of groundwater levels during seasonally high flows.

Mitigation Measure HYDRO-4.1: The project applicant will need to verify that groundwater levels in the creek corridors would not rise to within five feet of basin inverts for indirect infiltration methods, would not rise to within ten feet of infiltration inverts for direct infiltration methods, or will have to demonstrate to the satisfaction of the City Engineer that sufficient measures will be in place to ensure that risk of groundwater contamination will be insignificant.

2. **Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

The proposed project, without mitigating features, could reduce infiltration of rainwater and runoff into the local groundwater aquifers due to substantial increases in impermeable areas. The proposed project will reduce the rate of groundwater withdrawals that support agricultural production within the project area.

Required BMPs and detention/retention/water quality basins will be designed to reduce runoff below that which occurs currently during storm events and increase infiltration of that runoff, which could increase groundwater recharge from the plan area.

The City of Salinas prefers detention rather than retention basins because of relatively low soil permeability characteristics in much of the City.

Impact HYDRO-5: The proposed project could decrease groundwater recharge, which could violate City of Salinas stormwater development standards.

Mitigation Measure HYDRO-5.1: The project applicant will design, site, and install infiltration-promoting BMPs and stormwater detention/retention/infiltration basins that satisfy City of Salinas requirements and are sufficient to assure that there is no reduction in groundwater recharge.

3. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The proposed project is expected to implement extensive grading to create a developable site. Maximum cuts and fills of up to 30 feet are anticipated, and as much as 4 million cubic yards of earth could be moved within the CASP project area. Gabilan and Natividad Creek corridors will undergo extensive grading to re-naturalize the corridor and to install detention/retention/water quality basins along both sides of each corridor. Stormwater flows will be collected, managed, and transported via BMPs, drainage features, and storm drains to stream corridors without exposing ground surfaces to erosion or siltation.

Impact HYDRO-6: Extensive site grading, if done incorrectly, could violate the NPDES permit as well as SWDS requirements related to erosion control, and would likely contribute to increased contaminant loadings to receiving waters.

Mitigation Measure HYDRO-6.1: The project applicant will implement appropriate SWPPP procedures to minimize stormwater runoff during site grading as well as the implementation, operation, and maintenance of LID BMPs to minimize erosive runoff and sediment laden runoff as the site is developed.

Impact HYDRO-7: Sediment transport from on-site and/or off-site stormwater flows that deposit into detention/retention/water quality basins along the corridors could impact the ability of the basins to function adequately and/or the stream to adequately convey all flows.

Mitigation Measure HYDRO-7.1: The project applicant will implement appropriate operations, maintenance, and SWPPP procedures to ensure that the potential for siltation of basin floors, which could lead to reduced infiltration capacities, is minimized.

Mitigation Measure HYDRO-7.2: The project applicant will implement appropriate boundary sediment controls and management plans so as to minimize the potential for destabilization of the in-project or downstream channel due to excessive sediment generation or deposition from off-site or on-site sources.

4. **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

Surface runoff from the area will be managed via flow reducing BMPs and detention/retention/water quality basins to prevent local flooding within the site. These features will be designed to reduce peak flows from the plan area into Gabilan and Natividad Creeks to less than such flows under existing conditions.

Impact HYDRO-8: If geomorphic, hydraulic, and hydrologic principles are not taken into consideration and features are not properly designed, restoration of stream corridors in the project area, including placement of detention/retention/water quality basins within the creek corridors, could result in an increase in the rate or amount of flooding either on- or off-site.

Mitigation Measure HYDRO-8.1: The project applicant will submit for approval detailed hydraulic/hydrologic plans, calculations, and design basis reports for any creek corridor restoration plans.

Mitigation Measure HYDRO-8.2: The project applicant will submit for approval detailed stormwater control modeling, calculations, and supporting documentation for proposed detention/retention/water quality basins within the creek corridors.

Mitigation Measure HYDRO-8.3: The project applicant will demonstrate that sufficient measures will be in place to ensure that foreseeable risks associated with placing detention/retention/water quality basins within the creek corridors are minimized to the extent practicable, and that all regulatory requirements will be met.

5. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Stormwater runoff from the project area will be managed via detention/retention/water quality basins and flow reducing BMPs. Preliminary hydrologic mitigation requirements and design procedures, including typical creek corridor widths and depths, and detention/retention/water quality basin sizing calculations, have been completed but BMP designs have not been completed. Within the creek corridors, detention/retention/water quality basins may occupy from one-half to two-thirds of the proposed corridor footprint.

Impact HYDRO-9: Stormwater runoff from the project area, if not managed via detention/retention/water quality basins and flow reducing BMPs, would likely increase peak flows and total runoff volume to receiving creeks to amounts greater than such flows under existing conditions.

<u>Mitigation Measure HYDRO-9.1:</u> The project applicant will submit for approval detailed plans and calculations for detention/retention/water quality basins and flow reducing BMPs designed to meet all regulatory requirements.

Impact HYDRO-10: Stormwater discharges from the project area, if not treated, would likely create additional sources of polluted runoff that are common to urbanized areas with creation of impervious area and the production of urban-related contaminants.

<u>Mitigation Measure HYDRO-10.1:</u> The project applicant will submit for approval detailed plans, calculations, and supporting documentation for water quality BMPs and water quality basins designed to prevent to the maximum extent practicable the creation of new sources of polluted runoff.

Impact HYDRO-11: Downstream conveyance systems, including City of Salinas stormwater drainage system, Carr Lake, and the Reclamation Ditch, have little to no available excess capacity, so any increase in peak flows during major storm events could exceed existing capacities.

<u>Mitigation Measure HYDRO-11.1:</u> The project applicant will submit for approval detailed plans and calculations for detention/retention basins designed to meet the

all regulatory flow detention and release requirements so as to prevent any negative impacts to the existing downstream conveyance systems.

6. Would the project otherwise substantially degrade water quality?

No impact. Potential degradations in water quality due to the proposed project were addressed in response to Impact Analysis Questions 1 and 5, above. All mitigation measures as discussed will be designed to prevent any additional degradation to water quality.

7. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project plan identifies restoration to a more natural creek corridor in the areas currently identified as flood hazard Zone AE on Gabilan Creek and Zone A on Natividad Creek, with detention/retention/water quality basins to be installed and operated along the lateral boundaries of the corridor. Grading plans identify substantial in-fill in the flood hazard area shaded Zone X to prepare for mixed-use development plans that will include housing.

Impact HYDRO-12: Flood hazard Zones AE and A are identified along the two creek corridors within the CASP project area. If grading is not properly carried out and housing were to be placed within these boundaries, those housing units could be subject to flooding.

Mitigation Measure HYDRO-12.1: The project applicant will need to submit an application for a letter of map revision based on fill (LOMR-F) to the City of Salinas floodplain administrator and FEMA with pertinent information for approval that indicates no building construction will take place within remapped FEMA flood zones AE and A.

Impact HYDRO-13: Shaded Zone X, a special flood hazard area, is located in the Gabilan Creek watershed, east of and adjacent to the existing creek corridor. If housing were to be placed within these boundaries, those units could be subject to flooding.

Mitigation Measure HYDRO-13.1: The project applicant will submit for approval detailed grading plans and calculations designed to place enough fill onto the shaded Zone X area as to raise the land surface elevation above the base flood elevation so that flooding hazards become negligible. The project applicant will need to submit an application for a LOMR-F to the City of Salinas floodplain administrator and FEMA with pertinent information for approval.

8. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

A series of detention/retention/water quality basins are proposed to be built along the lateral edges of restored creek corridors and may take up 50-66 percent of the proposed corridor space within existing Zones AE and A. Existing corridor sediments in flood Zones AE and A are primarily sandy materials with high infiltration capacities. The basins would function as stormwater and low flow receiving basins for all flows generated by the project area. Some basins could be overtopped and inundated during certain high flow runoff conditions by flows from upstream locations.

Impact HYDRO-14: If not properly designed, implemented, and maintained, a naturalized creek corridor that is largely bounded by detention/retention/water quality basins could result in flood flow impedance or redirection.

<u>Mitigation Measure HYDRO-14.1:</u> The project applicant will submit for approval detailed plans, calculations, and design basis reports for creek corridor restoration, including detention/retention/water quality basins, within the flood hazard extents identified as Zones A and AE that provide assurances that during large storm events, creek flows and sediment transport from upstream sources are not impeded at the same time as when the adjacent basins are at or near capacity.

<u>Mitigation Measure HYDRO-14.1:</u> The project applicant will provide sufficient supporting documentation and calculations to address sediment transport issues at the downstream boundaries of the project area to the extent practicable.

Impact HYDRO-15: Sediment transport of fine-grained materials from upstream and local sources could clog infiltration capacities and could fill required storage space within the stormwater basins.

<u>Mitigation Measure HYDRO-15.1:</u> The project applicant will provide sufficient supporting documentation and calculations prior to construction that risks associated

with reduction of infiltration capacity in the detention/retention/water quality basins will be minimized to the extent practicable.

Mitigation Measure HYDRO-15.2: The project applicant will provide operations, maintenance, and SWPPP procedures such that any detention/retention/water quality basin issues associated with sedimentation or loss of infiltration capacities are promptly and adequately addressed.

Impact HYDRO-16: The non-cohesive nature of corridor sediments could result in embankment side slope failures of the detention/retention/water quality basins that are proposed to be located along the lateral extents of each creek.

Mitigation Measure HYDRO-16.1: The project applicant will provide sufficient supporting documentation and calculations that risks associated with basin embankment side slope failure because of the non-cohesive nature of Gabilan and Natividad Creek corridor sediments will be minimized to the extent practicable.

Mitigation Measure HYDRO-16.2: The project applicant will provide operations, maintenance, and SWPPP procedures such that any detention/retention/water quality basin issues associated with embankment side slope failures are promptly and adequately addressed.

9. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. No levees or dams exist in the vicinity of the CASP project area. Portions of the Salinas Valley have been identified as subject to flood risk due to failure of the San Antonio or Nacimiento dams, which are located in the upper reaches of the Salinas River watershed. The elevation of the project area and its distance from the Salinas River channel make it highly unlikely that failure of either dam or failure of any of the levees located along the Salinas River channel would cause flooding.

10. Would the project be exposed to a risk of inundation by seiche, tsunami, or mudflow?

No impact. Tsunami inundation maps for the area (CEMACGS, 2009) show no risk of tsunami inundation for the project area. No water bodies that could produce seiche-related inundation are in the vicinity of the project area. No information regarding mud flow potential in the project area was found. Grading plans for the project include reduction of steep slopes within CASP project area thus minimizing potential for unstable slopes and mudflows. The site is elevated sufficiently above sea level to preclude any risk of inundation due to sea level rise.

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APPENDIX A

Geomorphic Assessment of Gabilan and Natividad Creeks

MEMO

To: De Novo Planning Group

From: Anne Senter, Ben Roberts

Date: September 1, 2017

Subject: Geomorphic Assessment of Gabilan and Natividad Creeks

Introduction

In support of the Salinas Central Area Specific Plan (CASP) Environmental Impact Review (EIR) process, Balance staff members conducted a field site visit on April 20, 2017 of the Gabilan and Natividad Creek channel corridors within and adjacent to the CASP project area. This addendum to the Hydrologic and Water Quality chapter of the EIR is intended to identify pre-project conditions upstream of, within, and downstream in the creek corridors associated with the CASP project (**Figure 1**).

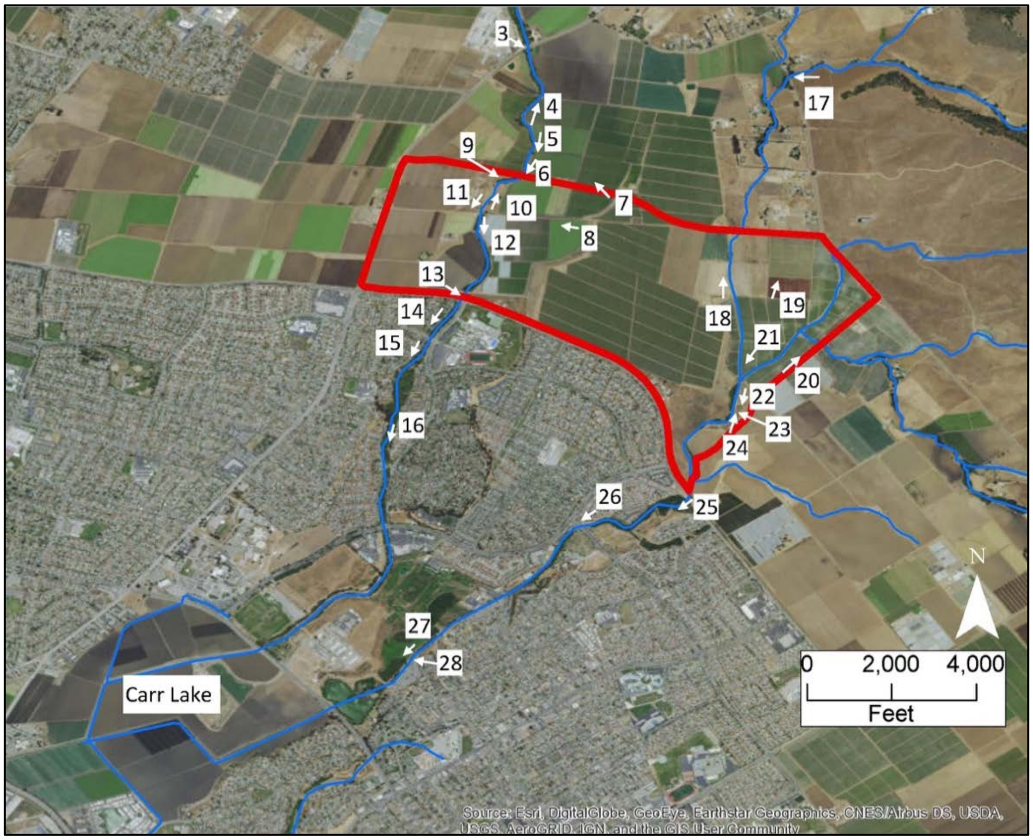

Figure 1 Photo locations of images described in this memo.

Existing creek channel conditions for Gabilan Creek and Natividad Creek are briefly described next, and then an overview of historical conditions from about 100 years ago are included for initial context. Thereafter, captioned photos provide a narrative of existing conditions observed during field reconnaissance efforts for Gabilan Creek and Natividad Creek.

Field Observations

Observations recorded in the field indicated that both creeks were dynamic in response to the prevailing wet winter climate conditions and rainfall-runoff patterns of the wet winter of 2016-2017 (water year 2017). This dynamism was expressed by variations in discharge and sediment transport loads, which were in evidence as high water marks (indicating the highest flows of the season; **Figure 3**, **Figure 9**, and **Figure 12**), overbank sediment deposition (**Figure 11**, **Figure 17**, **Figure 22**, and **Figure 23**), and channel braiding behavior (**Figure 10**, **Figure 15**, and **Figure 25**). These observations indicate the noticeable effects of abundant rainfall, runoff, and sediment transport associated with high flows in.

Under existing conditions, both creek corridors within the CASP project area are heavily impacted as a result of agricultural practices that include channelization of the creeks. Agricultural fields and service roads border the channel banks (**Figure 4**, **Figure 5**, **Figure 6**, **Figure 18**, **Figure 20**, and **Figure 22**) in many places, and in these areas riparian vegetation may be absent. Where riparian corridors are present, root structures increase soil cohesion and provide additional stability to channel banks. Areas without riparian vegetation have less cohesive banks, leading to higher degrees of braiding behavior where lateral space allows (**Figure 10** and **Figure 11**).

In the Gabilan Creek corridor, sediment loads consist of fine-grained sandy-silty materials that formed mid-channel bars in some locations, exhibiting braided channel behavior indicative of drainages with abundant fine sediment sizes (**Figure 14** and **Figure 15**). Sediment sizes in Natividad Creek are even finer, consisting primarily of silty-sandy materials (**Figure 23**). The Natividad Creek corridor within the CASP project area is more confined than Gabilan Creek, naturally as well as a result of agricultural practices, so bar behavior was less evident. However, downstream of Boronda Road, once the channel was not confined (**Figure 25**), formation of instream bars and braiding behavior were evident in this system.

Field estimates of channel geometry and flow velocity observed on the day of reconnaissance indicate that Gabilan Creek flows were on the order of 10 ft^3/sec (**Table 1**), whereas Natividad Creek flows were about 2 ft^3/sec downstream of the tributary confluence in the CASP area (**Figure 21**). On Gabilan Creek, measurements were taken at **Figure 10** and **Figure 11** and on Natividad Creek measurements were taken at **Figure 21** and **Figure 22**.

Table 1 Flow characteristics.

	Gabilan Creek		Natividad Creek	
	Baseflow	**Flood flow**	**Baseflow**	**Flood flow**
Width (ft)	12.5	150	3	60
Depth (ft)	0.3	3	0.4	3
Velocity (ft/sec)	2.5	5	1.7	5
Discharge (ft^3/sec)	9.4	2250	2.0	900

Notes:

Baseflow was measured using the float method in the field

Flood flows were approximations using high water mark observations obtained in the field

Evidence of overbank flows were visible within both creek corridors. Gabilan Creek contained abundant organic materials (mostly dead branches) lodged onto the upstream side of riparian vegetation (**Figure 9**) and along a fence line. These materials provide the evidence for the highest flows of a water year and are termed “high water marks” (HWM). HWMs and overbank sediment deposition (**Figure 11**) provide evidence of flow depths during the largest flood events of the season. Natividad Creek contained fewer HWMs (however, see **Figure 28**), but showed ample signs of overbank sediment deposition (**Figure 22**). Based on field estimates of HWMs left by the largest flows of the winter season on each creek, the highest flood flows of the winter were also estimated (**Table 1**).

Differences in watershed size and elevations are likely responsible for most of the variance between estimated baseflow and flood flows (**Table 1**). Gabilan Creek to the CASP downstream boundary is about 40.3 sq. mi. (PACE, 2007) in area compared to Natividad Creek to the CASP downstream boundary at 9.3 sq. mi. (PACE, 2007), so Gabilan Creek watershed is four times larger than Natividad Creek, with commensurately more runoff potential. Likewise, the highest elevation in Gabilan Creek is about 3,100 feet above mean sea level at Fremont Peak, whereas Natividad Creek originates in the lower foothills at an elevation of 1,420 feet (Senter and others, 2017). More total rainfall across a larger watershed area means that Gabilan Creek flows likely persist longer and at higher rates than Natividad Creek. However, it is important to note that the highest flows in each rain event could potentially be relatively equivalent through the CASP project area, as soil conditions in Natividad Creek indicate higher runoff potential.

Within the CASP project area, the overall condition of Gabilan and Natividad Creeks are highly impacted systems, incised, channelized, and managed as drainages through agricultural fields, that nevertheless continue to exhibit dynamic behavior and contain discontinuous, remnant riparian corridors. Significant changes to the channels are expected with development of the land from agricultural to urbanized, so it will be necessary that creek corridor design bases and proposed conditions modeling be conducted with proposed grading plans to best plan for potential flood hazards, stormwater flows, and other hydrologic and hydraulic project needs.

Historical Conditions

A historical soils map (**Figure 2**, Carpenter and Cosby, 1925) provides evidence that Gabilan Creek had a wide lateral extent through which high flows spread out especially in wet years. A closer look shows two stream traces, one in the Hanford sand (Hs) and the other in the Dublin clay loam (Da) portion of the stream corridor. The stream traces do not show a connection into the Hanford very fine sand (Hv) soils leading to Carr Lake, highlighting the ephemeral nature of the flow regime in this watershed. The stream trace in Da soils is shown terminating into a peaty soils (P) area, suggesting a recurrent ponding area where vegetation thrived, died, and accumulated in moist conditions for many years. There is a stream trace to the west that rises out of the Chular sandy loam (Ch) indicating shallow subsurface flows emerging from the alluvial fan. Downstream of the Hv soils wetlands extend to Carr Lake. These observations are indicative of a wide channel/floodplain of interconnected surface-subsurface flows.

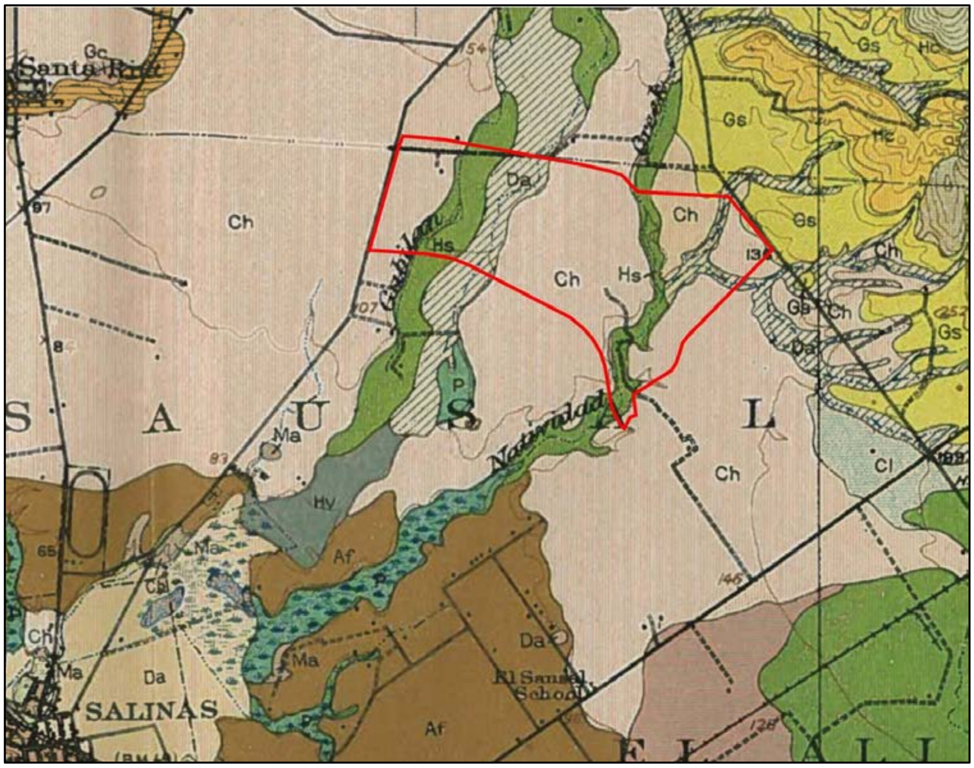

Figure 2 Approximate CASP project area location drawn onto soils map from 1925 Symbols: Hs = Hanford sand, Da = Dublin clay loam, Ch = Chular sandy loam, P = peat, Hv = Hanford very fine sand, Af = Antioch fine sandy loam. Wetlands (called swamp in 1925) are illustrated with vegetation symbols at the lower ends of both creeks. Carr Lake is located where "Salinas" is written, consisting mostly of Da soils. Source: USDA soils map, Carpenter and Cosby, 1925.

Natividad Creek is much narrower in its lateral extent. The corridor exhibits similar soils characteristics, with a predominance of Hs soils along the northwesterly mainstem and Da soils along the primary tributary from the east. Creek traces show a regular connection along the corridor until termination into a swamp/wetlands area that begin farther away from Carr Lake, indicating persistent subsurface flows associated with Natividad Creek.

Existing Conditions

1. <u>Gabilan Creek Corridor</u>

The Gabilan bridge on Natividad Road is upstream of the CASP project area. **Figure 3** indicates that a large quantity of fine-grained sediment has deposited upstream of and under the bridge.

Wood and other organic material deposition can be seen upstream of the bridge along with growing vegetation. The high-water mark is ~2 feet above deposited sandy-silty sediments, as indicated by a HWM line on the bridge bents that is difficult to see in the shadows of this image.

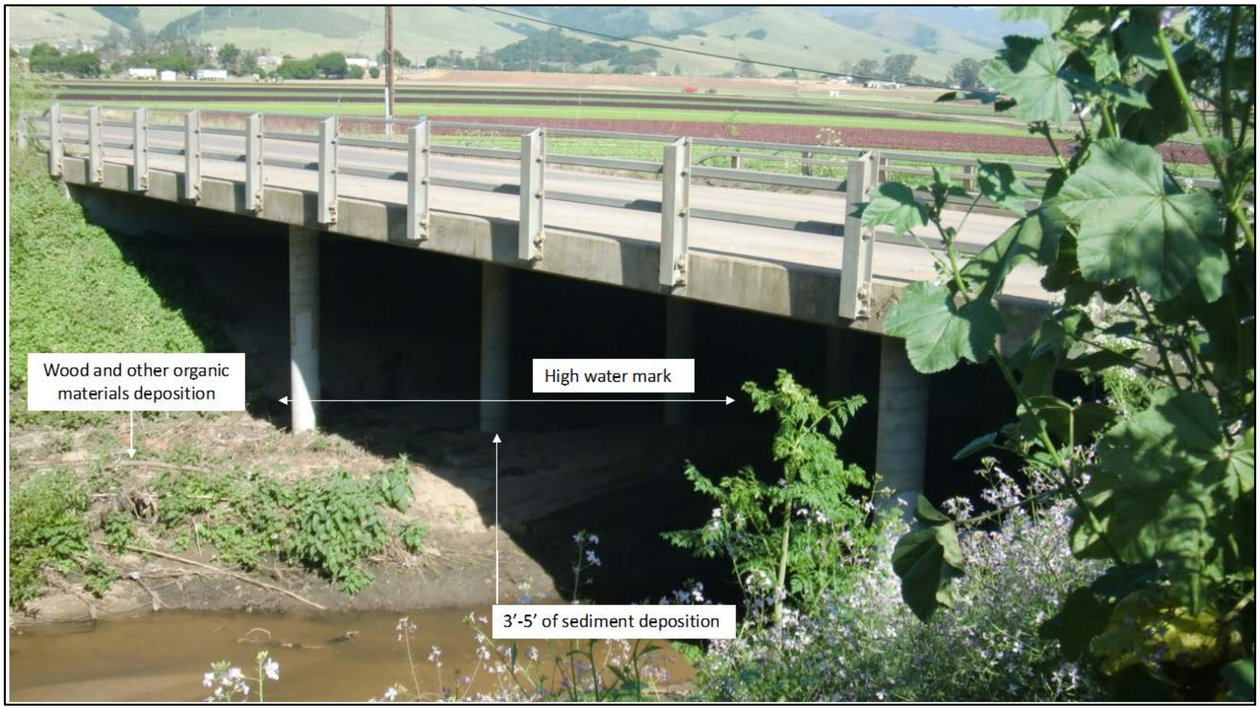

Figure 3 *Gabilan Creek at bridge on Natividad Road with distinct indicators of high flow events experienced by the region in the 2016-2017 wet winter season. Downstream to the right.*

Figure 4 is within the CASP project area, looking upstream and north of the CASP project area. Gabilan Creek in this area runs alongside a winding hillslope and supports a riparian corridor along its right bank (as defined when looking downstream) whereas the left bank is encroached upon by agricultural fields and a service road. The sediment fence was likely torn out and service road was inundated during the highest winter flows, and the roadway/fencing rehabilitated for use during planting. Note small sand bars in the channel, an indication of fine-grained sediment braiding behavior.

Figure 4 Looking north and upstream along Gabilan Creek. The creek is bounded by a hillslope on the right bank with trees, and by an agricultural service road on the left bank.

Figure 5 provides a strong indicator of the erosive power of high flows. This tree fell at an unknown location most likely from the right bank riparian corridor. The dead leaves provide an indication that the tree was uprooted during the 2016-2017 wet winter season; long enough for leaves to brown but not long enough for leaves to fall off the branches. The tree was likely transported as suggested by the position of the rootwad on the left bank edge (definitely not where it fell from); perhaps just a small distance but that remains unknown.

Figure 5 Dead tree newly recruited into the Gabilan Creek channel over the 2016-2017 wet winter season, looking downstream.

Figure 6 was taken looking downstream, and shows a much smaller tree that was uprooted from a channel bank and deposited into the channel. Even small obstructions such as this can provide the necessary roughness elements that promote slower velocity zones where transporting sediment can settle out of the water column. This process can be seen here just downstream of the dead tree where sand bar braiding has formed as a direct result of the variance in flow velocities promoting sediment deposition in the lee (downstream) of the tree.

Figure 6 Service road and fields along left bank and riparian corridor on right bank, looking downstream. Vegetation was uprooted, transported, and deposited across the channel. Sand bar downstream of vegetation is an indication of sediment transport and depositional processes in this area.

Figure 7 is looking northwesterly toward Gabilan Creek, from the elevation divide which rises between the Gabilan and Natividad Creek watersheds. The treeline in the background indicates Gabilan Creek. The fields in the foreground indicate the extent of the historical natural floodplain (also see **Figure 2**). **Figure 8** is also looking west toward the treeline indicating Gabilan Creek. The rise in the foreground is an indication of the low-lying hillslope that separates Gabilan Creek from Natividad Creek, reworked into service roads to support agricultural needs.

Figure 7 *Looking northwesterly across the historic Gabilan Creek alluvial fan, channel identified by riparian tree line. Upstream is to the right.*

Figure 8 *Looking west across the historic Gabilan Creek alluvial fan, channel identified by riparian tree line. Upstream is to the right.*

Figure 9 provides evidence of the highest flows of the 2016-2017 wet winter season. Flows were on the order of 4 feet above the current wetted channel elevation. Woody materials consisted mostly of broken branches in a range from 1-10 inches in diameter, and inches to multiple feet in length.

Figure 9 *Streamwood and sediments transport downstream during flood conditions. Streamwood has collected on the upstream side of stream-edge riparian trees, providing an indication of how deep water was in this area. The stadia rod showed flows were about 4 feet*

Figure 10 is looking upstream at an area of the creek that is not confined, is not set against the hillslope, and has no riparian corridor. This image indicates that when riparian vegetation is not present, the fine sediments produced by this watershed combined with grassy vegetation are not strong enough to hold banks in place, and as a result, the stream corridor expands. Therefore, high flows had a chance to spread out because they were not confined, which over the past winter resulted in sediment deposition across perhaps as much as 200 feet of floodplain adjacent to the creek in this particular area (measured as approximately 100 feet on the left bank and estimated as equivalent on the right bank).

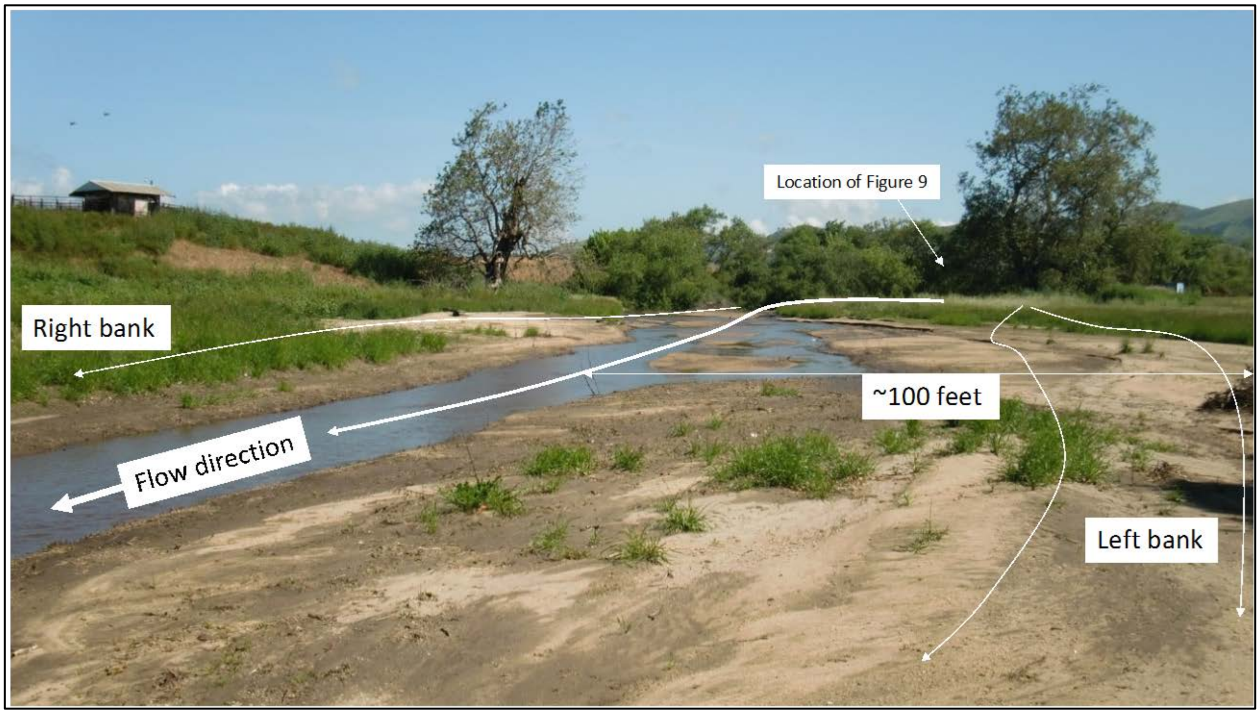

Figure 10 Looking upstream. The channel expands in width when the left bank is not confined by fields and service roads and moves away from being directly against the hillslope on the right bank. High flows may have spread more than 200 feet wide across this open

Figure 11 shows the Gabilan Creek channel when looking downstream from the position of the worker who took the upstream perspective image in **Figure 10**. **Figure 11** provides evidence of at least four stages of flow experienced by the creek over the 2016-2017 winter season. Starting from left to right, (A) provides an indication of the highest flows of the year. A substantial amount of sediment was deposited where flows could expand laterally onto the floodplain, where velocities can slow enough for sediments to drop from the water column. This process illustrates just what functioning floodplains do: provide locations for sediment deposition during flood conditions. The arrow perpendicular to creek flows labeled "hillslope runoff" indicate flows from the upslope area after (A) sediments were deposited. The (B) delineation shows a second flow event that was smaller than the (A) event, carving a new lateral extent from the higher flow deposition. The sediments deposited in this event appear to have contained grass seeds that have flourished. The (C) delineation shows another set of flows that scoured out sediments such that grasses are not growing in this area. Finally, (D) shows the current low flow wetted channel, which in many years with less total rainfall would contain lower flows, or potentially no flows, at this time of year (see **Figure 1** and that discussion of more natural conditions).

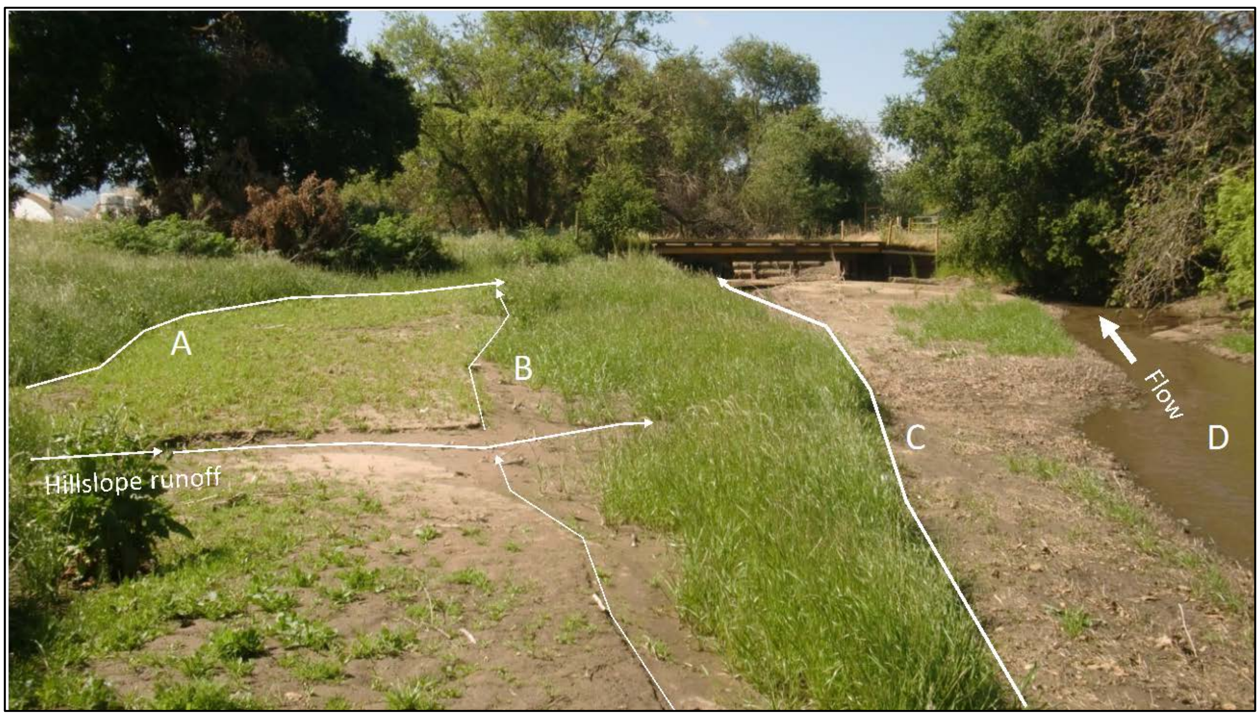

Figure 11 *Channel width allows flows to spread out and slow down. From left to right in this photo, there are four distinct areas (A-D) that yield evidence of a series of different flow events.*

Figure 12 provides another indication that flow depth in confined channel conditions was on the order of 4 feet deep.

Figure 12 Streamwood deposition against roughness elements in the channel, looking downstream. High flows were ~4 feet above channel bed.

An existing grade control structure is located at the downstream extent of the CASP project area (**Figure 13**) at Boronda Road. The grade control helps maintain the current slope in the CASP area; any changes to the structure will have to be designed in concert with the overall development.

Figure 13 Looking upstream on Gabilan Creek at grade control structure, south edge of CASP project at Boronda Road and Independence Boulevard.

Just downstream of Boronda Road, **Figure 14** and **Figure 15** show that fine sediments continue to braid within the channel where space permits. The channel is set within a trapezoidal floodway most likely designed to contain a 100-year flood event. The sloped banks are vegetated, and the channel is acting dynamically with its sediment supply.

Figure 14 Looking downstream at braiding sand bars and Danbury Street bridge, just downstream of Boronda Road.

Figure 15 Looking downstream from Danbury Street bridge. Fine-grained sediments naturally form braided systems.

Another grade control structure is located along Little River Drive as the creek flows toward Carr Lake (**Figure 16**). Grade control structures such as these are used in part to promote sediment deposition on the upstream side of the structures, potentially as a means to reduce sediment transport into Carr Lake and through the lower Reclamation Ditch system.

Figure 16 Concreted rip rap boulders control the channel gradient along Little River Drive.

This concludes the field reconnaissance narrative of Gabilan Creek; the field reconnaissance narrative for Natividad Creek is below.

2. Natividad Creek Corridor

Upstream of the CASP project area, along Natividad Creek at the creek crossing on Old Stage Road, evidence of high flow sediment deposition was found in the field adjacent to the channel (**Figure 17**). Under historical conditions (**Figure 2**) areas adjacent to the channel were naturally floodplains where sediment deposition over millennia is a primary reasons why agricultural lands are so productive in the Salinas Valley.

Figure 17 Evidence in adjacent agricultural field of overbank flows on Natividad Creek at Old Stage Road crossing.

Within the CASP project area, the Natividad Creek northwesterly mainstem (**Figure 18**) is channelized and does not support a riparian corridor as it traverses strawberry fields.

Figure 18 Looking north and upstream along Natividad Creek mainstem channel. Creek is highly channelized through much of the CASP project area.

A low rise in elevation (**Figure 19**) separates the mainstem from the northeastern tributary (**Figure 20**), which is also channelized and likewise no longer supports a riparian corridor as it traverses strawberry fields.

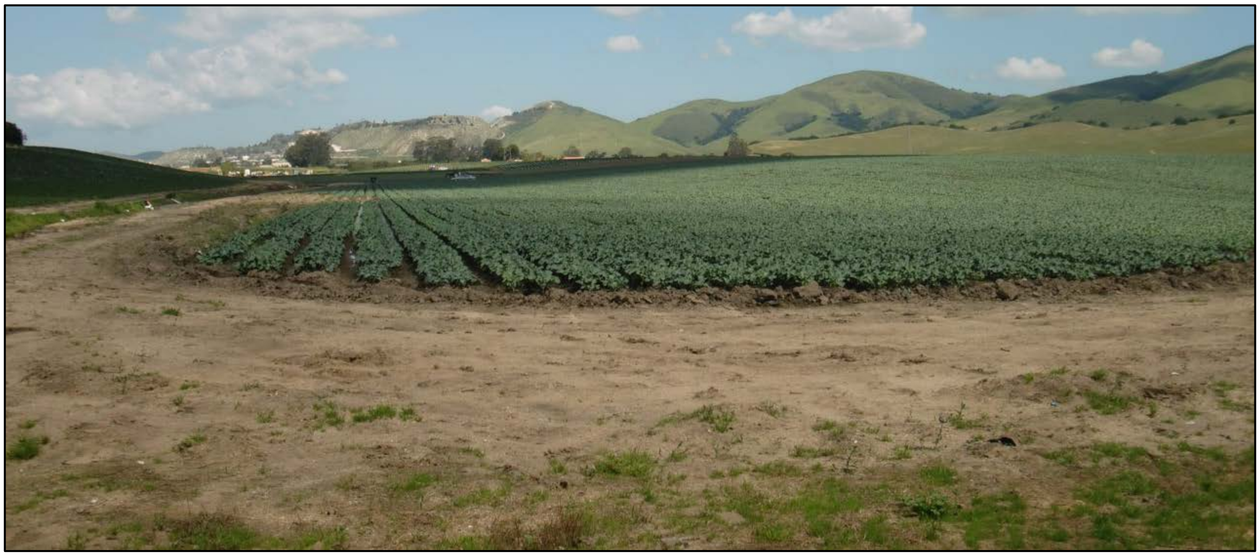

Figure 19 Looking northeast between Natividad Creek mainstem (left edge of image) and tributary channel (not visible to right). Strawberry fields predominate in the CASP project area.

Figure 20 Looking east and upstream along Natividad Creek tributary channel, which is highly channelized with no riparian corridor. Headwaters of the Natividad Creek are in the foothills; higher mountains in the distance drain westward to Gabilan Creek.

The confluence of the two channels (**Figure 21**) shows recent reworking in the area as a result of 2016-2017 wet winter flooding, and indicates that woody materials transported through the channelized stream sections from upstream areas such as from the riparian vegetation observed at Old Stage Road. Note also that there is a riparian corridor on the right bank that starts at this confluence and persists to the downstream end of the CASP project area at Boronda Road.

Figure 21 *Looking south and downstream at the confluence area of Natividad Creek mainstem and tributary channel. A riparian corridor is present along the right bank (when looking downstream) from this point to Boronda Road. Piled sediment and wood indicates agricultural reworking of flood-transported sediments, vegetation, and streamwood pieces.*

Natividad Creek experienced high flood flows that were similar to those on Gabilan Creek, as would be expected given the close proximities of the creeks and similar originations from the Gabilan Range. The riparian corridor on the right bank is situated directly adjacent to an existing hillslope, which naturally confined higher flows from spreading in that direction. Instead, flows spread out along the left bank floodway downstream of the confluence (**Figure 22**).

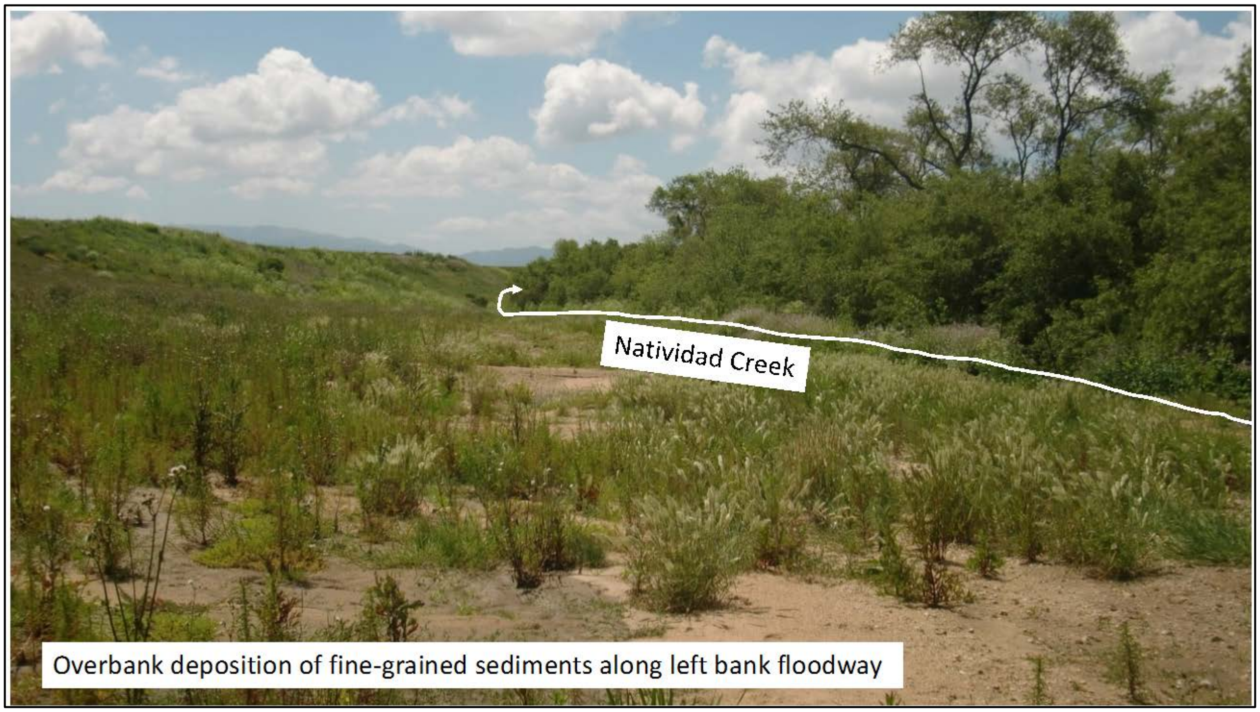

Figure 22 Looking south and downstream at a wide expanse of overbank sediment deposition from Natividad Creek flooding in wet winter 2016-2017. A riparian corridor and an adjacent hillslope are present along the right bank (when looking downstream) from this point

Field conditions indicated that in at least some locations along the floodplain, over one-foot of sandy materials were deposited. These sediments were predominately sands to silts, with some small gravels up to ¼ inch in diameter (**Figure 23**). On average, mostly sandy sediment sizes in Natividad Creek were larger compared to a smaller silty-sandy sediment size in Gabilan Creek.

Figure 23 Grain sizes ranging from silty to sandy deposited onto the left bank floodway on Natividad Creek in winter2016-2017 ranged from < 0.1 inch to about 0.25 inch.

The channel remained confined to the end of the CASP project area (**Figure 24**), but dynamic sediment behaviors were evident in narrow sand bars that had formed along the channel boundaries.

Figure 24 Looking upstream along Natividad Creek in the CASP project area, downstream of the confluence of the mainstem and tributary channel. Stream remains channelized with narrow sand bars forming along the channel edge and a riparian corridor on the right bank

Directly downstream of Boronda Road, the creek exits into what may be its remaining historically wide valley bottom in Natividad Creek Park (**Figure 25**). At this location, the creek immediately exhibits similar braiding behavior to that observed in Gabilan Creek.

Figure 25 Looking downstream along Natividad Creek just below Boronda Road. Stream opens into a valley bottom without confinement, allowing the creek to exhibit braiding behavior like that of Gabilan Creek.

Natividad Creek exits the valley bottom at Freedom Parkway (**Figure 26**) into an open culvert as it flows downstream toward Carr Lake.

Figure 26 Looking downstream under Freedom Parkway bridge along Natividad Creek. The stream exits the valley bottom into a culvert for passage under the roadway. The stepped culvert provides additional floodway space during high flow conditions.

At Garner Boulevard (**Figure 27**), evidence of high-water marks (**Figure 28**) along the right bank indicated ~4-5 feet of flow depth.

Figure 27 Looking downstream along Natividad Creek at Garner Boulevard.

Figure 28 Wood captured along a fence line adjacent to Natividad Creek at Garner Boulevard indicate a high-water mark of ~4 feet above the channel bed from winter 2016-2017 flows.

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APPENDIX G – WATER SUPPLY ASSESSMENTS

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DRAFT
December 8, 2014

SB 610 Water Supply Assessment
For
Half of Central Specific Plan Area

Prepared by

Yarne & Associates, Inc.

For

California Water Service Company
254 Commission Street
Salinas, CA 93901

TABLE OF CONTENTS

Introduction and Background Information

In 2006, the City of Salinas initiated planning for the West, Central and East Specific Plan Areas (SPA): West, Central and East. Due to various factors, specific plans, EIRs and Water Supply Assessments (WSA) were not prepared or completed in the ensuing 8 years. In October 2014, developers requested Cal Water prepare a WSA for the half of the Central SPA that the California Public Utility Commission (CPUC) recognized as being served by Cal Water.

Senate Bill 610 (SB 610) (Chapter 643, Statutes of 2001 effective January 1, 2002) requires information on water supply be provided to local public agency decision-makers prior to approval of development projects that meet or exceed any of the following criteria:

1. A residential development of more than 500 dwelling units.
2. A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet.
3. A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A hotel or motel with more than 500 rooms.
5. An industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons occupying more than 40 acres of land or having more than 650,000 square feet of floor area.
6. A mixed-used project that includes one or more of the projects specified above.
7. A project that would demand an amount of water equivalent to, or greater than the amount of water required by a 500 dwelling unit project.

Since Cal Water's half of the proposed Central SPA exceeds the first criteria, a SB 610 WSA is required.

This WSA addresses the adequacy of the water supply to meet estimated demands of the development project over the next 20 years in addition to those of Cal Water's existing customers and other anticipated future users under normal, single dry year and multiple dry year conditions. SB 610 requires that WSA information be included in the administrative record that serves as the basis for an approval action by the local public agency. Per Section 10910(c) (3) of the Water Code, the WSA is based on information contained in the 2010 Salinas District Urban Water Management Plan (UWMP) and from updated information developed by Cal Water. Alco Water Company is the water utility providing service to the other half of the Central SPA and is responsible for preparing a WSA for its service area.

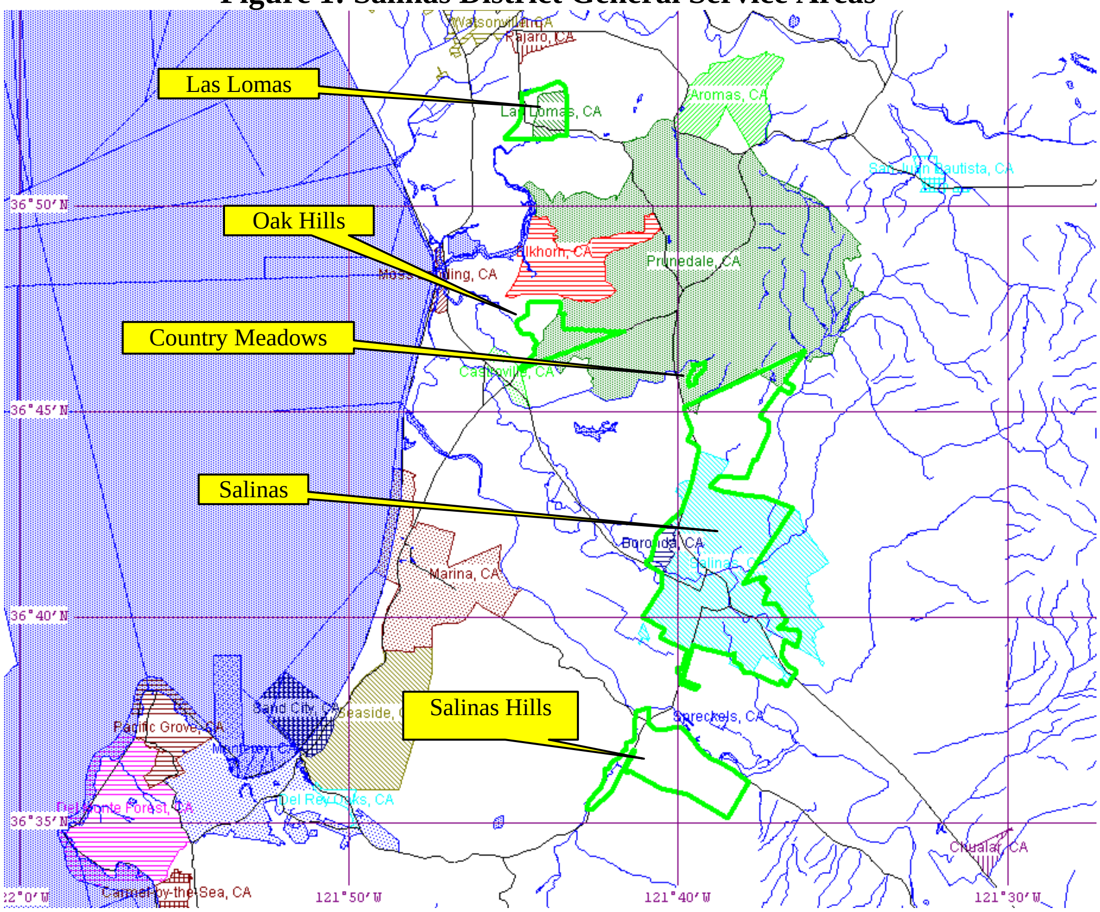
The location of the Central SPA is shown in Appendix A: Land Use Plan for Cal Water's ½ of Central Specific Plan Area (SPA) for City of Salinas taken from the City of Salinas General Plan – Future Growth Areas. The Central SPA, located in the northern part of the City of Salinas, is bounded on the west by Natividad Road, on the south by East Boranda Road, on the north by Russell Road and Old Stage Road and on the east by Constitution Blvd.

Cal Water Salinas District Service Areas

The Salinas District is comprised of several service areas shown in Figure 1.

The Salinas and Bolsa Knolls systems are linked hydraulically while the other smaller systems are separate. In the 2010 UWMP, data on demand and services was combined.

Figure 1: Salinas District General Service Areas

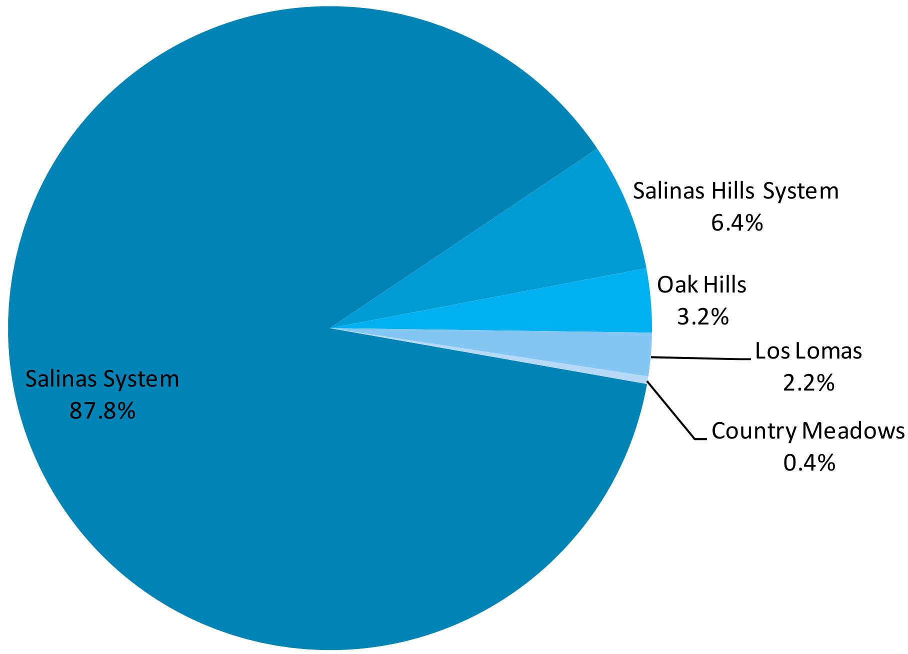


Cal Water's Salinas District encompasses most of the Salinas urban area, which is primarily a residential community supported by an agricultural economy. The major transportation route in the area is State Highway 101. The Southern Pacific Railroad also serves the area.

The Salinas District serves residents and businesses of the City of Salinas and those of the unincorporated communities of Bolsa Knolls, Las Lomas, Oak Hills, Country Meadows, Salinas Hills, Buena Vista and Indian Springs. A single distribution system provides service to the City of Salinas and Bolsa Knolls. Smaller hydraulically isolated distribution systems provide service to the other communities.

Figure 2 shows the percentage of customer services in the areas served. The City of Salinas has 81% of all customers within the Salinas District.

Figure 2: Salinas District Distribution of Customer Services in Areas Served (2010)



Water Demand Projection: ½ of Central Specific Plan Area

Cal Water will serve the western portion of ½ of the Central SPA and is demarcated by the PG&E electric transmission line that bisects the plan area in a north-south direction. Cal Water's area consists primarily of residential land uses: 198.54 acres of 1,274 dwelling units. It includes 19.61 acres for two public schools and a fire station, and 16.55 acres of irrigated parks. Non water using areas include: 33.31 acres of open space and 4.78 acres for utility functions (Cal Water and PG&E).

The water demand projection is based on the data shown in Table 1 and assumptions that water conservation measures will comply with existing codes and regulations.

Table 1
Cal Water's ½ Central Specific Plan Area: Land Use Summary for Potable Water Use

Category	Dwelling Units	Acres
Residential		
Sentrini		
(APN 211-03-008 & 211-013-003)	272	37.25
Noon		
(APN 153-091-003)	23	3.92
Christensen		
(APN 153-91-001 & 005)	663	75.15
Probert and Condiroli Trusts		
(APN 153-91-005)	238	70.81
Gladstone Farms		
(APN 211-013-004)	78	11.41
TOTAL	1,274	198.54
Public Facilities		
Parks:		16.55
Schools/Fire Station:		19.61
Grand Total:		234.70

Using City of Salinas Planning Department guidelines of 3.67 persons per residential dwelling unit, the estimated population of Cal Water's ½ of Central SPA is 4,676 persons.

Residential Demand:

Cal Water data for Salinas District single family residential water use for the period from 2005 to 2010 averaged 125,396 gallons per service per year. Conservatively assuming that all 1,274 projected dwelling units use this amount of water yields 159,754,500 gallons per year or 490.37 AFY. This is equivalent to an average daily per capita consumption 93.6 gallons/day.

Public Facilities:

Schools/Fire Station: Planning Design Consultants estimates the water use factor for schools is 3,500 gallons/day/acre (Rancho San Juan Specific Plan, 2003). This factor is used here for the schools and the fire station proposed in Cal Water's ½ Central SPA.

Estimated annual average daily public facilities water demand: 19.61 acres x 3,500 gallons/day/acre = 68,635 gallons/day or 77.0 AFY

Parks:

Planning Design Consultants estimates the water use factor for active parks is 2,000 gallons/day/acre. This factor is used here for the active parks proposed in Cal Water's ½ Central SPA. Open space areas will not be irrigated with potable water supplied by Cal Water.

Estimated annual average daily active park water demand: 16.55 acres x 2,000 gallons/day/acre = 33,000 gallons/day or 37.1 AFY

Total Estimated Average Daily Water Demand for Cal Water's ½ Central SPA: 604.3 AFY or 539,036 gallons/day

California Water Code 10631, Paragraph (e) (2), requires a water use projection (average annual demand forecast) in five-year increments for a 20 year period. It is assumed that the time required for approval of the Central SPA and certification of the EIR is one year (2015) and that preparation of developer subdivision plans and tentative maps will occur concurrently. It is assumed that City approval of the latter will require a half a year and will occur in October - November 2015 and that construction of plan area infrastructure and residential dwelling units will start in the first quarter 2016. If it takes approximately 20 months for infrastructure to be completed and the first phase of homes to be built, sold and initial occupancy to start, then water demands will start in 2018. If it takes 17 years for all proposed facilities to be completely built and fully occupied the projected water demand in 2035 will be 604.3 AFY.

Assuming development occurs linearly, the water demand forecast for Cal Water's ½ Central SPA in five-year increments is as follows:

Year	**Cal Water's ½ Central SPA Average Annual Water Demand (AFY)**
2015	0
2020	71.2
2025	249
2030	427
2035	604.3

Salinas District Water Demand

Cal Water designates customer classifications as follows:

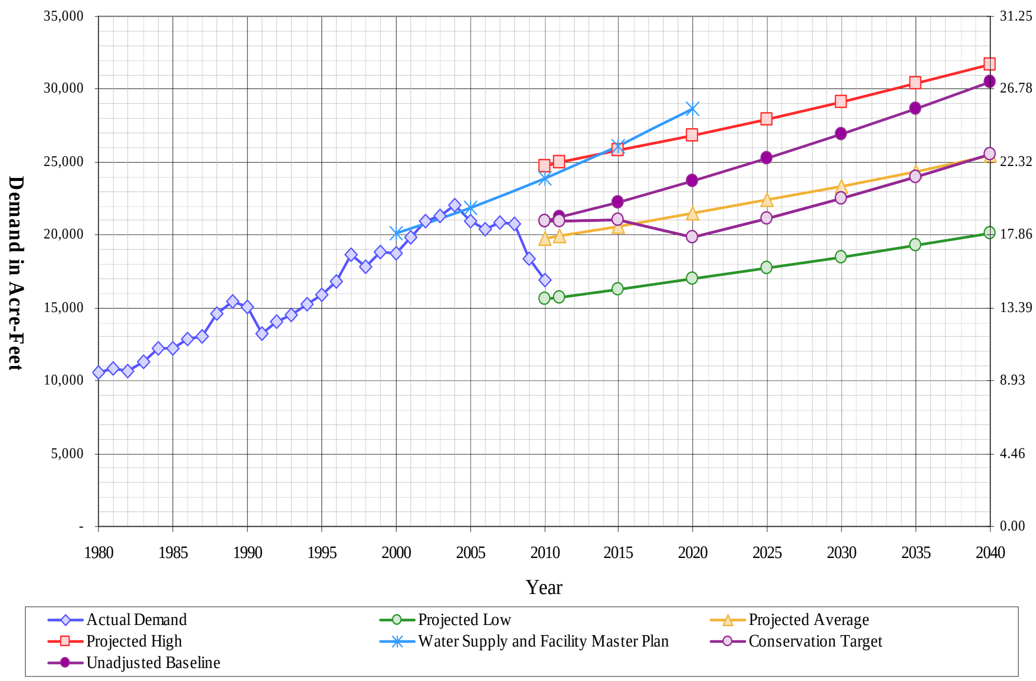
- Single Family Residential
- Multifamily Residential
- Commercial
- Industrial
- Government
- Other

Cal Water historically made water demand projections by calculating growth rates for each customer classification. These growth rates were based on five or ten year averages of service count data and were extended over the planning horizon resulting in projected service counts. Three sets of demand per service values were calculated: low, average, and high. These were applied to the projected service counts to calculate projected water demands for each customer classification. As a result of Senate Bill 7 (SBx7-7) this method is no longer used for projecting total water demand, but it is used as for calculating projected services, population, and distribution of demand by customer classification.

SBx7-7 requires two demand projections be made: 1) an unadjusted baseline demand, and 2) a target demand. The unadjusted baseline water demand projection is the total demand expected without reduction in water use due to an expanded water conservation program. It is equal to forecasted population multiplied by the 2005-09 average, or 139 gpcd.

The target water demand projection assumes achievement of water conservations savings and is calculated by multiplying SBx7-7 target gpcd values and projected population. These conservation savings are illustrated in the comparison of projected demands shown in Figure 3.

Figure 3: Salinas District Actual and Projected Demand



Cal Water has expanded its water conservation programs and developed new ones for the Salinas District as a result of increasing in response to state law and policies requiring further reductions in per capita daily water use. SBx7-7 mandates a 20 percent reduction in per capita urban water use by 2020. The CPUC requires implementation of conservation programs and rate structures to achieve reductions in per capita water use. The *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU), of which Cal Water has been a signatory since 1991, requires implementation of conservation programs. The Salinas District Water Conservation Master Plan, which addresses these requirements, is included as Appendix G in the 2010 UWMP.

The 2015 and 2020 district-specific targets for Salinas District are 131 and 117 gpcd, respectively. Over the last five years District demand has averaged about 139 gpcd. Thus, per capita demand needs to decrease by 7 percent by 2015 and by 18 percent by 2020 in order to meet these targets.

The target water demand projection includes conservations savings from passive and active demand management, which are described in Section 6 of the UWMP.

Actual and projected water use through 2040 is shown in Table 2. The quantities are the total target demand projection based on SBx7-7 gpcd targets, including unaccounted for water.

Table 2: Salinas District Water Demand – Actual and Projected AFY								
	2005 Actual	2010 Actual	2015	2020	2025	2030	2035	2040
Total	20,933	16,940	20,053	19,840	21,125	22,504	23,984	25,572

Salinas District Demand plus ½ Central SPA Demand

Table 3 combines the projected demands for the Salinas District and ½ of the Central SPA. In 2020, the increase in District demand due to ½ of the Central SPA is only 0.35% and in 2035 or in 20 years from 2015, the increase is 2.5%.

Table 3: Salinas District Water Demand + ½ Central SPA Demand AFY								
	2005 Actual	2010 Actual	2015	2020	2025	2030	2035	2040
District	20,933	16,940	20,053	19,840	21,125	22,504	23,984	25,572
½ Central			0	71	249	427	605	605
Total			20,053	19,911	21,374	22,931	24,589	26,177

Although the water demands of ½ Central SPA constitute a very small percentage of total projected Salinas District demand, the combined demand projection is used here.

Salinas District Water Supply

The Salinas District water supply comes from pumped groundwater within District boundaries. It is extracted from aquifer segments of the Salinas Valley groundwater basin known as the Pressure Area and Eastside Area. The Salinas Valley groundwater basin, which is overdrafted, is unadjudicated. The California Water Resources Control Board has initiated adjudication proceedings in the event that Monterrey County Water Resources Agency (MCWRA) is not able to effectively reduce the overdraft.

The Pressure Area is a region of gradually declining groundwater elevations and is characterized by three confined aquifer systems, overlain and separated by thick clay layers that act as aquicludes. These aquifers named for their relative depths are known as the “180 Foot", the “400 Foot”, and “900 Foot” aquifers. Cal Water pumps from all three aquifers.

The groundwater level in the Eastside Area is declining more rapidly than any other area in the Salinas Valley groundwater basin. The Eastside Area is comprised of unconfined randomly scattered water bearing strata.

Since the surface elevation in the Salinas District ranges from 40 to 70 feet above sea level, the three aquifers of the Pressure Area are all below sea level. There is hydrologic continuity with the ocean and the three aquifers.

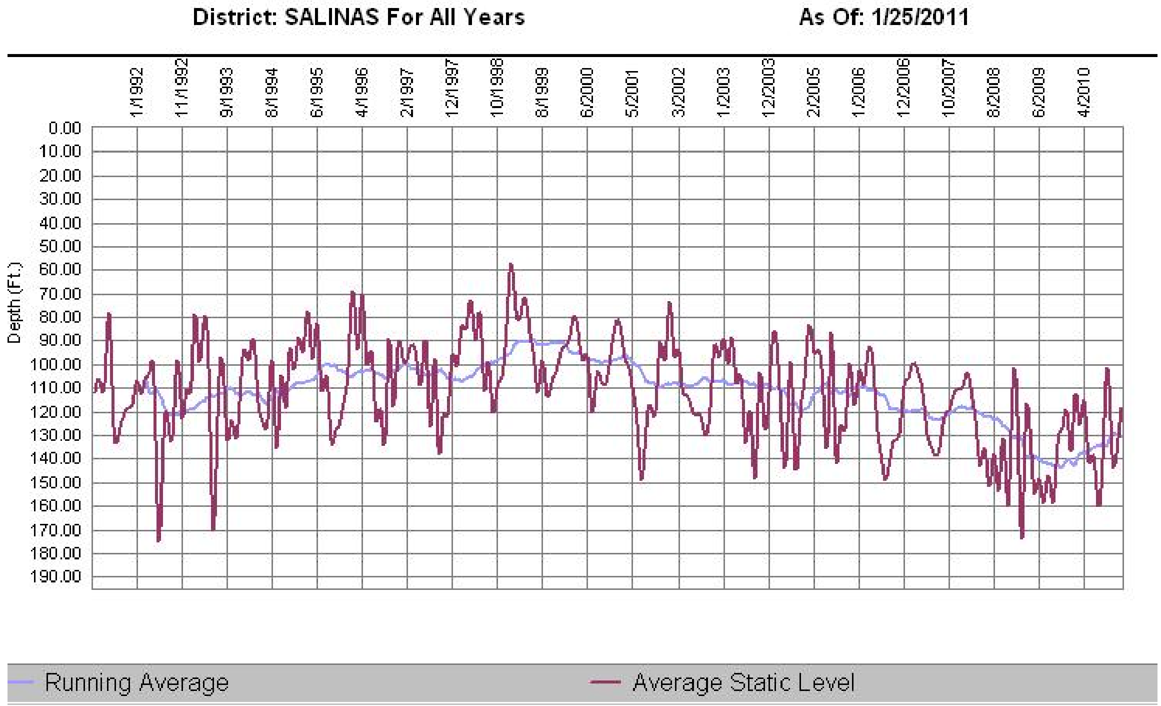
MCWRA has estimated that the annual non-drought overdraft of the Salinas Basin is about 45,300 AF per year. Because of the hydrologic continuity between the ocean and the aquifers of the Pressure Area, seawater has been intruding into these aquifers at an estimated rate of 28,800 AF per year.

Groundwater pumping throughout the Salinas Valley has contributed to the overdraft of the groundwater basin. MCWRA numbers indicate that water levels have declined in all four of the basin’s areas. However, the minor declines in the Upper Valley and Forebay areas appear to be in response to drought conditions. Recharge in these areas from releases from the San Antonio and Nacimiento Reservoirs have historically stabilized groundwater levels in these two areas. Declines since 1987 are believed to be the result of reduced recharge supplies.

Seawater has advanced into the 180 Foot aquifer to within one mile of Cal Water’s closest well. When possible, Cal Water shifts groundwater pumping from the 180 Foot and Eastside aquifers to wells further south and in the 400 Foot aquifer of the Pressure Area.

Except for annual deviation of approximately thirty-five feet, the average static groundwater levels in District wells since 1961 has changed elevation only during drought years. In 1976 and 1977, the running average level declined by twenty feet. Recovery occurred in 1982 and 1983 when storm runoff refilled local reservoirs allowing groundwater recharge activities to resume. With extended drought conditions commencing in 1984, the running average elevation again began declining and by the summer of 1992 had dropped by thirty-five feet. Well level averages from 1990 through 2010 are shown in Figure 4.

Figure 4: Salinas District Average Well Levels



The Salinas District has a total of 59 wells, including one leased well. Forty two (42) of these wells are active and operational and one is in Standby status. The design capacity of the active operational wells is 30,990 gpm, a rate that could produce 44.6 mgd or 50,000 AFY of water. The five-year average day demand is 18.4 mgd or 20,628 AFY (41% of design capacity). The historic high for these parameters occurred in 2004 for average day at 19.4 mgd and in 2005 for maximum day at 31.8 mgd or 22,080 gpm = 71.2% of design capacity.

Data Table 4 from the 2010 UWMP show the actual quantity of the groundwater pumped in the Salinas District for a 5 year period.

Table 4: Salinas District Groundwater Pumped – AFY				
2006	**2007**	**2008**	**2009**	**2010**
20,431	20,865	20,778	18,414	16,940

The amount of groundwater projected to be pumped is shown in the Table 5. The projected demand for 2040 is 26,375 AFY or 52.7% of design capacity.

Table 5: Amount of Groundwater Projected to be Pumped – AFY (Table 19)						
Source	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Salinas Valley GW Basin	20,523	20,065	21,538	23,105	24,775	26,375

Cal Water's ½ of Central SPA Water Supply

A new well in Cal Water's ½ of the Central SPA and other wells near that area are expected to provide an adequate reliable supply of water to meet forecasted demand. Cal Water plans on constructing one new well within its area. A site has been designated for this new well on the land use map. A well with a design capacity of 1,000 gpm operated at a 90% utilization rate would produce 1,453 AFY or 2.4 times average annual demand. Maximum day demand in the Salinas District is 1.6 times average day demand which would be 600 gpm for Cal Water's ½ of the Central SPA.

Cal Water has two wells close to its ½ of the Central SPA. With its distribution and storage system Cal Water is able to move water from pressure zones with excess supply to zones that are short of supply for supply reliability.

Water from wells near the Central SPA complies with all federal and state drinking water standards. So it is expected that the new well within the Central SPA will also meet drinking water quality standards.

Groundwater Basin Boundaries and Hydrology

The following description is from DWR's Groundwater Bulletin 118, which is in Appendix D of the 2010 UWMP. The DWR bulletin provides additional details on the basin.

The District covers areas in both the 180/400 Foot Aquifer Subbasin (3-4.01) and the Eastside Aquifer Subbasin (3-4.02). The 180/400 Foot Aquifer Subbasin includes the lower reaches and mouth of the Salinas River. The Southwestern basin boundary is the contact of Quaternary Alluvium or Terrace Deposits with the granitic basement of the Sierra de Salinas. Further north along the western Salinas Valley margin the basin boundary is the contact with the Quaternary Paso Robles Formation, or Aromas Red Sands of the Corral de Tierra Area Subbasin. The extreme northwest boundary of the sub basin is shared with the Salinas Valley-Seaside Area Subbasin along the seaward projection of the King City Fault. The Subbasin is bounded by the Monterey Bay to the northwest. The northern sub basin boundary is shared with the Pajaro Valley Groundwater Basin and coincides with the inland projection of a 400-foot deep, buried clay-filled paleodrainage of the Salinas River. This acts as a barrier to groundwater flow between these sub basins. The northeastern boundary is shared throughout most of its length by the adjacent Salinas Valley-Eastside Subbasin, and to the north with a shorter length of the Langley area Subbasin. The northeastern boundary generally coincides with the northeastern limit of confining conditions in the 180/400-Foot Aquifer Subbasin and the location of State Highway 101. The southeastern boundary is shared with the Lower Forebay sub basin and is the approximate limit of confining conditions in an up-valley direction. The 180/400-Foot Aquifer Subbasin boundaries generally coincide with those of the Pressure Area of the Monterey County Water resources Agency (MCWRA).

The Eastside Aquifer sub basin extends from approximately five miles north of the city of Salinas to twenty five miles south of the town of Gonzales along the eastern side of the lower Salinas Valley. The sub basin is bounded to the north by the Pleistocene Aromas Red Sands of the Salinas Valley-Langley Area Subbasin. To the south, the sub basin shares a boundary with the Quaternary Alluvium deposits of the Salinas Valley-Lower Forebay Aquifer Subbasin. The western sub basin boundary generally coincides with the northeastern limit of confining conditions in the adjacent 180/400-Foot Aquifer Subbasin and with Sate Highway 101. The eastern boundary is the contact of the Quaternary Terrace deposits with granitic rocks of the Gabilan Range. The sub basin boundaries are generally correlative with those of the East Side sub area of the MCWRA. Intermittent streams such as the Natividad, Alisal, Quail, Parsons, Muddy and Johnson Creeks drain the western slopes of the Gabilan Range and flow across the Subbasin toward the Salinas River on the west side of the Valley.

MCWRA Groundwater Management Plan

MCWRA's plan is comprised of groundwater management programs and a suite of projects such as the Salinas Valley Water Project (SVWP) which have and continue to help reduce seawater intrusion rates. Importantly, water conservation programs are being implemented by Cal Water and by agricultural irrigators,

The MCWRA Groundwater Management Plan is included as Appendix H in the 2010 UWMP. MCWRA requires annual extraction reports from all agricultural and municipal well operators. It has developed programs and projects to reduce seawater intrusion and nitrate contamination in order to provide an adequate supply of good quality water to meet all current and projected future demands in the Salinas Valley groundwater basin.

The Salinas District has not experienced a supply shortfall during extended drought events. Cal Water believes that despite an overdraft condition in the groundwater basin, its total projected demands will be met by its existing groundwater supply even in multiple dry years. This is based on data showing that during previous dry year periods, its supply has always met demands, and that its well water levels have recovered in ensuing years of normal and above average rainfall. Because MCWRA's groundwater management programs and projects have helped to reduce overdraft and increase the reliability of the groundwater supply, Cal Water expects to be able to meet 100 percent of its dry year demands through 2040 with groundwater.

Cal Water plans on increasing well capacities over time as older wells are taken out of service and replaced with newer high capacity wells. Total design capacity is also expected to increase as treatment systems are constructed for wells with water quality problems.

In its *Feasibility Study for a Long Term Water Supply Plan for the Salinas District,* (July 2009) Cal Water evaluated other water supply source options than groundwater which includes drilling new wells, rehabilitating older wells and adding treatment facilities at well stations if water quality issues make this necessary. The plan includes enhanced water conservation. Desalinating ocean water and diverting Salinas River water were evaluated and judged non feasible due to regulatory, environmental, legal and cost issues. Groundwater will continue to be the only source of supply until the benefits of these other sources outweigh their disadvantages.

Water quality issues of concern in the Salinas District are nitrates and volatile organic compounds (VOCs). Nitrates are present in most wells at varying concentrations. Its presence is attributed to vertical movement from the ground surface through geologic materials and unsealed or improperly abandoned wells in response to pumping in deeper strata. In the eastside area, the lack of effective confining zones can induce cross-flow from shallower aquifers and result in deterioration of water quality if there are surface sources of contaminants present. Water quality parameters are continuously monitored for compliance with drinking water standards. If nitrates or VOC concentrations exceed drinking water quality standards, Cal Water will either provide treatment facilities or replace wells where location, age, condition and yield make treatment infeasible.

Salinas District Short Term (5 to 10 Years) Supply Plan

Cal Water will continue to develop wells within its Salinas District service area to meet growth in demand and to replace older wells that are at the end of their useful life or which have water quality problems for which treatment is not economically justified. For new wells, candidate sites are assessed in terms of favorable hydro-geologic conditions, distribution system requirements, and compliance with regulatory criteria. Sites that meet these criteria have a test hole drilled to verify the presence and nature of aquifer materials and water samples are withdrawn to test water quality. If geologic and water quality analyses indicate the site is suitable for a drinking water production well, the site is purchased and developed. Depending on land acquisition, permitting and approval issues and including design, construction and start up, it can take two to three years for Cal Water to bring a new well on line.

Salinas District Longer Term (10 to 30 Years) Supply Plan

For longer term supply, Cal Water will continue to evaluate how best to increase supply through development of source(s) within and possibly outside its service area boundaries. Cal Water coordinates closely with MCWRA in developing and evaluating alternative supply options outside its district boundaries.

The following is a summary of alternatives that are being further considered:

1. <u>Out of District Service Area Boundary Wells.</u>
   This involves identifying a suitable location for a well field and determining whether Cal Water could develop this site and convey pumped water to the Salinas District to supply areas where water is needed. Existing information indicates that there are areas outside Salinas that have good water quality and reliable yields and therefore might be candidates

for developing future supplies. This alternative is consistent with approaches being considered by MCWRA. A key issue with this alternative is to ensure that agricultural users of groundwater would not be adversely impacted by the development and use of such a well field. A pilot project may be needed to demonstrate that pumping and conveyance of water to Salinas would not significantly impact existing groundwater levels and yields of agricultural wells.

2. Phase 2 MCWRA Diversion Project. Phase 1 involves blending diverted surface water with reclaimed water from the Monterey Water Pollution Control Agency treatment plant. This blend of waters is used in lieu of pumping groundwater for irrigation of 12,000 acres of agricultural land near the coast. The intent of the Phase 1 SVWP project is to stop the landward advance of seawater intrusion in the SVGWB by reducing agricultural groundwater pumping. Phase 2 of the SVWP is to increase the amount of diverted surface water in order to address urban groundwater needs. In Phase 2, additional diverted Salinas River water would be provided to agricultural irrigators who would further reduce their groundwater pumping and thus make that supply available for municipal use. Cal Water is coordinating with MCWRA on Phase 2 SVWP in order determine how much water could be expected to meet Salinas District long-term supply needs. As currently envisioned, the SVWP diversion facility will be at Moro Cojo, and the Phase 2 urban component is estimated to be up to 10,000 AFY. However, fisheries requirements may reduce this amount to 5,000 AFY. Since the urban component will be allocated among a number urban users, it is likely that Cal Water would get no more than 50% or between 5,000 and 2,500 AFY.

3. Non-potable Demands Supplied by Non-Potable Wells.
   This alternative requires substantial non-potable uses such as golf courses, parks and green spaces, car washes, dust control, industrial cooling water, certain types of industrial process waters (wash water) capable of being economically served by wells where water quality is not acceptable for drinking water (e.g., high nitrates) but would be compatible for non-potable use. While this alternative does not reduce overall pumping from within the District's boundaries, it would permit use of well facilities that have been abandoned due to water quality problems and free up more capacity of high quality potable wells to meet drinking water demands.

Salinas District Recycled Water

The Monterey Regional Water Pollution Control Agency (MRWPCA) provides residential wastewater treatment for the Salinas urban area and after advanced treatment recycles 100% of the treated effluent for agricultural irrigation during the summer months. Of the nearly 30 mgd of flow recycled by MRWPCA, 10 mgd or 33% comes from the City of Salinas, 70% of which is water supplied from wells within Cal Water service area.

The Central SPA provides for wastewaters generated within the plan area to be collected, conveyed and treated at the City's existing treatment plant. Effluent from that plant is currently used for irrigation of agricultural lands, which results in a reduction of groundwater pumping by the irrigators, which in turn provides more groundwater supply for Cal Water to meet its Salinas District demands. So, wastewaters generated within Cal Water's ½ Central SPA will be reclaimed and will have the effect of increasing available urban groundwater supply if irrigators proportionately reduce their groundwater pumping.

The estimated volume of wastewater generated in the Salinas District to 2040 is shown in Table 6. According to MRWPCA, 60 percent of all effluent it receives is recycled and used for agricultural irrigation outside Cal Water's service area. Use of this "surface" is intended to reduce groundwater pumping for agricultural irrigation.

Table 6: Salinas District Recycled Water - AFY							
Category	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Wastewater Collected and Treated	10,282	10,749	11,237	11,749	12,284	12,845	13,433
Recycled Water – Agricultural Irrigation	6,169	6,449	6,742	7,049	7,371	7,707	8,060

Using this assumption, the quantity of groundwater pumped by Cal Water for the Salinas District can be reduced by the quantity of recycled water used for crop irrigation. In 2040, the net demand of pumped groundwater in the Salinas District would be 26,375 AFY – 8,060 AFY = 18,315 AFY.

Water Conservation

Cal Water has been practicing water conservation programs in the Salinas District for over 15 years. To achieve its SBx7-7 per capita water use targets for 2015 and 2020, it has intensified its water conservation program. Cal Water programs include educational, informational, and customer assistance activities, distribution system water audits and leak detection, promotion of water efficient landscape guides, residential surveys, public and school education. Cal Water promotes installation of water conserving fixtures such as toilets, showers, washing machines, and low water use landscaping. Table 7 shows additional projected water conservation savings by specific programs through 2015. These programs will be sustained in order to achieve further per capita water use reductions.

Table 7: Salinas District: Projected Water Conservation Savings by Program

Program	Annual Water Savings (AF)				
	2011	**2012**	**2013**	**2014**	**2015**
CORE PROGRAMS					
Rebates/Vouchers					
Toilets	22.6	44.3	65.1	102.7	138.8
Clothes Washers	7.0	10.3	13.5	25.1	36.2
Urinals	0.0	0.0	0.0	0.0	0.0
Customer Surveys/Audits	15.4	33.5	49.8	87.2	120.8
Conservation Kit Distribution	12.8	24.0	33.9	45.2	55.1
Pop-Up Nozzle Distribution	39.0	78.0	117.0	163.7	210.5
Subtotal Core Programs	***96.7***	***190.1***	***279.3***	***424.0***	***561.5***
NON-CORE PROGRAMS					
Direct Install Toilets/Urinals	24.9	48.9	71.8	156.4	237.5
Smart Irr. Controller Vendor Incentives	0.1	0.1	0.2	15.6	31.1
Large Landscape Water Use Reports	6.2	6.2	6.2	13.5	13.5
Large Landscape Surveys/Incentives	9.6	19.3	28.9	40.5	52.0
Commercial Kitchen Rebates/Vouchers	0.0	0.0	0.0	4.8	9.6
Cooling Tower/Process Water Retrofit Incentives	0.0	0.0	0.0	0.0	0.0
Subtotal Non-Core Programs	***40.8***	***74.5***	***107.2***	***230.8***	***343.8***
Total Core & Non-Core Program Savings	**137.6**	**264.6**	**386.5**	**654.7**	**905.3**

Cal Water followed a detailed, multi-step process to identify the best mix of programs to achieve required savings. After a qualitative analysis of various program measures, those most appropriate for the Salinas District were quantitatively analyzed. From that analysis the above programs were selected. In addition to Cal Water's experiences, information developed by the California Urban Water Conservation Council and the Alliance for Water Efficiency was utilized to estimate water savings.

In the unlikely event of a protracted or unexpected water shortage, Cal Water has developed a four-stage rationing plan, which includes both voluntary and mandatory water use restrictions. Table 8 is a summary of this program.

Table 8: Cal Water Demand Reduction Methods			
Shortage	Stage	Demand Reduction Goal	Type Of Program
Minimum 5 - 10%	Stage 1	10% reduction	Voluntary
Moderate 10 - 20%	Stage 2	20% reduction	Voluntary or Mandatory*
Severe 20 - 35%	Stage 3	35% reduction	Mandatory*
Critical 35 - 50%	Stage 4	50% reduction	Mandatory*

* Mandatory = Allocations

The following lists the actions to be taken during periods when a reduction in consumption is required:

Stage 1

- California Water Service Company maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, monthly bill inserts, and conservation messages printed in local newspapers.
- Educational programs in area schools are also ongoing.

Stage 2

- California Water Service Company will aggressively continue its public information and education programs.
- Ask consumers for 10 to 20 percent voluntary or mandatory water use reductions.
- Prior to implementation of mandatory reductions, obtain approval from CPUC.
- Lobby for passage of drought ordinances by appropriate governmental agencies.

Stage 3

- Implement mandatory reductions after receiving approval from CPUC.
- Maintain rigorous public information campaign explaining water shortage conditions.
- Water use restrictions go into effect; prohibited uses can include watering resulting in gutter flooding, using a hose without shutoff device, filling of pools or fountains, etc.
- Limiting landscape irrigation by restricting the hours of the day and or days of the week during which water for irrigation can be used.
- Monitor production weekly for compliance with necessary reductions.
- Installation of a flow restrictor on the service line of customers who consistently violate water use restrictions.

Stage 4

- All of steps taken in prior stages intensified.
- Discontinuance of water service for customers consistently violating water use restrictions.
- Monitor production daily for compliance with necessary reductions.
- More restrictive conditions for, or a prohibition, of landscape irrigation

Implementation of Supply Plans and Conservation Programs

The Cal Water Salinas District is supported by its engineering, water quality and customer service staff in San Jose, which is responsible for planning, designing, construction, operating, maintaining and managing all Salinas District water system facilities and programs

Cal Water schedules preparation of plans, designs and construction of new wells and related distribution and storage facilities so as to increase supply capacity ahead of projected demand growth thereby providing excess supply capacity to accommodate more rapid growth than anticipated and dry weather periods that might result in temporary declines in the groundwater table level and possibly well yields. Typically, the goal for the supply capacity of the wells is to accommodate the maximum day demand (1.6 times the average day) with the largest source (greatest capacity well) being down or not operating.

Other Supply Factors

Water Rights

Under state law, "the use of percolating groundwater in California is governed by the doctrine of correlative rights and reasonable use, which gives the overlying property owner a common right to reasonable, beneficial use of the basin supply on the overlying land." The exercise of Cal Water rights to percolating groundwater occurs after Cal Water acquires ownership of a property to be used as a production well site.

Water Supply Permits and Approvals

For prospective new well sites and other water facilities such as storage tanks and booster pump stations, Cal Water follows a standard procedure in which it establishes interest on the part of a property owner to sell all or a designated piece of his/her property to Cal Water for a water supply purpose. In the case of a well site, Cal Water first determines its suitability for a production well. This includes a conducting a sanitary survey, Phase 1 environmental assessment, a right of entry agreement, design and construction of a test well, testing of the yield and water quality of the test well and evaluation of findings. If a site is determined to be suitable, Cal Water generally purchases the property from the owner. In the case of public properties, it may enter into a long-term lease or obtain a permanent easement.

Cal Water is required to obtain the following permits including:

1. Water system amendment permit from California Department of Health Services (DHS)
2. A conditional use permit from the City of Salinas
3. Well construction/building permit from the City of Salinas
4. Well drilling permit from Monterey County Health Department
5. An air quality permit from the Air Quality Management District

After the well is constructed and before use, Cal Water is required to demonstrate to DHS that water from the well complies with all drinking water standards. Cal Water also is required to file the well logs obtained by the driller with the Department of Water Resources**.**

Design and Construction of Water Supply System

A complete water system includes wells and pumps, transmission lines, storage facilities and booster pumps, distribution system, meters, etc. As planning and design proceed further on its ½ of the Central SPA, Cal Water will work closely with the City of Salinas and it's planning consultant, developers and their engineers, the CA Dept of Drinking Water, the MCWRA and others involved with the planning, design, construction and operation of the proposed water system.

Cal Water will prepare all proposed design drawings and specifications for water systems for compliance with state and Cal Water standards with respect to supply and storage capacities, pipe sizes, booster pumps, fire flows, equipment, materials, communication and control systems and integration with the Salinas District system.

Capital costs for design and construction of the water distribution system, storage and booster pump stations are the responsibility of the developers of the Central Area Specific Plan. Capital costs for new well stations will be recovered by Cal Water through a per lot assessment fee to developers in accordance with CPUC rules.

With respect to the Salinas District, Cal Water has an ongoing capital improvement program to upgrade and improve the distribution system, replace wells that have reached the end of their useful life, provide treatment of groundwater due to excessive nitrates, MTBE or other contaminants. Cal Water's Salinas District capital improvement program is separate from and will not include costs associated with the water system required for the Central Area Specific Plan.

Comparison of Supply and Demand

SB 610 requires an assessment as to whether the proposed water supply for Cal Water's ½ of Central SPA will meet projected water demand for the next 20 years during:

1) A normal water year
2) A single dry year
3) Multiple dry water years

Figure 5 compares annual rainfall since 1980 to the average annual rainfall is shown in below. Average annual rainfall for the Salinas District is 14.6 inches. One of the driest years occurred in 1999 when the rainfall was 79.5% of average (11.6 inches). This is taken as the single dry year. The three multiple dry-water years used in the UWMP were based on the consecutive lowest annual rainfall totals which occurred in 2002, 2003, 2004. Reduced rainfall in Salinas during this period coincides with similar reductions experienced elsewhere in California.

Figure 5: Salinas Comparison of Annual Rainfall to Historical Average

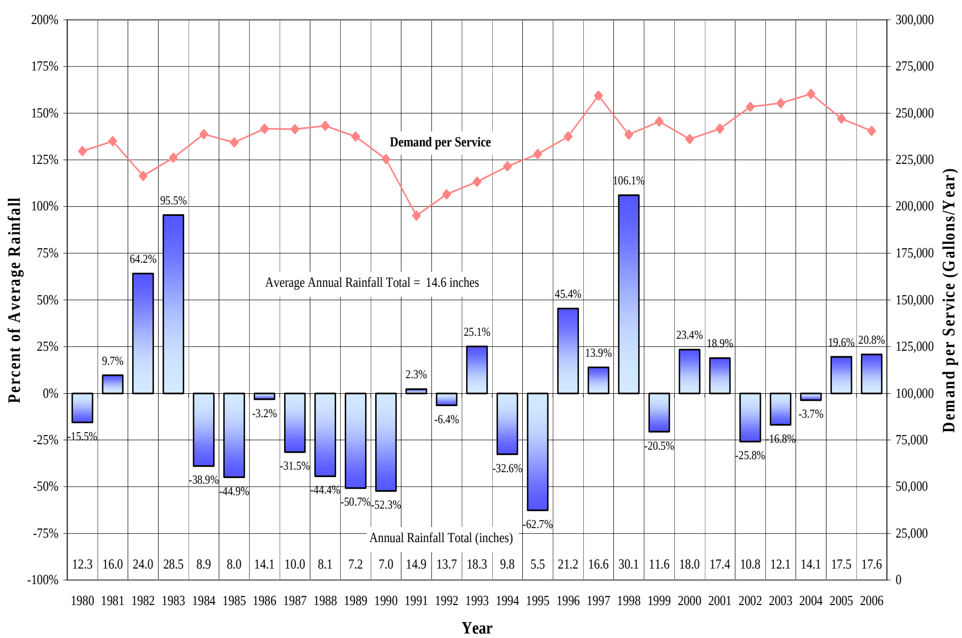


Table 8 provides a comparison of rainfall and water use records for all customer classes combined for the Salinas District. It shows a correlation between amount of annual rainfall and water use by all customer services.

Table 9: Salinas District Rainfall Vs Customer Service Use				
	Rainfall	Rainfall	Gal/day	Classification of Year By
Year	(inches)	% of Ave*	All Services	Amount of Precipitation
1991	14.9	2.1	535	Normal
1992	13.7	-6.2	566	Slightly below Normal
1993	18.3	25.3	584	Above Normal
1994	9.8	-32.9	607	Dry
1995	5.5	-62.3	625	Very Dry
1996	21.2	45.2	651	Well Above Normal
1997	16.6	13.7	711	Slightly below Normal
1998	30.1	106.2	654	Excessively Above Normal
1999	11.6	-20.5	673	Dry
2000	18	23.3	647	Above Normal
2001	17.4	19.2	662	Above Normal
2002	10.8	-26.0	694	Dry
2003	12.1	-17.1	700	Dry
2004	14.1	-3.4	713	Normal
2005	17.5	19.9	677	Above Normal
2006	17.6	20.5	664	Above Normal

*Average Annual Rainfall: 14.6 inches

Following are some highlights from Table 8:

- In 1999, with rainfall 20.5% below normal, average consumption was 673 gallons/day/service;
- In 2000, with rainfall 23.3 % above normal, average consumption was 647 gallons/day/service;
- In 2001, with rainfall 19.2 % above normal, average consumption was 662 gallons/day/service;
- In 2002, with rainfall 26 % below normal, average consumption was 694 gallons/day/service;
- In 2003, with rainfall 17.1 % below normal, average consumption was 700 gallons/day/service;
- In 2004, with rainfall only 3.4 % below normal, average consumption was 713 gallons/day/service.

For single dry years (1999) and multiple dry years (2002, 2003, 2004) there are changes in average water use with respect to what might be considered a “normal” hydrologic year. For example, the average water use for the two years with above normal rainfall (2000 and 2001), average use was 655 gpd/service. For the three dry years (2002, 2003 and 2004), average use was 702 gpd/service or an average of 7.1% increase in water use

While multiple dry years would result in a decline in ground water levels, the effect historically has not reduced the capacity of Cal Water’s wells to meet service area demands. Ground water, as previously shown has recovered in wet years resulting in a relatively stable groundwater supply over decades.

Normal Hydrologic Year

Table 10 presents the supply capacity versus demand for a normal hydrologic year. It conservatively assumes no change in supply capacity even though Cal Water's well replacement and new construction projects will be planned to increase well design capacity. Realistically, a 15% increase in capacity could be expected in the next 20 years so that the 2035 design capacity would be 57,500 AFY or the difference in supply capacity and demand would be 32,725 AFY

Table 10: Normal Hydrologic Year: Supply Capacity Versus Demand (AFY)

Year	Supply	Demand	Difference
2015	50,000	20,053	29,947
2020	50,000	19,911	30,089
2025	50,000	21,374	28,626
2030	50,000	22,931	27.069
2035	50,000	24,589	25,411

Single Dry Year

Based on preceding data and analysis, Cal Water estimates that the availability of its groundwater supplies will not be affected by a single dry year. As the data shows, single dry year demand will very likely be the same as a normal hydrologic year demand. While some customers may increase landscape irrigation due to reduced precipitation, others based on water use advice and information from Cal Water may reduce consumption.
Therefore, Table 11 is the same as Table 10.

Table 11: Single Dry Year: Supply Capacity Versus Demand (AFY)

Year	Supply	Demand	Difference
2015	50,000	20,053	29,947
2020	50,000	19,911	30,089
2025	50,000	21,374	28,626
2030	50,000	22,931	27.069
2035	50,000	24,589	25,411

Multiple Dry Years

Based on preceding data and analysis, Cal Water estimates that the availability of its groundwater supplies will not be significantly affected by a multiple dry year drought. The effect of pumping groundwater supplies that underlie the Salinas District at "normal" demand levels during multiple dry years is very likely some localized area decline in groundwater levels. As groundwater level data presented in this WSA have shown, during ensuing wet periods, groundwater levels are very likely to recover to "normal" levels providing overall Salinas area pumping rates remain the same or do not significantly increase.

Nonetheless, it is conservatively assumed here that in the 2nd or 3rd year of a multiple dry year period that a temporary decline in groundwater levels will reduce the overall yield of Cal Water's wells by 10% and that demand will increase by 7% - not withstanding an intensified water conservation message from Cal Water, MCWRA and other agencies. Table 12 compares supply versus normal demand with these assumptions.

Table 12: 2nd and 3rd Dry Years: Supply Capacity versus Demand (AFY)

Year	Supply	Demand	Difference
2015	46,500	21,457	25,043
2020	46,500	21,304	25,196
2025	46,500	22,870	23,630
2030	46,500	24,536	21,778
2035	46,500	26,310	20,190

The design supply capacity in 2035 is more likely to be 57,500 AFY so that a 10% decline in well yield would result in a supply capacity of 51,750 AFY and a difference of 25,440 AFY between increased demand and reduced supply.

Water Supply Assessment Conclusion

Based on:

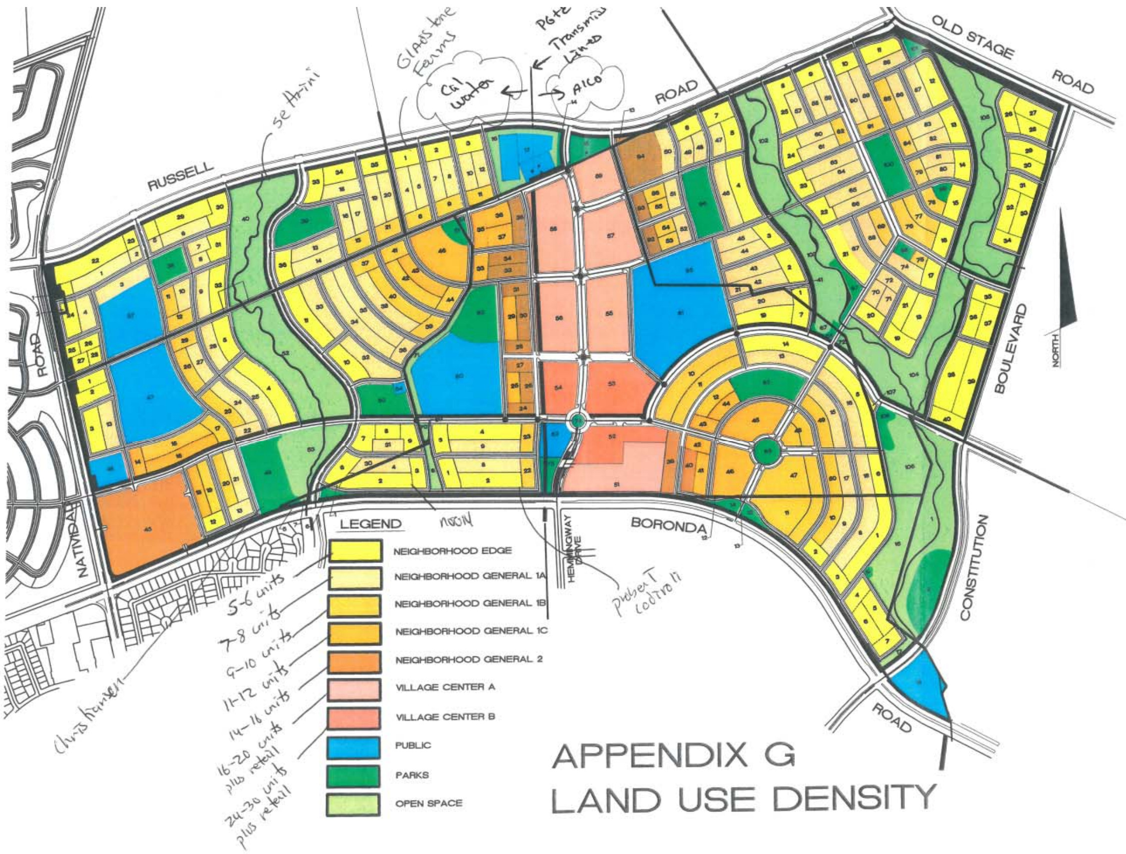
- Cal Water's plan to construct a new well with at least 1,000 gpm capacity in its ½ of the Central SPA,
- Cal Water's ability to supply water to its ½ of Central SPA with nearby wells within the City of Salinas,
- Cal Water's short and long term plans to increase supply through increasing well capacity through new or rehabilitated wells or additional treatment facilities
- Cal Water's successful historical experience in fully meeting water demands during single dry years and multiple dry years,
- Cal Water's in-place, ongoing and expanded water conservation programs for reducing demand during normal, single and multiple dry years,
- Cal Water's ability to supply water to City of Salinas' proposed growth areas with water from wells entirely within its Salinas service area,
- Cal Water's ability to move water between pressure zones to where it is needed most through its distribution system (transmission, storage facilities),

Cal Water believes it will have adequate water supplies to meet the projected demands of its ½ of Central Area SPA in addition to those of its existing customers and other anticipated future water users in the Salinas District for the 20 year period from 2015 to 2035 under normal, single dry year and multiple dry year conditions.

Appendix A: Land Use Plan for Cal Water's ½ of Central Specific Plan Area (SPA)

City of Salinas

December 2014



ALCO WATER SERVICE

WATER SERVICE ASSESSMENT

October 2014

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WATER SERVICE ASSESSMENT

INTRODUCTION

From the information provided to Alco Water Service (Alco) by the City of Salinas and the City’s consultants, P&D Consultants, specifically in their report entitled City of Salinas North Future Growth Area Water System Study dated August 30, 2006 (see attached report), the entire Central Area would represent approximately 3,377 additional dwelling units and approximately 633 developable acres to be completed over the next twenty years. The purpose of this Water Service Assessment (WSA) is to present water service information using the methodology to project water use/demand calculations that is consistent with the 150 gallons per person per day specified in the P&D Consultants Water System Study dated August 30, 2006.

BACKGROUND

Alisal Water Corporation, dba Alco Water Service (Alco), is a privately owned public utility that began serving water in 1932 in an unincorporated area commonly referred to as the Alisal. This area was annexed to the City of Salinas in the early 1960's. With the incorporation of the Alisal area, all water served within the city boundaries is provided by public utility water companies.

Alco is governed by the California Public Utilities Commission (CPUC), which regulates water rates and quality of service. The CPUC also retains authority over water quality. Water quality is regulated by the State Water Resources Control Board (SWRCB) Division of Drinking Water and the Monterey County Health Department (MCHD) Environmental Health Division (EHD).

The CPUC is the State regulatory agency responsible for establishing certificated service areas for investor-owned public water utilities such as Alco. Alco has a certificate of public convenience and necessity from the CPUC to provide public utility water service in Monterey County and specifically, in and around the Eastern portion of the City of Salinas. By CPUC Resolution W-4630 dated April 12, 2007, and reaffirmed by CPUC Decision 09-04-035 (D.0905034) dated April 16, 2009, the CPUC authorized Alco to add territory to its certificated service area which includes portions of the Central Future Growth Area, all of the Eastern Future Growth Area and additional unincorporated areas. In D.0904035, the CPUC determined that Alco could adequately provide water service to the future growth areas and authorized Alco to do so. Additionally, Alco has a water supply permit from SWRCB to act as a public water supplier in Monterey County, specifically in the Eastern portion of the City of Salinas.

ALCO'S SOURCE OF SUPPLY

Water Rights

Alco obtains all its water from groundwater. This groundwater is extracted from the Salinas Valley Groundwater Basin and, more specifically, the East Side Aquifer Subbasin. The groundwater in the Salinas Valley Groundwater Basin, which includes the East Side Aquifer Subbasin, is not currently adjudicated, meaning that there are no specific restrictions on the amount of groundwater that can be pulled from any sources as long as it is for beneficial use and is not wasteful. Because the Salinas Valley Groundwater Basin is not an adjudicated basin, Alco has no limit on its legal right to withdraw water from its groundwater well sources and provide that water for the beneficial use of its customers. Further, because Alco is a public utility with a certificate of public convenience and necessity and a SWRCB water supply permit, Alco has the ability and the right to draw water, without limitation, from its water sources for beneficial use to the fullest extent of which it is capable, as long as water is not wasted nor used unreasonably. In California, in an unadjudicated basin, the use of groundwater is governed by the doctrine of correlative rights. This doctrine accords each owner of land overlying a common water supply a right to the reasonable, beneficial use of that water supply. By virtue of this doctrine, coupled with the possession of a certificate of public convenience and necessity from the CPUC and a water supply permit from SWRCB, Alco has the right to withdraw water from its water sources and supply all of those customers that it is approved to serve water to by the CPUC. If, in the future, the Salinas Valley Groundwater Basin were to be adjudicated, Alco, as a public utility providing water service for domestic purposes, would still be considered the highest priority use and would be provided a priority in the adjudication over non-domestic uses, in accordance with CA Water Code 106.

Alco's Groundwater Wells

Alco has been using water from East Side Aquifer Subbasin since 1932 to supply water to its Salinas customers. Alco currently has nine water wells, six of which are in active service and three of which have been designated as standby sources by SWRCB and will be returned to active status after the addition of treatment or blending facilities for arsenic. Alco currently has one new water source already drilled and test-pumped and will be adding this source to the system in the near future. Alco is also in the process of drilling one new water source and projects that it will add the new source to the water system in year 2015. The locations of Alco's existing water sources as well as those wells that are being added in the future are dispersed throughout Alco's service area. As Alco adds additional customers and the total water system demand increases through developments like those projects included in the Central Future Growth Area, Alco will also add additional water well sources as necessitated by that increased total water system demand. The timing of the addition of additional water well sources are estimated in this WSA but will be installed as future water demands require, dependent on future growth.

Alco's existing nine sources, as well as those new sources that are drilled and/or are scheduled to be drilled, draw water from both the 400-foot aquifer and the deep aquifer. Only one well, out of all of Alco's existing well sources and the wells currently being developed, draws water from the 400-foot aquifer only.

Groundwater Supply - Bulletin 118

In Bulletin 118, the Department of Water Resources identifies the Eastside Aquifer Subbasin as follows:

> Basin Boundaries and Hydrology
> The Eastside Aquifer subbasin extends from approximately five miles north of the City of Salinas to twenty-five miles south to the town of Gonzales. The Subbasin is bounded to the north by the Pleistocene Aromas Red Sands of the Salinas Valley-Langley Area Subbasin. To the south, the subbasin shares a boundary with Quaternary Alluvium and Terrace deposits of the Salinas Valley-Lower Forebay Aquifer Subbasin. The western subbasin boundary generally coincides with the northeastern limit of confining conditions in the adjacent 180/400-Foot Aquifer subbasin (DWR 1946a) and with the location of Highway 101. The eastern boundary is the contact of Quaternary Terrace deposits with granitic rocks of the Gabilan Range. The subbasin boundaries are generally correlative with those of the East Side subarea of the Monterey County Water Resources Agency (MCWRA). Intermittent streams such as Natividad, Alisal, Quail, Parsons, Muddy and Johnson Creeks drain the western slopes of the Gabilan Range and flow across the Subbasin toward the Salinas River on the west side of the Valley. Average annual precipitation is 13 inches.
>
> Hydrogeologic Information
> The Salinas Valley is surrounded by the Gabilan Range on the east, by the Sierra de Salinas and Santa Lucia Range on the west, and is drained by the Salinas River, which empties into Monterey Bay on the north. The King City (Rinconda-Reliz) Fault (Durbin 1978) generally follows the western margin of the Valley from King City in the south to Monterey Bay in the north. Valley-side down, normal movement along the fault allowed the deposition of an asymmetric, westward thickening alluvial wedge. The Salinas Valley has been filled with 10,000 to 15,000 feet of Tertiary and Quaternary marine and terrestrial sediments that include up to 2,000 feet of saturated alluvium (Showalter 1984). Above the generally non-water bearing and consolidated granitic basement, Miocene age Monterey and Pliocene age Purisima Formations are water bearing strata within the Plio-Pleistocene age Paso Robles Formation and within Pleistocene to Holocene alluvium.
>
> Water Bearing Formations
> The primary water-bearing units of this subbasin are the same units that produce water in the adjacent 180/400-Foot Aquifer subbasin – namely, the 180-Foot Aquifer and the 400-Foot Aquifer. However, the near-surface confining unit (Salinas Aquitard) does not

extend into the Eastside or other subbasins. Groundwater in the Eastside Aquifer subbasin is semi-confined to unconfined and occurs in lenses of sand and gravel that are interbedded with massive units of finer grained material (Durbin 1970). The thickness of the 180-foot aquifer varies from 50 to 150 feet in the Salinas Valley, with an average 100 feet (MW 1994; DWR 1970). Because of the westward thickening of alluvial units in the Salinas Valley (Showalter 1984), the average thickness in the Eastside subbasin is probably less than that stated above. The 180-Foot Aquifer may be in part correlative to older portions of Quaternary terrace deposits or the upper Aromas Red Sands. The 180-Foot Aquifer is separated from the 400-Foot Aquifer by a zone of discontinuous sands and blue clays called the 180/400-foot Aquiclude (MW 1998) which ranges in thickness from 10 to 70 feet.

More recent studies suggest the 400-Foot Aquifer exist not only in the 180/400-Foot Aquifer subbasin, but also in the Eastside Aquifer and Lower Forebay Aquifer subbasins (MW 1994). The 400-foot aquifer has an average thickness of 200 feet and consists of sands, gravels, and clay lenses (LHI 1985). The upper portion of the aquifer may be correlative with the Aromas Red Sands and the lower portion with the upper part of the Paso Robles Formation (MW 1994).

Later reports term the 180-Foot Aquifer and the 400-Foot Aquifer the “shallow zone” and “deep zone”, respectively, in the Eastside and in the Upper and Lower Forebay subbasins (MW 1998).

An additional, deeper aquifer (also referred to as the 900-Foot Aquifer or the Deep Aquifer) is present in the lower Salinas Valley. A blue marine clay aquitard also separates this aquifer from the overlying 400-Foot Aquifer. This deeper aquifer consists of alternating layers of sand-gravel mixtures and clays (up to 900 feet thick), rather than a distinct aquifer and aquitard (MW 1994). The Deep Aquifer has experienced little development except near the coast where it is used to replace groundwater from the 180- and 400-Foot Aquifers rendered unusable by seawater intrusion; water quality and yield data are scarce.

MW (1994) estimated specific yields for the three main aquifers in the Salinas Valley for their Integrated Ground and Surface Water Model (IGSM). The estimated values for the 180-Foot, 400-Foot, and Deep Aquifers were 8-16 percent, 6 percent, and 6 percent, respectively. An average weighted specific yield of 8.8 percent was derived for three depth zones within the interval 20 to 200 feet below grade by the SWRB (1955). Yates (1988) estimated a storage coefficient of 0.0285 in the northern subbasin and 0.030 in the southern subbasin.

DWR Bulletin 118 further states;

Groundwater Budget (Type A)

A detailed groundwater budget was available for this subbasin for 1994 (MW 1998). Natural recharge (including applied water recharge) is estimated to be 41,000 af. There is no artificial recharge. Subsurface inflow is approximately 17,000 af. Annual urban and agricultural extractions total 86,000 af. There are no other extractions or subsurface outflow.

Therefore, according to the above information provided by Bulletin 118, this Subbasin is in overdraft of approximately 28,000 af per year. Bulletin 118 also states that, as of 1994, the Eastside Aquifer Subbasin had approximately 2,560,000 af of groundwater stored in this Subbasin. As of 1994, there were approximately 91.4 years of water available in this Subbasin (2,560,000 af / 28,000 af of overdraft per year = 91.4 years. Therefore, according to Bulletin 118's documentation, if no steps whatsoever were taken to address the overdraft issues of the Eastside Aquifer Subbasin, there would still be approximately 71 years of capacity as of 2014 in the Eastside Aquifer Subbasin.

Groundwater Management Legislation

On September 16, 2014, Governor Brown signed legislation requiring stricter management of the State's groundwater supply. The legislation, specifically SB1168, SB1319 and AB1739, will require the Department of Water Resource to categorize each groundwater basin (such as the Salinas Valley Groundwater Basin) as high-, medium-, low-, or very low priority and would require the initial priority for each basin to be established no later than January 1, 2015.

By January 31, 2020, all basins designated as high- or medium-priority basins by the department that have been designated in Bulletin 118, as may be updated or revised on or before January 1, 2017, as basins that are subject to critical conditions of overdraft shall be managed under a groundwater sustainability plan or coordinated groundwater sustainability plans pursuant to this part.

The Legislature encourages and authorizes basins designated as low- and very low priority basins by the department to be managed under groundwater sustainability plans pursuant to this part. Chapter 11 (commencing with Section 10735) does not apply to a basin designated as a low- or very low priority basin.

This legislation would additionally authorize the state board to designate certain high- and medium-priority basins as a probationary basin if, after January 31, 2025, prescribed criteria are met, including that the state board determines that the basin is in a condition where groundwater extractions result in significant depletions of interconnected surface waters.

Due to this new state legislation, Alco believes that the Salinas Valley Groundwater Basin will be brought into equilibrium and that future long term overdraft will be eliminated. This will be accomplished either through a locally (Monterey County) adopted and managed groundwater sustainability plan or a State mandated and administered groundwater sustainability plan. In either case, Alco expects the overdraft within the Salinas Valley Groundwater Basin to be eliminated.

Monterey County already has an agency developing projects to reduce the overdraft in the Salinas Valley Groundwater Basin; this agency is the Monterey County Water Resources Agency.

Monterey County Water Resources Agency

Monterey County has established an agency called the Monterey County Water Resource Agency (MCWRA) in order to address water shortage issues in the basin. MCWRA manages two distinct water projects, the Castroville Seawater Intrusion Project (CSIP) and the Salinas Valley Water Project (SVWP). The goals of these projects are to stop seawater intrusion, provide adequate water supplies to meet current and future (2030) needs and hydrologically balancing the groundwater of the Salinas Valley Groundwater Basin.

Castroville Seawater Intrusion Project (CSIP) / Salinas Valley Recycling Project (SVRP)

The CSIP / SVRD is a jointly managed and operated project of the Monterey Regional Water Pollution Control Agency (MRWPCA) and the Monterey County Water Resources Agency (MCWRA), completed in 1997. MRWPCA provides residential wastewater treatment for the Salinas urban area and, after treatment, recycles 100% of the treated effluent for agricultural irrigation in the northern Salinas Valley in the summer months. This recycled water program has the ability to provide approximately 30,000 AFY, which reduces groundwater used from the Salinas Groundwater Basin for agricultural purposes.

Salinas Valley Water Project (SVWP)

The SVWP is a collaborative effort between MCWRA and Salinas Valley interests to address the water resources management issues within the Salinas Valley. The SVWP provides for the long-term management and protection of groundwater resources in the basin. The SVWP was developed to address three critical water supply, water distribution and water quality issues in the Salinas Valley:

1) Stopping seawater intrusion
2) Providing adequate water supplies and flexibility to meet current and future (2030) needs
3) Hydrologically balancing the groundwater basin in Salinas Valley

To address the three issues, the SVWP proposes:

- Modifying the spillway at Nacimiento Dam and reporting Nacimiento and San Antonio Reservoirs; and

- Diverting the Salinas River at Marina and transferring water to CSIP (completed in 2010); and
- Utilizing the Salinas River for conveying water to the northern portion of the Salinas Valley; and
- Interlake Tunnel Project

MCWRA describes these projects as follows in its Project Description dated January 2001:

Modification to the Nacimiento Dam spillway.
The spillway at Nacimiento Dam would be modified to increase the flexibility of reservoir operations and allow the reservoir to maintain higher water levels in the winter and spring months. The additional storage gained at Nacimiento would be released along with flows stored at San Antonio Dam for Basin recharge and diversion later in the year. The Modifications to the Nacimiento Dam Spillway were completed in 2009.

Reoperation of Reservoirs.
The proposed spillway modifications would change the ways Nacimiento and San Antonio reservoirs are operated in order to provide the source water for the SVWP, while assuring the provision of adequate flood control capacity. The modified operation would increase the amount of water available for recharge and diversion during the irrigation season. This project was completed in 2009.

Salinas River Recharge, Conveyance, Diversion and Distribution.
The Salinas River would be utilized to convey water to the proposed diversion facility. The facility would include an inflatable dam designed to operate from April to November. A proposed Salinas River surface diversion facility would divert river water to the existing Castroville Seawater Intrusion Project (CSIP) system for delivery to the CSIP service area for agricultural irrigation. Diverted river water would supplement the use of CSIP project water and would replace existing groundwater pumping in the CSIP service area. The diversion facility would form a shallow impoundment of water upstream of the facility when the dam is operational. This impoundment could extend up to 2 miles upstream.

Diversion Facility
The proposed surface diversion facility would divert up to 25,000 acre feet of water from the Salinas River at Salachi Ranch Road into the existing CSIP distribution pipeline for delivery to agricultural users for irrigation. The diverted water would serve as an alternate groundwater supply to offset groundwater pumping. San Antonio and Nacimiento reservoirs would be reoperated to release water primarily during the late-spring and summer irrigation season. Increased spring and summer flows would be available for diversion to agricultural users via the surface diversion facility. Increased flows would also provide increased recharge through the riverbed to the groundwater aquifer. This project was completed in 2010.

East Side Canal Intake & Castroville Canal Intake
The Project will allow MCWRA to facilitate further offsets of groundwater pumping by delivering additional surface water to the Pressure and East Side subareas. In accordance with the Technical Memorandum prepared by GEOSCIENCE Support Services, Inc. and released to

the public in November 2013, up to 135,000 acre-feet per year of water will be diverted from the Salinas River and supplied for municipal, industrial, and/or agricultural uses in the Pressure and East Side subareas. Two pipelines will be constructed to deliver the water to end-users. Continued alleviation of groundwater pumping through use of the diverted surface water will help combat seawater intrusion in Monterey County.

The Project will encompass two surface water diversion points and their appurtenant facilities for capture, conveyance, and delivery of the water.

Capture and Diversion

The capture and diversion facilities will consist of either a surface water diversion facility, similar to the SRDF, or Ranney® Collector Wells. The most appropriate type of facility for each diversion point will be examined in the EIR.

Conveyance

The conveyance facilities associated with each diversion point will be composed of pipelines, which may be constructed both above and below ground level, and pump stations. The Project EIR will be used to analyze the most beneficial configuration of the pipelines and to explore specifics of the pipelines, including diameter, length, destination, number and location of turnouts, locations of pump stations, and physical layout of the conveyance facilities.

Delivery

The type and locations of the Project’s delivery facilities will be analyzed in the EIR to determine maximum beneficial use of the water. The resulting delivery facilities may consist of injection wells that are part of an aquifer storage and recovery (ASR) system, percolation ponds, turnouts for direct use of the water, or other options ensuing from analysis during the EIR process. The construction design and physical location of the delivery facilities will be influenced by the type of facility, the end-user’s intended application of the water (agricultural versus urban), and whether or not the Project will involve a water treatment component. The Project will either deliver raw water or treated water; if treated, the method of treatment will be identified once a project alternative is selected.

<u>System Operations</u>

The SVWP diversion facility will be operated to complement existing recycled water flows. Recycled water plant flows will be blended with Salinas River water whenever river diversions are available. The existing supplemental wells that provide groundwater to the CSIP system will be maintained. These wells will be utilized to provide peak irrigation flow requirements as well as to provide an adequate irrigation water supply during dry year conditions when Salinas River diversions are not adequate to meet the irrigation demand of the CSIP service area.

<u>Interlake Tunnel Project</u>

MCWRA is currently seeking funding to build a water conveyance tunnel between Nacimiento Reservoir and San Antonio Reservoir. The Nacimiento Reservoir fills approximately three times faster than the San Antonio Reservoir and, if built, would allow for an additional 60,000 acre-feet of water to be stored annually. If MCRWA’s current timeline is followed, this project could be constructed by the end of 2016.

ALCO'S WATER CONSERVATION EFFORTS IN ITS EXISTING SYSTEM

SB X7-7

In November of 2009, the State of California passed Senate Bill (SB) X7-7, requiring a reduction of per capita urban water use by 20% by December 31, 2020, using 2005 per capita water usage as a baseline.

In order to meet the goals set by SB X7-7, Alco was authorized in its last CPUC proceeding to implement a water conservation program. This program included a tiered rate structure, provision of water conservation kits, performance of individualized leak surveys at customers' requests, and provision of water conservation educational materials. The program has been successful and has led to a reduction of 12.55% of per capita water usage (gallons per capita per day = GPCD) for calendar year 2013, based on Alco's historical water usage date from the baseline year 2005. Alco will use its best efforts and fully expects to meet the 20% reduction in GPCD by December 31, 2020. In the tables and calculations contained in this WSA, Alco's projected water demand from its existing water system takes into account the water conservation efforts and the 20% reduction in GPCD by 2020.

Voluntary Conservation Measures

In addition to the above efforts, on January 17, 2014, Governor Brown issued a Statewide Drought State of Emergency and ordered State agencies to implement "a Statewide water conservation campaign to make all Californians aware of the drought and encourage personal actions to **reduce water usage** … **by 20%**".

Additionally, on April 25, 2014, Governor Brown issued an Executive Order "strengthen the State's ability to manage water and habitat effectively in drought conditions and called on all Californians to redouble their efforts to conserve water."

In response to the Governor's proclamation of the Drought State of Emergency, the California Public Utilities Commission (CPUC), the agency that regulates public utility water companies like Alco, issued its own Resolution (Res. No. W-4976), which prescribes the process to establish Tariff Rule 14.1, by which water utilities can introduce voluntary conservation measures, and Schedule 14.1, which provides for mandatory rationing if voluntary measures do not yield the necessary reduction in consumption, or in circumstances of prolonged or severe drought."

In response to the Governor's orders and to the requirements of the CPUC, Alco has formally notified the CPUC that it is activating its existing Tariff Rule 14.1 (Voluntary Water Conservation Measures) and sent notification to all of its customers to voluntarily reduce their water use by 20%. Alco also notified the CPUC that it is ready to comply with future directives under the Governor's Emergency Drought Declaration for either additional voluntary conservation measures or requirements for mandatory rationing.

SWRCB Emergency Regulations

Most recently, the CPUC issued its Resolution W-5000 which implements the Emergency Regulation which was adopted by the State Water Resources Control Board (Board) on July 15, 2014, and made effective July 28, 2014. The Board's new regulations, specifically CCR Title 23, Article 22.5 Sections 863 through 865, are a result of Governor Brown's directives to the Board regarding California's extended drought and the regulations specify what Californians must do in order to ensure reliable supplies of water as the drought continues. As a result of the requirements of Resolution W-5000 and the Board's new regulations, Alco sent notification to its customers informing them of the new regulations and the associated potential fines if the new water usage prohibitions are violated.

ALCO'S WATER SYSTEM DEMAND FOR ITS EXISTING WATER SYSTEM

In the tables that follow in this section of the WSA, Alco has shown its 2005 through 2014 actual water demand and percent reduction of the GPCD (see Table 1), as compared to its baseline 2005 historical usage data, and will use the projected reduction for years 2015 through 2020 (see Table 2) that will allow Alco to incrementally arrive at its goal of 20% reduction by December 31, 2020 for projected annual water system demand for its existing system.

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Table 1: Alco's Existing Water System Demand for Years 2005 through 2014*

Year	Water Demand (MG/Year)	GPCD	% Reduction**
2005	1556.5	160.88	0.00%
2006	1482.4	145.12	-9.80%
2007	1557.2	154.59	-3.91%
2008	1564	153.58	-4.54%
2009	1539.97	146.40	-9.00%
2010	1497.05	140.69	-12.55%
2011	1458.8	136.28	-15.29%
2012	1421.57	132.77	-17.47%
2013	1,495.81	140.69	-12.55%
2014	1367.75	128.60	-20.07

* 2014 data is from January to September inclusive

** % reduction is based on 2005 baseline GPCD

Table 2: Alco's Existing Water System Projected Water System Demand for Years 2015 through 2020 [1]

Year	Water Demand Alco Only (MG/Year)	Population served [2]	GPCD	% Reduction*
2015	1,376.10	29294	128.70	-20.00%
2016	1,383.85	29459	128.70	-20.00%
2017	1,391.60	29624	128.70	-20.00%
2018	1,399.35	29789	128.70	-20.00%
2019	1,407.10	29954	128.70	-20.00%
2020	1,407.10	29954	128.70	-20.00%

* % reduction is based on 2005 baseline GPCD

[1] These projections do not include the additional projected water demand for the Central Future Growth Area.

[2] Assumes linear growth of 50 homes per year for years 2015 through 2019, a total of 250 homes, due to various planned developments and in-fill in Alco's existing water system.

Alco's Existing Water System: Maximum Day and Peak Hourly Demand

Table 3 shows Alco's current and projected water system Maximum Day Demand (MDD) and Peak Hourly Demand (PHD) for its existing system through year 2020. For years 2011 through 2014, the data is actual data and years 2015 through 2020 are projected.

Table 3: Alco's Existing Water System Maximum Day Demand & Peak Hourly Demand

Year	MDD [3] (gals)	MDD (MG)	PHD (gals)	PHD (GPM)	Population [4] (persons)	MDD/capita (gals/day/person)
2011	6,047,683	6.048	377,980	6,300	29327	**206.22**
2012	5,575,352	5.575	348,460	5,808	29334	190.06
2013	5,559,537	5.560	347,471	5,791	29129	190.86
2014*	5,710,417	5.710	356,901	5,948	29129	196.04
2015	6,040,878	6.041	377,555	6,293	29294	206.22
2016	6,074,903	6.075	379,681	6,328	29459	206.22
2017	6,108,929	6.109	381,808	6,363	29624	206.22
2018	6,142,955	6.143	383,935	6,399	29789	206.22
2019	6,176,980	6.177	386,061	6,434	29954	206.22
2020	6,176,980	6.177	386,061	6,434	29954	206.22

* From January 1 through September 30, 2014, Maximum Day is August 21st and MDD was 5,710,417 gals. While 2014 is not yet over, Alco has never had a Maximum Day in October, November or December of any year.

Calculation of Maximum Day Demand (MDD):

The MDD for years 2011 through 2014 shown in Table 3 are actual recorded data from Alco's Supervisory Control and Data Acquisition (SCADA) system. The MDD per capita for these four years was determined by dividing the MDD by the population served per year.

The projected MDD for years 2015 through 2020 were determined by taking the highest MDD per capita from the actual recorded data, which is 206.22 gals/day/person, and multiplying it by the projected population served for years 2015 through 2020, from Table 2.

Calculation of Peak Hourly Demand (PHD):

After calculating MDD, the PHD was then calculated by determining the average hourly flow during MDD and multiplying by a peaking factor of 1.5 to obtain PHD.[5] In Table 3, the

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[3] The MDD for years 2011 through 2014 are actual, as recorded, MDDs for Alco's existing water system. The MDD for years 2015 through 2020 are calculated from projected population and the highest recorded MDD/capita.

[4] The population for years 2011 through 2014 is the recorded population served. The population for years 2015 through 2019 assume linear growth of 50 homes per year for these years, a total of 250 homes due to various planned developments and in-fill in Alco's existing water system. Year 2020 assumes the same population as year 2019.

PHD is shown in both total gallons required and the equivalent of gallons per minute (during this hour of peak use).

WATER DEMAND OF CENTRAL FUTURE GROWTH AREA PROJECT

By letter dated September 22, 2006, the City of Salinas has determined that the appropriate water demand for the Central Area will be 150 gallons per person per day multiplied by 3.67 persons per dwelling. This water demand was shown in the Administrative Draft of the City of Salinas North Future Growth Area Water System Study prepared by P&D Consultants on August 30, 2006.

The Table below, showing water demand for the Central Area, was taken directly from P&D's Water System Study prepared for the City of Salinas and will be used in Alco's current Water Service Assessment to demonstrate water demand. The Table, including the notes below it, demonstrates that the Central Specific Plan Area adds approximately 2.0 million gallons per day of water demand to the system.

Table 4: TABLE 6 from P&D Consultants' August 30, 2006 Water System Study

Water Demand for the Central Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,765	971,632.5	675
Medium Density	DU	550	1,348	742,074	515
High Density	DU	550	201	110,650.5	77
Retail	Acre	3,000	0	0	0
Office	Acre	3,000	0	0	0
Mixed Use	Acre	3,000	21	63,000	44
Parks	Acre	1,500	26	39,000	27
Schools	Acre	1,500	44	66,000	46
Total				1,992,397	1,384

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor 2
Maximum Day Demand 2,767 GPM
Peak Hour Demand Peaking Factor 4
Peak Hour Demand 5,534 GPM

[5] Pursuant to California Code of Regulations Title 22 Section 64554(b)(1).

Central Future Growth Area: Maximum Day Demand and Peak Hourly Demand:

Using the data from P&D Consultants' Water System Study dated August 30, 2006, the anticipated peak flows for the Central project from the City of Salinas' specific plan are as follows:

Table 5: Central Future Growth Area Project Maximum Day and Peak Hourly Demand [6]

PROJECT	MAXIMUM DAY DEMAND (GPM)	PEAK HOURLY DEMAND (GPM)
CENTRAL	2,767	5,534

These hourly peak flows are generally expressed in GPM to compare it readily with the pumping capacity of the system.

Table 6, below, is a summary of the data obtained from the Total Project Water Demand from the Water System Study prepared by P&D Consultants on August 30, 2006. The data is either directly from P&D's data or is calculated using P&D's data: For example, the Table from P&D Consultants' August 30, 2006 Water System Study provides a Maximum Day Demand of 2,767 GPM. To calculate this in gallons, you would multiply 2,767 GPM x 60 minutes x 24 hours = 3,984,480 gallons, as shown in Table 6. Similarly, the Table from P&D Consultants' August 30, 2006 Water System Study provides a Peak Hourly Demand of 5,534 GPM. To calculate this in gallons, you would multiply 5,534 GPM x 60 minutes x 24 hours = 332,040 gallons, as shown in Table 6.

Table 6: Central Future Growth Area Project Water Demand

Area	Dwelling Units [7]	Daily Water Demand (MG/day) [8]	Annual Water Demand MG/year	Maximum Day Demand (gals)	Peak Hourly Demand (gals)	Peak Hourly Demand (GPM) [9]
CENTRAL	3,377	1.992397	727	3,984,480	332,040	5,534

[6] These demands in GPM include the anticipated demand from the expected residential, irrigation, commercial and industrial uses for the Central Area of development.
[7] From P&D Consultants' Table 6 (Table 4 in this document).
[8] Ibid.
[9] Ibid.

TOTAL SYSTEM WATER DEMAND: ALCO'S EXISTING SYSTEM PLUS CENTRAL FUTURE GROWTH AREA PROJECT

Table 7, below, shows the projected incremental annual water demand of Alco's existing water system plus the incremental annual demand for the Central Future Growth Area project and the total annual water system demand (existing system demand plus project demand) for years 2015 through 2034.

This time period was chosen assuming, for the purposes of this WSA, that the Central Future Growth Area will begin development in year 2015 and that the water demand will increase linearly for the following 20 years until the project is complete.

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Table 7: Projected Annual Total Water System Demand for Years 2015 through 2034

Year	Water Demand Alco Existing Water System [10] (MG/Year)	Demand due to Central [11] (MG/Year)	Total Alco + Central Demand (MG/Year)
2015	1,465.73	36.35	**1,502.08**
2016	1,456.62	72.70	**1,529.32**
2017	1,447.33	109.05	**1,556.38**
2018	1,437.83	145.40	**1,583.23**
2019	1,428.15	181.75	**1,609.90**
2020	1,410.52	218.10	**1,628.62**
2021	1,410.52	254.45	**1,664.97**
2022	1,410.52	290.80	**1,701.32**
2023	1,410.52	327.15	**1,737.67**
2024	1,410.52	363.50	**1,774.02**
2025	1,410.52	399.85	**1,810.37**
2026	1,410.52	436.20	**1,846.72**
2027	1,410.52	472.55	**1,883.07**
2028	1,410.52	508.90	**1,919.42**
2029	1,410.52	545.25	**1,955.77**
2030	1,410.52	581.60	**1,992.12**
2031	1,410.52	617.95	**2,028.47**
2032	1,410.52	654.30	**2,064.82**
2033	1,410.52	690.65	**2,101.17**
2034	1,410.52	727.00	**2,137.52**

[10] For years 2015 through 2020, Alco's existing system annual water demand is projected to reduce, as was shown in Table 2, due to the incremental reduction to achieve a total of 20% reduction by 2020 per SB X7-7. After 2020, the water demand is projected to remain the same for Alco's existing system.

[11] This is the incremental annual water demand for the Central Future Growth Area, assuming the project begins in 2015 and is completed at full build-out in 2034.

Table 8: Projected Total Water System Maximum Day Demand and Peak Hourly Demand for Years 2015 through 2034

Year	Alco MDD [12]	Alco PHD (GPM)	Central MDD [13]	Central PHD (GPM)	Alco + Central MDD	ALCO + CENTRAL PHD (GPM)
2011	6,047,683	6,300	N/A	N/A	6,047,683	6,300
2012	5,575,352	5,808	N/A	N/A	5,575,352	5,808
2013	5,559,537	5,791	N/A	N/A	5,559,537	5,791
2014*	5,710,417	5,948	N/A	N/A	5,710,417	5,948
2015	6,040,878	6,293	199,224	277	6,240,102	6,570
2016	6,074,903	6,328	398,448	553	6,473,351	6,881
2017	6,108,929	6,363	597,672	830	6,706,601	7,193
2018	6,142,955	6,399	796,896	1,107	6,939,851	7,506
2019	6,176,980	6,434	996,120	1,384	7,173,100	7,818
2020	6,176,980	6,434	1,195,344	1,660	7,372,324	8,094
2021	6,176,980	6,434	1,394,568	1,937	7,571,548	8,371
2022	6,176,980	6,434	1,593,792	2,214	7,770,772	8,648
2023	6,176,980	6,434	1,793,016	2,490	7,969,996	8,924
2024	6,176,980	6,434	1,992,240	2,767	8,169,220	9,201
2025	6,176,980	6,434	2,191,464	3,044	8,368,444	9,478
2026	6,176,980	6,434	2,390,688	3,320	8,567,668	9,754
2027	6,176,980	6,434	2,589,912	3,597	8,766,892	10,031
2028	6,176,980	6,434	2,789,136	3,874	8,966,116	10,308
2029	6,176,980	6,434	2,988,360	4,151	9,165,340	10,585
2030	6,176,980	6,434	3,187,584	4,427	9,364,564	10,861
2031	6,176,980	6,434	3,386,808	4,704	9,563,788	11,138
2032	6,176,980	6,434	3,586,032	4,981	9,763,012	11,415
2033	6,176,980	6,434	3,785,256	5,257	9,962,236	11,691
2034	6,176,980	6,434	3,984,480	5,534	10,161,460	11,968

* From January 1 through September 30, 2014, MDD was 5,710,417 gals.

[12] The MDD for years 2015 through 2020 are calculated from projected population (assuming linear growth of 50 homes per year for those years) and the highest recorded MDD/capita. After 2020, the MDD is projected to remain the same for Alco's existing system.

[13] This is the incremental MDD for the Central Future Growth Area, assuming the project begins in 2015 and is completed at full build-out in 2034.

Alco's water system demand, which includes the current demand and the demand projected to the build-out of the project, is within the maximum well capacity of Alco's existing wells, as shown by comparing Tables 8 and 10.

Dry Years

The information provided above is based on normal years. Due to the nature of Alco's water supply being all groundwater, our supply is not as sensitive to dry years as a surface water supplied system. Additionally, due to the fact that our water system does not serve water for agricultural purposes and is mainly for urban use, our water demand does not fluctuate significantly with dry and multiple dry years, see Table 9 below.

Table 9: Water Demand Per Service Connection
For Normal, Single Dry & Multiple Dry Years
1970 through 2013

Years	Water System Demand Per Service Connection [14] Per Year (Gallons)	% Difference From 45-Year Average
1970 through 2013	189,000	N/A
Single Dry Year (2013)	160,000	-15.34
Multiple Dry Years (2007 through 2009)	172,000	-8.99

As can be seen from Table 9 above, the average water demand in a single dry year, which is represented by the average water demand during the 2013 drought[15], is 15.34% lower than Alco's historical water demand per service connection per year. We have used the 2007-2009 drought as an example of multiple dry years and, as can be seen by the Table, the average water demand for these years was only 8.99% greater than Alco's historical water demand per service connection per year. Therefore, Alco's system has not historically experienced an increase in water demand in normal, single dry and multiple dry years; in fact, Alco has seen a decrease in these years.

During single dry years and multiple dry years, Alco's historical data has not shown an increase in the per capita water demand.

[14] Number of Service Connections includes all categories; single-family residential, multi-family residential, commercial, industrial, institutional, landscape irrigation.
[15] The 2013 drought is the driest calendar year on record for the State of California.

Alco's groundwater wells have proven to be a reliable source of water for its service area. During the major droughts of 2013 and 2007-2009, Alco's water capacity did not diminish and the water wells continued to constitute a reliable supply during single and multiple dry years. The wells that provided water during this time period continue to provide a reliable source of water. Additionally, newer wells pumping from the same aquifers have proven to provide adequately during single dry and multiple dry years. Furthermore, the Central area is currently irrigated agricultural areas, which, when converted to urban uses, are expected to draw less water from the aquifer than in the past or at least be water-neutral, impacting the aquifer neither positively nor negatively. It is a goal of the Monterey Water Resources Agency to reduce the water consumption by at least 20% during changes of land use (Mulholland, 1993). Therefore, Alco does not expect water usage in the Central Area to increase the water demand on the aquifer.

Further, in the Department of Water Resources Bulletin 160-98, Appendix 5A Regional Water Budgets with Existing Facilities and Programs, Table ES5A-3 shows that, for the Central Coast Region, the urban water use by 1995 calculations for an average year, was 286,000 af and for a drought year was 294,000 af. Table ES5A-3 projected that in 2020, an average year for urban water use would be 379,000 af and a drought year would be 391,000 af. Further, this Table demonstrates that groundwater supplies actually increased in the 1995 calculations from 1,045,000 af to 1,142,000 af. Similarly, the groundwater supply increases for the projected numbers for 2020, from 1,041,000 af to 1,159,000 af. These numbers are intended to represent the entire Central Coast Region, which includes diverse areas. However, comprehensively, the difference in urban water usage does not increase significantly for the entire area and the supply during drought years for groundwater does not diminish. This trend mimics Alco's own historical experience, in prior single and multiple dry years, that has indicated no increases in actual water usage when comparing normal years to dry and multiple dry years.

WATER SUPPLY, PRODUCTION AND IMPLEMENTATION

Water Supply

As discussed previously, Alco's water supply comes entirely from groundwater. The proposed project areas are currently in agricultural use and are supplied from wells drawing groundwater. As also stated previously, the conversion of irrigated agricultural land to residential development generally results in a net decrease in water consumption, thus Alco expects that the provision of water service to the project area will either draw less water from the aquifer or comparable amounts of past usage for the same area. It is a goal of the Monterey Water Resources Agency to reduce the water consumption by at least 20% during changes of land use (Mulholland, 1993). During the past droughts Alco had no problem of meeting its demands and no changes are expected in the future.

Production

Alco's current production capacities of existing wells are as shown below in Table 10:

Table 10: Existing Well Capacities

Existing Wells	Maximum Well Capacity			Existing Pump Capacity [16]		
	GPM	MG/Day	MG/Year	GPM	MG/Day	MG/Year
Active Wells						
Alisal	4,000	5.76	2,102	2,200	3.168	1,156
Alma	800	1.152	420	750	1.08	394
County	3,500	5.04	1,840	2,400	3.456	1,261
Kilbreth	4,000	5.76	2,102	2,400	3.456	1,261
Santana	2,500	3.6	1,314	2,300	3.312	1,209
Verona	5,000	7.2	2,628	2,300	3.312	1,209
Subtotal	***19,800***	***28.512***	***10,406***	***12,350***	***17.784***	***6,490***
Standby Wells [17]						
Boronda	2,500	3.6	1,314	2,100	3.024	1,104
Las Casitas	4,000	5.76	2,102	2,200	3.168	1,156
Nogal	3,500	5.04	1,840	2,000	2.88	1,051
Subtotal	***10,000***	***14.4***	***5,256***	***6,300***	***9.072***	***3,331***
Existing Wells Total	**29,800**	**42.912**	**15,663**	**18,650**	**26.856**	**9,802**

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[16] The production numbers shown for Existing Pump Capacity are the quantities that the existing pumps installed at these wells can produce. Larger pumps can be installed if necessary to obtain Maximum Well Capacity.

[17] The Boronda, Las Casitas and Nogal Wells are standby wells, as designated by the State Water Resources Control Board (SWRCB), and are planned to be returned to active status after the addition of treatment or blending facilities for arsenic.

Table 11: Projected System Well Production Capacity

SOURCE	CAPACITY (in GPM)						
	2013	2014	2015	2020	2025	2030	2034
EXISTING WELLS [18]							
Active Wells	12,350	12,350	12,350	18,650	18,650	18,650	18,650
Standby Wells	6,300	6,300	6,300	-	-	-	-
NEW WELLS [19]							
New Bardin	-	1,500	1,500	1,500	1,500	1,500	1,500
New Laurel Heights	-	-	2,000	2,000	2,000	2,000	2,000
Surrey (MB #2)	-	-	-	2,000	2,000	2,000	2,000
Monte Bella (MB #3)	-	-	-	-	2,000	2,000	2,000
Padova (MB #4)	-	-	-	-	1,000	1,000	1,000
Hibino	-	-	-	-	-	2,000	2,000
RESERVE WELL LOTS [20]							
WR #2							
WR #3							
First Avenue							
Towt Street							
Williams Road							
Wiren Street							
Acosta Plaza							
Ranchero Drive							
Rider Avenue							
Alma Avenue #2							
TOTAL CAPACITY (GPM)	18,650	20,150	22,150	24,150	27,150	29,150	29,150
PEAK HOURLY SYSTEM DEMAND (GPM) [21]	5,791	5,948	6,570	8,094	9,478	10,861	11,968

[18] Alco's three standby wells, Boronda, Las Casitas and Nogal, are planned to be returned to active service by 2020 through treatment or blending for arsenic. Therefore, the capacities of these wells are included in the capacity for the Active Wells beginning in 2020.
[19] Capacity amounts begin in the years that these wells are projected to be put into service. Surrey (MB #2), Monte Bella (MB #3), Padova (MB #4) and Hibino will be added as necessary as water system demand requires, either by, before or after projected dates indicated.
[20] Reserve well lots to be drilled and put into production as necessary as water system demand requires.
[21] From Table 8 in this WSA.

Table 12: Summary - Production Capacities of Existing and Future Wells

Year	Gallons Per Minute	Gallons Per Day	MG/Day	Gallons Per Year	MG/Year
2013	18,650	26,856,000	26.856	9,802,440,000	9,802.440
2014	20,150	29,016,000	29.016	10,590,840,000	10,590.840
2015	22,150	31,896,000	31.896	11,642,040,000	11,642.040
2020	24,150	34,776,000	34.776	12,693,240,000	12,693.240
2025	27,150	39,096,000	39.096	14,270,040,000	14,270.040
2030	29,150	41,976,000	41.976	15,321,240,000	15,321.240
2034	29,150	41,976,000	41.976	15,321,240,000	15,321.240

Can Alco's Water Production Facilities Meet the Annual Water System Demand of Its Existing System and the Central Future Growth Area Project?

Yes, as can be seen from Table 7, the Total Annual Water System Demand from Alco's existing system and the Central Future Growth Area at full system build-out (2034) is projected to be 2,137.52 MG/year. Table 10 shows that Alco's existing active wells have a capacity to produce 6,490 MG/year.

As can be seen from the tables, for all time periods indicated, Alco's existing active wells (capacity = 6,490 MG/year) can meet the Total Annual Demand of Alco's existing system and the Central Future Growth Area's Total Annual Demand (2,137.52 MG/year). However, Alco plans to add additional water sources as shown in Table 11 (New Wells) and summarized in Table 12. With these additional wells, Alco will exceed the Total Annual Water System Demand of the combined demand of its existing system plus the Central Future Growth Area project by 13,183.72 MG/Year at the expected full project build-out in 2034.

Can Alco's Water Production Facilities Meet the Maximum Day Demand of Its Existing System and the Central Future Growth Area Project?

Yes, as can be seen from Table 8, the Maximum Day Demand from Alco's existing system and the Central Future Growth Area at full system build-out (2034) is projected to be 10.161 MG. Table 10 shows that Alco's existing active wells have a capacity to produce 17.784 MG/day.

As can be seen from the tables, for all time periods indicated, Alco's existing active wells (capacity = 17.784 MG/day) can meet the MDD of Alco's existing system and the Central Future Growth Area's MDD (10.161 MG). However, Alco plans to add additional water sources as shown in Table 11 (New Wells) and summarized in Table 12. With these additional wells, Alco will exceed the MDD of the combined demand of its existing system plus the Central Future Growth Area project by 31.815 MG/day at the expected full project build-out in 2034.

Can Alco's Water Production Facilities Meet the Peak Hourly Demand of Its Existing System and the Central Future Growth Area Project?

Yes, as can be seen from Table 8, the Peak Hourly Demand from Alco's existing system and the Central Future Growth Area at full system build-out (2034) is projected to be 11,968 GPM. Table 10 shows that Alco's existing active wells have a capacity to produce 12,350 GPM.

As can be seen from the tables, for all time periods indicated, Alco's existing active wells (capacity = 12,350 GPM) can meet the PHD of Alco's existing system and the Central Future Growth Area's PHD (11,968 GPM). However, Alco plans to add additional water sources as shown in Table 11 (New Wells) and summarized in Table 12. With these additional wells, Alco will exceed the PHD of the combined demand of its existing system plus the Central Future Growth Area project by 17,182 GPM at the expected full project build-out in 2034.

System Reliability and Redundancy

As previously shown, Alco does have the water capacity to meet the annual water demand, the MDD and the PHD of its existing system plus the Central Future Growth Area during normal operation. However, Alco's system for its existing system and for its future system design, takes into consideration extraordinary circumstances which need to be considered for the proper operation of the water system to provide a safe reliable water supply to its customers.

All of Alco's major well sources are equipped with an onsite standby generator with an automatic transfer switch and Alco also has portable standby generators that can be moved to any water facility in need of power. Additionally, all future well and pumping facilities will be designed to be equipped with an onsite standby generator.

Alco's existing wells are located throughout the water system and rely on different parts of the power grid, therefore it is less likely that multiple sources would be affected by power outages. Future wells will be similarly disbursed throughout the water system to decrease the impacts of localized power outages.

Depending upon system demand requirements, Alco has the ability to add additional wells to the water system in order to meet as shown in Table 11. The timeline of the well installations can be modified dependent upon demand or if necessitated by contamination or loss of a well source. Alco has already drilled and test-pumped the new Bardin Well. The pump station facilities are expected to be completed and State Water Resources Control Board (SWRCB) approval is anticipated in year 2014. Approval has been obtained from SWRCB to drill the new Laurel Heights Well and construction is planned to begin in year 2014 with an anticipated completion date by the end of 2015. Approval has also been obtained for the Surrey Way Well (MB #2) and Monte Bella Boulevard Well (MB #3) and well drilling permits have already been obtained for these wells from the Monterey County Health Department (MCHD). Anticipated construction and completion dates for these wells are 2020 and 2025 respectively. Table 11 also shows the Padova Well and the Hibino Well as scheduled to be permitted by MCHD and SWRCB and drilled and brought online by 2025 and 2030 respectively. However, for all of the above wells, construction and completion dates could be moved to earlier or later dates dependent on water system demand requirements. See Tab 2 for the locations of these wells. Further, even after the addition of these new wells as listed in Table 11, Alco has ten well lots in reserve that wells could be drilled upon. Well locations are chosen by Alco on the basis of water quality and potential production capacities. Alco does not plan on obtaining any well sites in the Central Future Growth Area, as our experience and knowledge of the water quantity and quality in that area shows there to be insufficient quantity and water with a quality below State and Federal water quality standards for certain constituents.

Potential events that could cause Alco to accelerate its well construction schedule would be loss of a well due to collapse or inability to use the well due to changes in its water quality or changes in water quality standards. If any of Alco's existing water sources were to be lost, either to collapse or to potential contamination or changes in water quality standards, it would be necessary to replace the well source. Alco already has plans for construction of six new wells as shown in Table 11 and, Alco also has the benefit of already possessing ten well lots in its service area in the event that any of its existing sources ever need to be replaced for any reason.

While Alco does not forecast its water sources to become contaminated, that potential is always a consideration for any water system. Further, State and/or Federal water quality standards may be changed such that a source that is currently in compliance with all standards may be out of compliance after the implementation of any new standards. Alco deals with these issues by diversifying source locations in the service area, so that any contamination, if it were to occur, is only likely to affect a minimal number of sources and not all of the water sources at the same time. If contamination does occur, having diversified sources allows Alco to isolate the affected sources and evaluate whether:

- To discontinue use of the sources without replacing them
- To discontinue use of the sources and replace them with new sources
- To blend the sources with sources meeting the standards
- To treat the sources for the contaminant(s) found

Alco’s practice is to obtain a 20,000 square foot well lot, which is large enough to allow the utility to install blending and/or treatment facilities as is deemed necessary, depending upon the contaminant.

If treatment were to become necessary, Alco’s current customers will benefit from the additional ratepayers in the Central Future Growth Area, as costs will be able to be spread over a larger customer base.

Additionally, Alco plans to construct a 5MG water storage tank at an elevation that will adequately provide pressure to its existing system and additional capacity for the future demand. Furthermore, the storage facility will allow treatment of Alco's current standby sources by blending the water produced by these wells with water from sources that meet water quality standards. The 5MG storage tank will benefit both system reliability and system pressure.

Implementation - Financing of Water System Facilities

Alco is a public utility regulated by the California Public Utilities Commission. Facilities installed to provide service to new development are covered by a Rule 15 Main Extension Contract. This contract requires developers to pay for all the water system facility improvements necessary to provide water service to their projects. Developers are required to pay for water system engineering and construction, inspection, pipes, valves, booster pumping facilities, wells, treatment, reservoirs and all necessary appurtenances that supply water to their development. In addition, they are required to provide suitable land, easements and rights-of-way to install water system facilities including but not limited to wells, booster stations, pipelines and/or reservoirs at locations acceptable to the utility. In this manner of developer's financing of facilities, it is assured that all of their proposed projects will have the facilities to be supplied with water.

The water utility, however, does finance the water system facilities and improvements for its existing water users. In the case of the 5MG storage reservoir, it will be built and paid for by the utility.

Approvals

Once a specific plan and the EIR for the project are approved by the City, the following approvals are needed to implement the water system facilities that will affect the project. Alco's current service area, approved by the California Public Utilities Commission (CPUC), already includes a portion of the Central Area. If Alco were to provide service to the rest of the Central area, it would require approval of the CPUC to add the rest of the Central Area to Alco's service area. The following approvals are not necessarily in order of importance or timing;

- Easements and Rights-of-Way meeting utility requirements
- Land for production, storage and pumping facilities
- Utility's Engineer to perform system modeling for pipe sizing
- Monterey County Health Department, Environmental Health Division for well permit
- Monterey Bay Unified Air Pollution Control District for operation of emergency generator
- Monterey County Public Works for encroachment permit of pipelines
- City of Salinas Public Works for encroachment permit of pipelines
- State Water Resources Board for well operating permit
- State Water Resources Board for approval of wells and treatment, if required, and associated water system facilities permit amendment(s)

ALCO'S ABILITY TO MEET THE PROJECT WATER DEMAND

Per Senate Bills 610 and 221, Alco is responding to the following question in this report; "Will the water supplier's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to the water supplier's existing and planned future uses, including agricultural and manufacturing uses?"

The answer is YES, the Alco system CAN provide the required and necessary water service to the proposed projects in the Central Area of the City's Specific Plans during normal years, dry years and multiple dry years in conjunction with adequately providing water service as per the requirements of Senate Bills 610 and 221 during normal, single dry and multiple dry water years.

Even if potential water contamination occurs, Alco can still adequately provide water service as a result of the utility's diversification of water source locations, its additional well locations that can be developed, and its well lots that are sized to allow for future water treatment facilities, if necessary, which can be installed if the need were to occur.

Alco has sources of proven capacity to meet current and future water demands and will add any future sources and facilities as specific projects demand and as outlined in the previous content of this report. These water system facilities will be paid for by the project developers and any other entities necessitating the water system facilities to be installed. None of the water for these proposed projects will come from water supplies never before used; all of the water will come either from our existing sources or new groundwater well sources drawing water from an aquifer already in use and of known quality and quantity.

Additionally, as stated earlier in this report, the California Public Utilities Commission (CPUC), in its Decision 09-04-035 (D.0904035) has already determined that Alco could adequately provide water service to the future growth areas and authorized Alco to do so.

SIGNATORY PAGE

This Water Service Assessment was prepared this 17th day of October, 2014 by:

THOMAS R. ADCOCK

Signature

President, Alisal Water Corporation
Title

City of Salinas

DEVELOPMENT AND ENGINEERING SERVICES · 200 Lincoln Avenue Salinas, California
(831) 758-7241

September 22, 2006

Mike Jones
CALIFORNIA WATER SERVICE COMPANY
244 Commission Street
Salinas, CA 93901-3737

Robert Adcock
ALCO WATER SERVICE COMPANY
249 Williams Road
Salinas, CA 93905-2842

SUBJECT: FUTURE GROWTH AREA WATER SUPPLY

Dear Mr. Jones and Mr. Adcock:

The Water Supply Assessments (WSA) prepared for your respective service areas employ different methodologies to project water use/demand calculations. A further study (copy attached) prepared by P&D Consultants for the Plans for Services and Facilities report required for the Sphere of Influence and Annexation applications provides yet another method of projecting water demand (using the City of Chino Hills as the source).

The California Water Service Company (Cal Water) WSA projects an average use of 355.8 gallons per day per service (dwelling unit) or 97.3 gallons per person per day factoring the City's current average household size of 3.67 persons. A subsequent survey of 64 households in a recently developed area indicated water use of 103 gallons per person per day. However, looking at the projected water demand for the West Area Specific Plan, 2,100,000 gallons per day is estimated. Dividing that number by the proposed 4,340 dwelling units results in a projected demand of 483.8 gallons per day per unit or 131.8 gallons per person per day.

The Alisal Water Service Company (ALCO) WSA projects an average use of 312 gallons per day per unit or 85 gallons per person per day. ALCO's subsequent analysis of the Central Specific Plan Area indicated a projected demand of 105.9 gallons per person per day.

Both the Cal Water and ALCO projected demand is inclusive of the associated commercial, school, and park uses anticipated in the planning areas.

P&D Consultants' report projects demand at 150 gallons per person per day plus additional demands for the associated uses. Using the projected demand for the West Area Specific Plan of 2,665,773 gallons per day divided by 4,340 dwelling units results in a projected demand of

614.23 gallons per day per unit or 167.37 gallons per day per person. This is nearly double ALCO's projection.

Water use is such a critical and controversial aspect of our planning process. As such, it is important that we are consistent in the methodologies used to project demand. The City has historically projected water use at 150 gallons per person per day as part of our environmental review process. This figure is inclusive of the associated "other' uses. City staff is comfortable using this figure with the recognition that the "other" uses in the specific plans will be relatively "dry" retail, service commercial, mixed-use, and public uses. It is noted that the federal Environmental Protection Agency projects a per person water demand of 183 gallons per person per day. However, California has imposed water conservation regulations for many years, which are not necessarily found across the country.

This issue was discussed at the last Future Growth Area planning workshop held on September 14, 2006. The direction established at that meeting was to request a commitment from the water service providers to assure water service of 150 gallons per person per day inclusive of the "other" associated uses in the specific plans. Is this possible?

City staff would be happy to meet with both Cal Water and ALCO to discuss this further if you think that it would be appropriate. Do not hesitate to contact me with any questions.

Sincerely,

ROBERT RICHELIEU
Planning Manager

Cc via email: Robert C. Russell, PE, Deputy City Manager/City Engineer
Carl Niizawa, PE, DEE, Deputy City Engineer
John Fair, PE
John Bridges, EDAW
Future Growth Area Development Teams

ADMINISTRATIVE DRAFT

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

WATER SYSTEM STUDY

Prepared for:

City of Salinas
Community Development Department
200 Lincoln Avenue
Salinas, CA 93901
Contact: Robert Richelieu, Planning Manager

Prepared by:

P&D Consultants
999 Town & Country Road, 4th Floor
Orange, CA 92868

August 30, 2006

ADMINISTRATIVE DRAFT

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

WATER SYSTEM STUDY

TABLE OF CONTENTS

Purpose

The purpose of this report is to identify the proposed water facilities necessary to develop the Salinas North Future Growth Area (North FGA) as identified in Exhibit 1. The North FGA is divided into three specific plan areas: west, central and east as shown in Exhibit 2 and comprises 2,488 acres.

Background Information

The City of Salinas, the county seat and largest city in Monterey County, is located in the northwest part of the Salinas Valley about 60 miles south of San Jose and 10 miles inland from Monterey Bay.

Study Methodology

The North FGA involves 2,488 acres which are divided into three specific plan areas. The development capacity of the North FGA specific plan areas are shown in the following three tables. The estimate of population for the specific plan area is 3.67 people per dwelling unit.

TCB | AECOM

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

P&D Consultants
8/30/2006

EXHIBIT 1

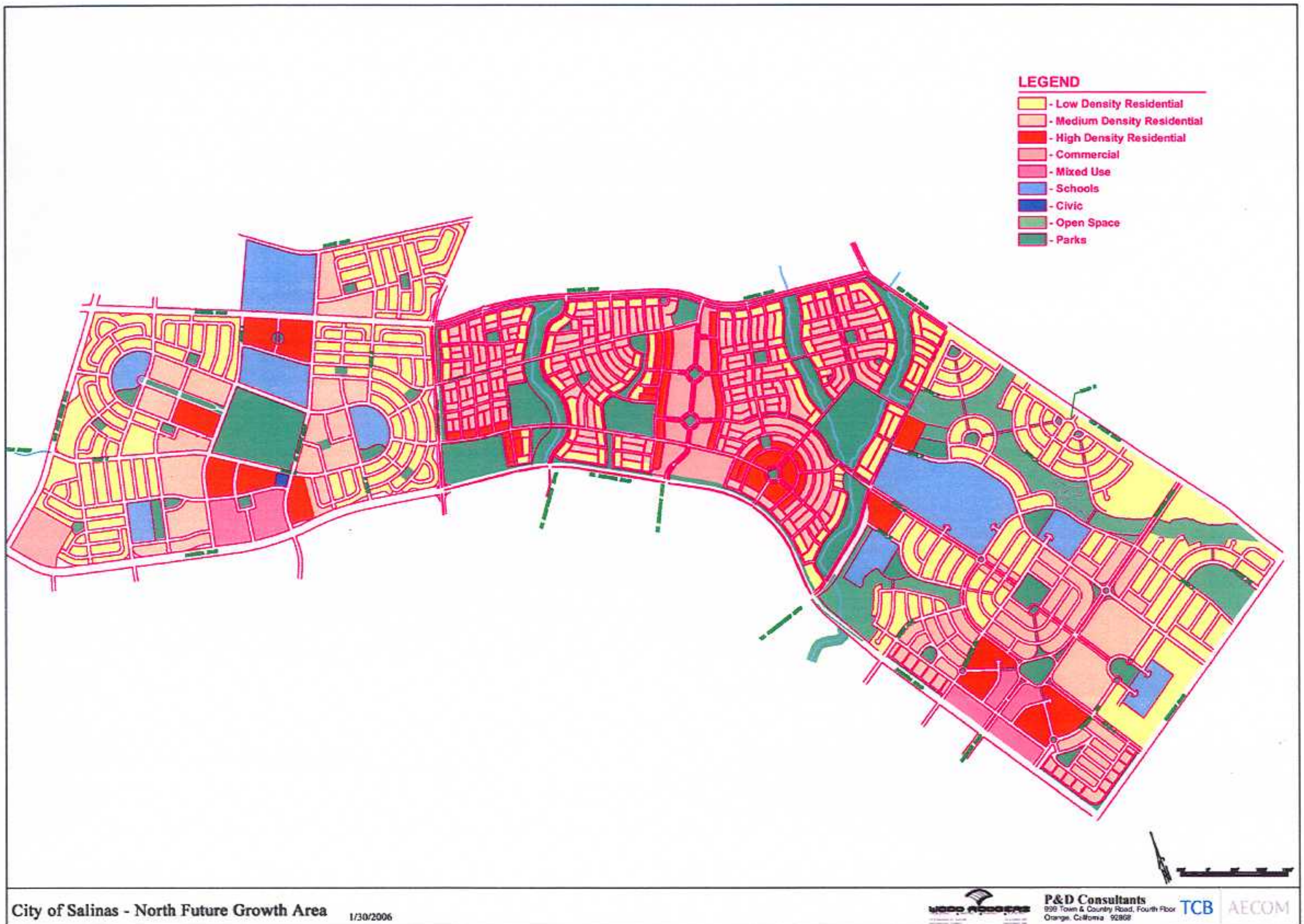

LEGEND
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Commercial
- Mixed Use
- Schools
- Civic
- Open Space
- Parks
City of Salinas - North Future Growth Area
1/30/2006
P&D Consultants
999 Town & Country Road, Fourth Floor
Orange, California 92868
TCB
AECOM

EXHIBIT 2

Table 1.1
North Future Growth Area – West Specific Plan area
General Plan Development Capacity

		West SP Area		
		Net	Dwelling Units	Square Feet
	Notes	Acres	Households	(Thousands)
Residential Land Use				
RLD Residential Low Density	[1]	257	1,671	0
RMD Residential Medium Density		129	1,515	0
RHD Residential High Density		63	1,057	0
Commercial/Office/Mixed Land Use				
RET Retail		11	6	120
OFF Office		0	0	0
MIX Mixed Use	[2]	30	91	659
Light Industrial Land Use				
GCO General Commercial Light Industrial		0	0	0
GI General Industrial		0	0	0
Open Space Land Use				
OPN Open Space	[1] [2]	64	0	0
PKS Parks	[3]	66	0	0
PS Public/Semi Public	[1] [4]	72	0	785
	Total	**693**	**4,340**	**1,564**

Assumptions:

Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Footnotes:

[1] Total acreage for RLD use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 1,042 net acres, rather than 1,042 net acres, as shown in Table LU-3. The difference (18 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 15 net acres of RLD were re-designated as PSP to accommodate a combined Junior and Senior High School complex, and 3 net acres were re-designated as Open Space.

[2] Total acreage for MIX use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 118 net acres, rather than 120 net acres, as shown in Table LU-3. The difference (2 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 2 net acres of MIX were re-designated as OS in the vicinity of the Junior and Senior High School complex described above.

[3] Total acreage for PKS within the Specific Plan Areas will be based on the Future Park Needs section of the Conservation/Open Space Element which will need to be updated to reflect final General Plan information.

[4] Total acreage for PSP includes public schools the size of which was estimated for the North Future Growth Area. The actual net acres required for the individual school sites will be determined by the respective school district.

Table 1.2
North Future Growth Area – Central Specific Plan Area
General Plan Development Capacity

		Central SP Area		
		Net	Dwelling Units	Square Feet
	Notes	Acres	Households	(Thousands)
Residential Land Use				
RLD Residential Low Density	[1]	272	1,765	0
RMD Residential Medium Density		115	1,348	0
RHD Residential High Density		12	201	0
Commercial/Office/Mixed Land Use				
RET Retail		0	0	0
OFF Office		0	0	0
MIX Mixed Use	[2]	21	64	468
Light Industrial Land Use				
GCO General Commercial Light Industrial		0	0	0
GI General Industrial		0	0	0
Open Space Land Use				
OPN Open Space	[1] [2]	142	0	0
PKS Parks	[3]	26	0	0
PS Public/Semi Public	[1] [4]	44	0	483
	Total	**633**	**3,377**	**951**

Assumptions:

Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Footnotes:

[1] Total acreage for RLD use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 1,042 net acres, rather than 1,042 net acres, as shown in Table LU-3. The difference (18 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 15 net acres of RLD were re-designated as PSP to accommodate a combined Junior and Senior High School complex, and 3 net acres were re-designated as Open Space.

[2] Total acreage for MIX use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 118 net acres, rather than 120 net acres, as shown in Table LU-3. The difference (2 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 2 net acres of MIX were re-designated as OS in the vicinity of the Junior and Senior High School complex described above.

[3] Total acreage for PKS within the Specific Plan Areas will be based on the Future Park Needs section of the Conservation/Open Space Element which will need to be updated to reflect final General Plan information.

[4] Total acreage for PSP includes public schools the size of which was estimated for the North Future Growth Area. The actual net acres required for the individual school sites will be determined by the respective school district.

Table 1.3
North Future Growth Area – East Specific Plan Area
General Plan Development Capacity

			East SP Aea	
		Net	Dwelling Units	Square Feet
	Notes	Acres	Households	(Thousands)
Residential Land Use				
RLD Residential Low Density	[1]	306	1,992	0
RMD Residential Medium Density		90	1,053	0
RHD Residential High Density		55	914	0
Commercial/Office/Mixed Land Use				
RET Retail		0	0	0
OFF Office		0	0	0
MIX Mixed Use	[2]	29	86	627
Light Industrial Land Use				
GCO General Commercial Light Industrial		0	0	0
GI General Industrial		0	0	0
Open Space Land Use				
OPN Open Space	[1] [2]	147	0	0
PKS Parks	[3]	44	0	0
PS Public/Semi Public	[1] [4]	78	0	848
	Total	**748**	**4,044**	**1,475**

Assumptions:

Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Footnotes:

[1] Total acreage for RLD use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 1,042 net acres, rather than 1,042 net acres, as shown in Table LU-3. The difference (18 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 15 net acres of RLD were re-designated as PSP to accommodate a combined Junior and Senior High School complex, and 3 net acres were re-designated as Open Space.

[2] Total acreage for MIX use within the North Future Growth Area as shown on the adopted General Plan Land Use Policy Map (Figure LU-3) is 118 net acres, rather than 120 net acres, as shown in Table LU-3. The difference (2 net acres) is attributed to a late change to the Land Use Policy Map within Area 3, where 2 net acres of MIX were re-designated as OS in the vicinity of the Junior and Senior High School complex described above.

[3] Total acreage for PKS within the Specific Plan Areas will be based on the Future Park Needs section of the Conservation/Open Space Element which will need to be updated to reflect final General Plan information.

[4] Total acreage for PSP includes public schools the size of which was estimated for the North Future Growth Area. The actual net acres required for the individual school sites will be determined by the respective school district.

Design Guidelines

The City of Salinas is served by two water companies; California Water Service Company and ALCO Water Company. The current service boundary separating these water providers is the electric power line easement near Hemingway Drive. A list of water demand rates for various land uses is listed in Table 2

Table 2
Flow Generation Rates

Development Type	Units	Generation Rate (Gallons Per Day)
Person	Person	150
DU	DU	550
Retail	Acre	3000
Office	Acre	3000
Mixed Use	Acre	3000
Parks	Acre	1500
School	Acre	1500

Source: City of Chino Hills

DU = Dwelling Unit

Water lines were designed with a minimum size of 8 inches. The water lines were designed for maximum day plus fire flow. Unit costs were developed and are as follows.

Table 3
Pipe Unit Cost

Pipe Size (Inches)	Unit Cost (Per Linear Foot)
8	\$ 70
12	\$ 90
16	\$100
24	\$120

Results of the Model

West Specific Plan Area

The West Specific Plan (SP) area adds approximately 2.7 million gallons per day of water demand to the system. Water demand is listed in Table 4. The total length of water lines for this plan area is listed in Table 5.

Table 4
West Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,671	919,886	639
Medium Density	DU	550	1,515	834,008	579
High Density	DU	550	1,057	581,879	404
Retail	Acre	3,000	11	33,000	23
Office	Acre	3,000		0	0
Mixed Use	Acre	3,000	30	90,000	63
Parks	Acre	1,500	66	99,000	69
Schools	Acre	1,500	72	108,000	75
			Total	**2,665,773**	**1,851**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	3,702 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	7,405 GPM

Table 5
Water for West Specific Plan Area

Pipe Size (Inches)	Length (Feet)	Unit Cost	Total
8	96,525	$70	$6,756,750
12	58,423	$90	$5,258,070
		Total	**$12,014,820**

Central Specific Plan

The Central Specific Plan (SP) area adds approximately 2.0 million gallons per day of water demand to the system. Water demand is listed in Table 6. The total length of water lines for the plan area is listed in Table 7.

Table 6
Central Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,765	971,632.5	675
Medium Density	DU	550	1,348	742,074	515
High Density	DU	550	201	110,650.5	77
Retail	Acre	3,000	0	0	0
Office	Acre	3,000	0	0	0
Mixed Use	Acre	3,000	21	63,000	44
Parks	Acre	1,500	26	39,000	27
Schools	Acre	1,500	44	66,000	46
			Total	**1,992,397**	**1,384**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	2,767 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	5,534 GPM

Table 7
Water for Central Specific Plan Area

Pipe Size (Inches)	Length (Feet)	Unit Cost	Total
8	90,088	$ 70	$6,306,160
12	57,961	$ 90	$5,216,490
16	2,471	$100	$ 247,100
		Total	**$11,769,750**

East Specific Plan

The East Specific Plan (SP) area adds approximately 2.5 million gallons per day of water demand to the system. Water demand is listed in Table 8. The total length of water lines for this plan area is listed in Table 9.

Table 8
East Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,992	1,096,596	762
Medium Density	DU	550	1,053	579,676.5	403
High Density	DU	550	914	503,157	349
Retail	Acre	3,000	0	0	0
Office	Acre	3,000	0	0	0
Mixed Use	Acre	3,000	29	87,000	60
Parks	Acre	1,500	44	66,000	46
Schools	Acre	1,500	78	117,000	81
			Total	**2,449,429**	**1,851**

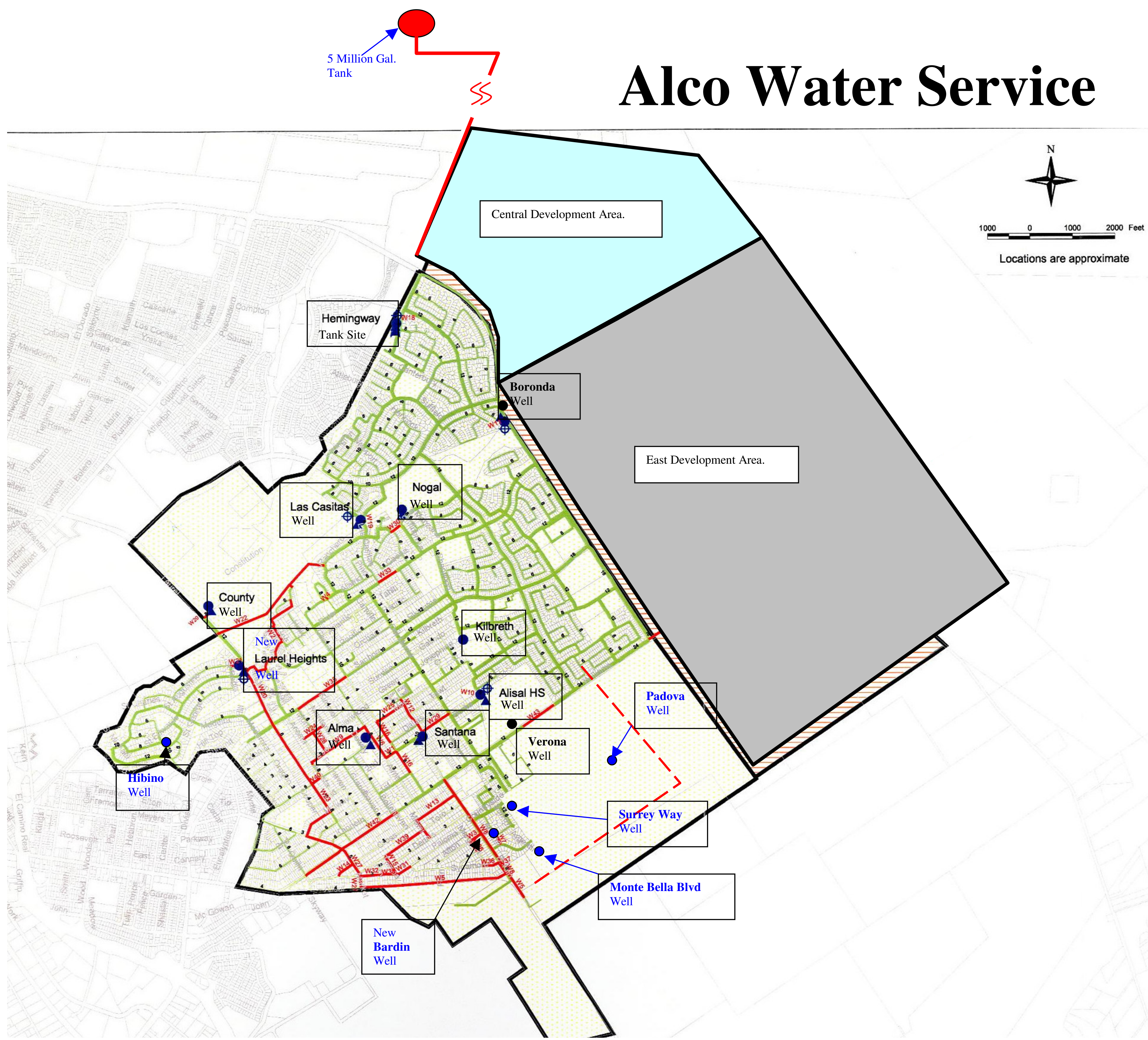
DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	3,402 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	6,804 GPM

Table 9
Water for East Specific Plan Area

Pipe Size (inches)	Length (feet)	Unit Cost	Total
8	105,649	$ 70	$7,395,430
12	25,937	$ 90	$2,334,330
16	28,771	$100	$2,877,100
24	6,010	$120	$ 721,200
		Total	**$13,328,060**

2014 WSA MAP



Alco Water Service
5 Million Gal. Tank
Central Development Area.
East Development Area.
Locations are approximate
Hemingway Tank Site
Boronda Well
Nogal Well
Las Casitas Well
County Well
New Laurel Heights Well
Kilbreth Wells
Alisal HS Well
Padova Well
Alma Well
Santana Well
Verona Well
Hibino Well
Surrey Way Well
Monte Bella Blvd Well
New Bardin Well

APPENDIX H – NOISE TECHNICAL REPORT

Central Area Specific Plan

City of Salinas, California

November 7, 2018

jcb Project # 2015-152

Prepared for:

DE NOVO PLANNING GROUP

Attn:
Steve McMurtry
1020 Suncast Lane, Suite 106
El Dorado Hills, California 95762

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan
President
Member, Institute of Noise Control Engineering (INCE)

This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts. The noise analysis was completed by j.c. brennan & associates. Inc. (December 2016).

No comments related to noise were received during the public review period for the Notice of Preparation.

3.7.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 to 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Like CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is like L_{dn}, but includes a +5-dB penalty for evening noise. Table 3.7-1 lists several examples of the noise levels associated with common situations.

TABLE 3.7-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. The following relationships occur regarding increases in A-weighted noise level:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and

- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Surrounding Land Uses

North: Land to the north of the Specific Plan Area is currently used primarily for agricultural production with some scattered residences along Old Stage Road. Further to the north is the unincorporated community of Natividad, near the corner of the intersection of Old Natividad Road and Old Stage Road. Scattered residences and other non-residential uses are located within Natividad. These land uses are all located in the unincorporated area of Monterey County.

East: Land to the east of the Specific Plan Area is currently used primarily for agriculture. Across Boronda Road directly to the east and southeast, is the East Area Specific Plan. The portion of the East Area Specific Plan which abuts the Specific Plan Area is primarily residential. Development of the East Area Specific Plan is expected to include up to 4,000 dwelling units and 22 acres of village center/commercial uses.

South: Across Boronda Road directly to the south, is the Harden Ranch Specific Plan. The portion of the Harden Ranch Specific Plan which abuts the Plan Area is primarily residential. Additionally, two schools, Everett Alvarez High School and John Steinbeck Elementary School, are located to the south of the Specific Plan Area.

West: Across Natividad Road directly to the west, is the West Area Specific Plan. The portion of the West Area Specific Plan which abuts the Plan Area is primarily residential. Most of the residences are of the type associated with low density residential uses, mainly single-family detached homes. The area directly to the west is residential consisting of low, medium and high density residential uses. The West Area Specific Plan designates this land for Supplemental Storm Water Detention/Retention, Neighborhood Parks, Neighborhood Edge Residential (NE), Neighborhood General 1 Residential (NG-1), and Neighborhood General 2 Residential (NG-2). Also located farther to the west is Santa Rita Elementary School (Santa Rita Union School District) which is zoned Public/Semipublic (PS).

The City and County General Plan land use designations for the above areas are illustrated on Figure 2-3.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, short-term and continuous (24-hour) noise level measurements were conducted in the Plan Area on January 19th and 20th, 2016. The noise measurement locations are shown on Figure 3.7-1. The noise level measurement survey results are provided in Table 3.7-2. Appendix A of **Appendix H** of this EIR shows the complete results of the noise monitoring survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.7-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	DATE/TIME	L_{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, DB					
				DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
				L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
Continuous (24-hour) Noise Level Measurements									
A	75 ft. from centerline of Boranda Road	1/19/16 - 1/20/16 24-hour	69.0	66.2	64.7	79.9	61.5	51.1	76.9
Short-Term Noise Level Measurements									
1	Northwest corner of site	1/19/16 – 4:45 p.m.	N/A	55	50	61	Primary noise source is: Traffic on Natividad Road		
		1/20/16 – 8:15 a.m.	N/A	56	51	61			
		1/20/16 1:35 p.m.	N/A	56	50	62			
2	South/central portion of site	1/19/16 – 5:15 p.m.	N/A	66	64	72	Primary noise source is: Traffic on Boronda Road		
		1/20/16 – 8:40 a.m.	N/A	65	63	72			
		1/20/16 – 2:10 p.m.	N/A	65	62	72			

NOTE: N/A = NOT APPLICABLE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2016.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the proposed project by Fehr & Peers. Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Plan Area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was added to the noise prediction model to account for various noise barrier heights. A -5 dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of most sensitive receptors located closest to the Plan Area roadway segments analyzed in this section.

Table 3.7-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in the appendices to this report.

TABLE 3.7-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}
Constitution Blvd.	South of E. Boronda	61.9
E. Boronda Rd.	N. Main to San Juan Grade	67.5
E. Boronda Rd.	San Juan Grade to McKinnon	66.4
E. Boronda Rd.	McKinnon to El Dorado	65.9
E. Boronda Rd.	El Dorado to Natividad	65.1
E. Boronda Rd.	Natividad to Independence	67.2
E. Boronda Rd.	Independence to Hemmingway	65.8
E. Boronda Rd.	Hemmingway to Constitution	58.4
E. Boronda Rd.	Constitution to N. Sanborn	60.3
E. Boronda Rd.	N. Sanborn to Williams	58.5
El Dorado Dr.	South of E. Boronda	54.3
Hemmingway Dr.	South of E. Boronda	55.5
Independence Blvd.	South of E. Boronda	60.6
McKinnon St.	South of E. Boronda	64.0
N. Main St.	North of E. Boronda	67.0
N. Main St.	South of E. Boronda	65.3
N. Sanborn Rd.	South of E. Boronda	56.3
Natividad Rd.	South of E. Boronda	65.7
Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.9
Natividad Rd.	Future Russell Rd. to Rogge	62.4
Natividad Rd.	North of Rogge	60.6
Old Stage Rd.	North of Future Constitution	57.9
Old Stage Rd.	Future Constitution to Williams	56.7
Old Stage Rd.	South of Williams	54.6
Rogge Rd.	San Juan Grade to Natividad	61.7
Russell Rd.	West of San Juan Grade	65.0
San Juan Grade Rd.	South of E. Boronda	65.2
San Juan Grade Rd.	E. Boronda to Van Buren	69.6
San Juan Grade Rd.	Van Buren to Russell	67.3
San Juan Grade Rd.	Russell to Rogge	66.0
San Juan Grade Rd.	North of Rogge	62.9
Van Buren Ave.	West of San Juan Grade	57.1
Williams Rd.	West of E. Boronda	62.1
Williams Rd.	East of E. Boronda	46.6

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

3.7.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels more than local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Building codes are updated periodically and each individual building within the Plan Area would be subject to the Building Code in effect at that time.

City of Salinas General Plan

The City of Salinas General Plan Noise Element includes the following goals, policies, and actions regarding noise that are applicable to the proposed project:

NOISE ELEMENT

Policy N-1-1: Ensure that new development be made compatible with the noise environment by using noise/land use compatibility standards and the Noise Contours Map as a guide for future planning and development decisions.

Policy N-1-2: Require the inclusion of noise-reducing design features in development and reuse/revitalization projects to address the impact of noise on residential development.

Policy N-1-3: Locate only urban development within the Salinas Municipal Airport "area of influence" that is compatible with the airport noise environment and meets the guidelines of the Caltrans Handbook.

Policy N-1-4: Ensure proposed development meets Title 24 Noise Insulation Standards for construction.

Policy N-2-1: Ensure that noise impacts generated by vehicular sources are minimized through the use of noise control measures (i.e. earthen berms, landscaped walls, lowered streets).

Policy N-2-2: Control truck traffic routing to reduce transportation related noise impacts on sensitive uses.

Policy N-3-1: Enforce the City of Salinas Noise Ordinance to ensure stationary noise sources and noise emanating from construction activities, private developments/residents and special events are minimized.

NOISE COMPATIBILITY STANDARDS

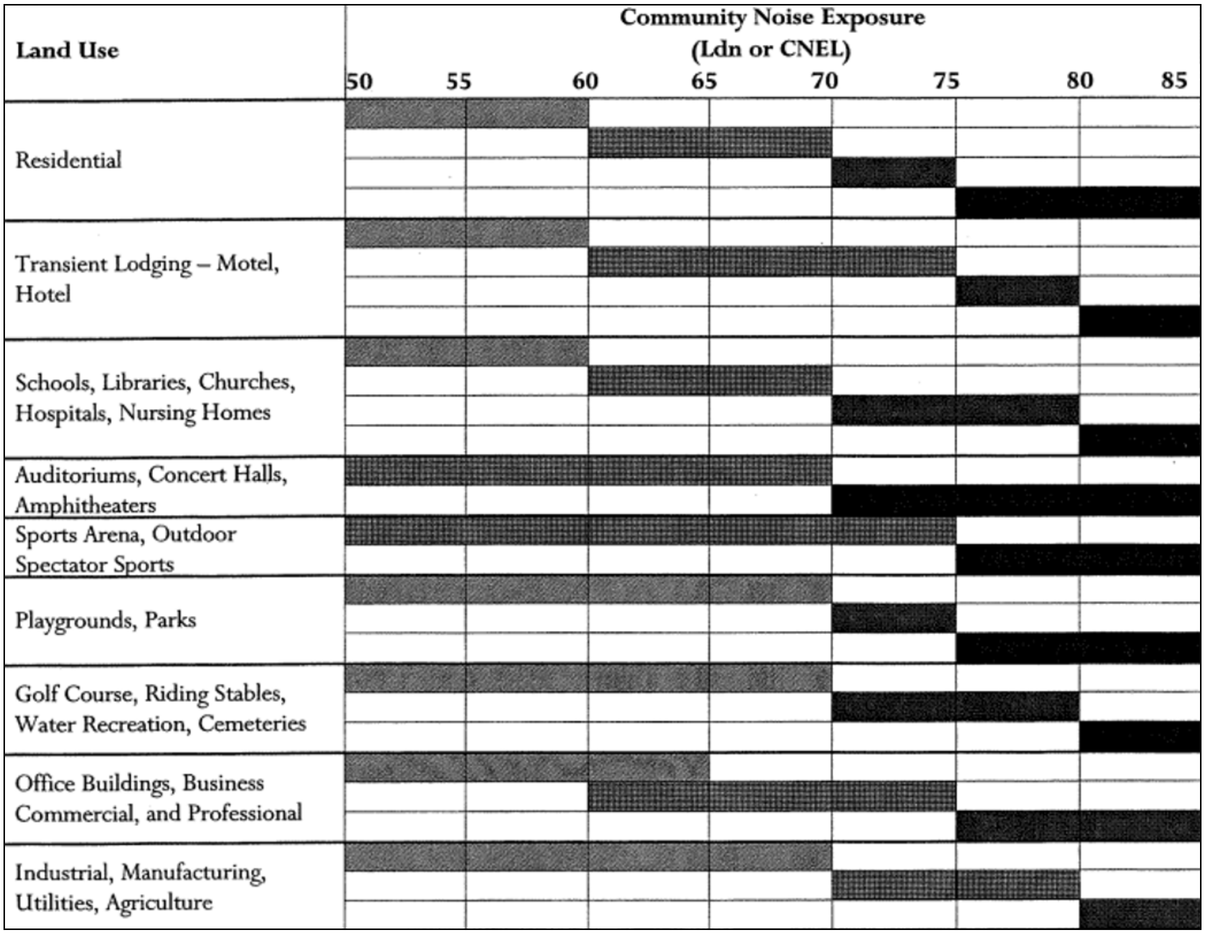
Table N-2 (reprinted as Table 3.7-4 below) of the General Plan shows a simplified view of the maximum noise level of several land use categories. Table N-3 (reprinted as Table 3.7-5 below) gives a detailed overview of the acceptable and unacceptable community noise exposure for all the land use categories that are applied throughout the City. Several of the land use categories are of relevance to the proposed project, namely Residential, Schools, Parks, and Agriculture. However, the Residential land use category is the most sensitive and as such it will be used as the bench mark for Acceptable and Unacceptable noise levels.

TABLE 3.7-4: EXTERIOR NOISE STANDARDS

DESIGNATION/DISTRICT OF PROPERTY RECEIVING NOISE	*MAXIMUM NOISE LEVEL, L_{DN} OR CNEL, DBA*
Agricultural	70
Residential	60
Commercial	65
Industrial	70
Public and Semipublic	60

SOURCE: CITY OF SALINAS GENERAL PLAN, TABLE N-2. SEPTEMBER 2002.

TABLE 3.7-5: NOISE/LAND USE COMPATIBILITY MATRIX



	ZONE A - NORMALLY ACCEPTABLE: *Specified land use is satisfactory, based upon the assumption that any buildings involved meet conventional Title 24 construction standards. No special noise insulation requirements.*
	ZONE B - CONDITIONALLY ACCEPTABLE: *New construction or development shall be undertaken only after a detailed noise analysis is made and noise reduction measure are identified and included in the project design.*
	ZONE C - NORMALLY UNACCEPTABLE: *New construction or development is discouraged. If new construction is proposed, a detailed analysis is required, noise reduction measures must be identified, and noise insulation features included in the design.*
	ZONE D - CLEARLY UNACCEPTABLE: *New construction or development clearly should not be undertaken.*

SOURCE: CITY OF SALINAS GENERAL PLAN, TABLE N-3. SEPTEMBER 2002.

Noise levels of up to 70 dBA are considered conditionally acceptable; new development exposed to such noise levels may only be undertaken after a detailed noise analysis is conducted and noise reduction measures are included in the project design. Noise exposure levels above 70 dBA are considered unacceptable. New development in such areas will likely need substantial mitigation to meet City standards.

City of Salinas Zoning Code and Noise Ordinance

Section 37-50.180 of the Zoning Code identifies performance standards for noise. The maximum noise level for Residential Districts, the most sensitive zone in the Plan Area, is set at 60 dBA. This standard is 5.0 dBA lower between 9:00 p.m. and 7:00 a.m. It is noted that there is a slight reprieve in that noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the standard by 5.0 dBA. Furthermore, interior noise level in any residential dwelling unit located in a mixed-use building or development shall not exceed a maximum of 45 dBA from exterior ambient noise. Again, there is a slight reprieve in that noise that is produced for no more than a cumulative period of one minute in any hour may exceed the standards above by 10.0 dBA.

The City's Noise Ordinance, Chapter 21A of the Municipal Code, defines the following classes of noise (A through D) and defines noise regulations that pertain to each class:

- Class A Noise is defined as noise created by equipment operated in the public interest or for emergency or safety purposes. Such equipment includes sirens, street sweepers, garbage trucks, chipper machines, etc. Class A noise is allowed at any time.

- Class B Noise is defined as noise created or generated within or adjacent to residential property which is normally associated with residential living. Class B noise includes lawn mowers, trimmers, home appliances, vehicle repairs, home construction projects, etc. Class B noise is not allowed between 9:00 p.m. and 7:00 a.m.

- Class C Noise is defined as noise made by motorized or mechanical equipment or devices used in sporting, recreational and hobby activities. Class C noise includes go-carts, mini-bikes, model planes and cars, etc. Class C noise is not allowed between 9:00 p.m. and 7:00 a.m. Class C noise must be made at such a distance away from a residential area so that residents will not be unreasonably disturbed by the noise of the equipment or devices.

- Class D Noise is defined as noise that is unnecessary, unnatural or unusual noises created by a human voice or animal outcry, or by any other means which is so annoying, or which is so harsh or prolonged, as to be injurious to the health, peace or comfort of any reasonable person residing in the area. Class D noise is not permitted at any time.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second.

Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Salinas does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.7-6 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.7-6: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		*Human Reaction*	*Effect on Buildings*
mm/sec.	*in./sec.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Plan Area is not located within two miles of a public or private airport or airstrip. Therefore, airplane and airport noise are not discussed further in this analysis.

Determination of a Significant Increase in Noise Levels

The noise standards applicable to the proposed project include the relevant portions of the City of Salinas General Plan, the City of Salinas Zoning Ordinance and Noise Ordinance described in the Regulatory Framework section above, and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the proposed project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible;
- A 5-dB change is clearly perceptible; and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.7-7 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.7-7: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, LDN	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.7-7 data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the Table 3.7-7 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: The proposed project has the potential to increase traffic noise levels at existing receptors (Significant and Unavoidable)

PROPOSED PROJECT ANALYSIS

Tables 3.7-8 through 3.7-11 show the predicted traffic noise level increases on the local roadway network for Existing No Project, Existing + Project, Existing + Project + West Area Specific Plan (WASP), Cumulative, Cumulative + Project, and Cumulative + Project + WASP conditions. The appendices provide the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.7-8: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

		Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
Roadway	*Segment*	*Existing*	*Existing + Project*	*Change*	*Criteria*[1]	*Significant?*
Constitution Blvd.	South of E. Boronda	61.3	63.4	2.1	+3 dB	No
Constitution Blvd.	North of Boronda	NA	67.3	NA	NA	No
E. Boronda Rd.	N. Main to San Juan Grade	65.7	66.1	0.4	+1.5 dB	No
E. Boronda Rd.	San Juan Grade to McKinnon	65.0	65.6	0.6	+1.5 dB	No
E. Boronda Rd.	McKinnon to El Dorado	63.9	65.0	1.1	+3 dB	No
E. Boronda Rd.	El Dorado to Natividad	63.4	65.0	1.4	+3 dB	No
E. Boronda Rd.	Natividad to Independence	66.2	67.4	1.2	+1.5 dB	No
E. Boronda Rd.	Independence to Hemmingway	64.7	66.6	1.9	+3 dB	No
E. Boronda Rd.	Hemmingway to Constitution	57.1	59.4	2.3	+5 dB or > 60 dB	No
E. Boronda Rd.	**Constitution to N. Sanborn**	**59.6**	**62.0**	**2.4**	**+3 dB or > 60 dB**	**Yes**
E. Boronda Rd.	N. Sanborn to Williams	57.9	60.0	2.1	+5 dB or > 60 dB	No
El Dorado Dr.	South of E. Boronda	53.2	54.6	1.4	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.1	55.1	1.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.0	62.0	2.0	+3 dB	No
McKinnon St.	South of E. Boronda	63.0	64.0	1.0	+3 dB	No
N. Main	North of E. Boronda	66.8	66.8	0	+1.5 dB	No
N. Main	South of E. Boronda	64.9	64.9	0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	55.6	57.8	2.2	+5 dB or > 60 dB	No
Natividad Rd.	South of E. Boronda	62.1	63.6	1.5	+3 dB	No
Natividad Rd.	E. Boronda to Future Russell Rd.	62.4	65.0	2.6	+3 dB	No
Natividad Rd.	Future Russell Rd. to Rogge	62.3	62.4	0.1	+3 dB	No
Natividad Rd.	North of Rogge	60.5	60.7	0.2	+3 dB	No
Old Stage Rd.	North of Future Constitution	57.8	60.0	2.2	+5 dB or > 60 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT?
Old Stage Rd.	Future Constitution to Williams	56.7	59.0	2.3	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	54.5	54.8	0.3	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.5	61.5	0	+3 dB	No
Russell Rd.	West of San Juan Grade	63.8	66.0	2.2	+3 dB	No
Russel Rd.	East of Natividad	NA	61.8	NA	NA	No
San Juan Grade Rd.	South of E. Boronda	64.8	65.3	0.5	+3 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	68.8	68.8	0	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	66.7	66.7	0	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	65.8	65.8	0	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	62.9	62.9	0	+3 dB	No
Van Buren Ave.	West of San Juan Grade	56.3	56.3	0	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	61.6	64.1	2.5	+3 dB	No
Williams Rd.	East of E. Boronda	46.5	48.4	1.9	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. ***BOLD*** *TEXT INDICATES UNACCEPTABLE NOISE INCREASE.*

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-9: EXISTING AND EXISTING PLUS PROJECT + WASP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT + WASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Constitution Blvd.	South of E. Boronda	61.3	64.2	0.9	+3 dB	No
Constitution Blvd.	North of Boronda	NA	68.2	NA	NA	No
E. Boronda Rd.	N. Main to San Juan Grade	65.7	67.1	1.4	+1.5 dB	No
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.0**	**66.9**	**1.9**	**+1.5 dB**	**Yes**
E. Boronda Rd.	McKinnon to El Dorado	63.9	66.3	2.4	+3 dB	No
E. Boronda Rd.	**El Dorado to Natividad**	**63.4**	**66.6**	**3.2**	**+3 dB**	**Yes**
E. Boronda Rd.	**Natividad to Independence**	**66.2**	**68.3**	**2.1**	**+1.5 dB**	**Yes**
E. Boronda Rd.	Independence to Hemmingway	64.7	67.3	2.6	+3 dB	No
E. Boronda Rd.	Hemmingway to Constitution	57.1	59.4	2.3	+5 dB or > 60 dB	No
E. Boronda Rd.	**Constitution to N. Sanborn**	**59.6**	**62.8**	**3.2**	**+5 dB or > 60 dB**	**Yes**
E. Boronda Rd.	**N. Sanborn to Williams**	**57.9**	**60.4**	**2.5**	**+5 dB or**	**Yes**

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT + WASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
					> 60 dB	
El Dorado Dr.	South of E. Boronda	53.2	56.0	2.8	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.1	55.1	1.0	+5 dB or > 60 dB	No
Independence Blvd.	**South of E. Boronda**	**60.0**	**63.0**	**3.0**	**+3 dB**	**Yes**
McKinnon St.	South of E. Boronda	63.0	65.1	2.1	+3 dB	No
N. Main	North of E. Boronda	66.8	67.1	0.3	+1.5 dB	No
N. Main	South of E. Boronda	64.9	64.9	0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	55.6	58.8	3.2	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	62.1	**65.7**	**3.6**	**+3 dB**	**Yes**
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**62.4**	**66.8**	**4.2**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	62.3	63.2	0.9	+3 dB	No
Natividad Rd.	North of Rogge	60.5	60.9	0.4	+3 dB	No
Old Stage Rd.	North of Future Constitution	57.8	60.0	2.3	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	56.7	59.0	2.3	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	54.5	55.2	0.7	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.5	62.0	0.5	+3 dB	No
Russell Rd.	**West of San Juan Grade**	**63.8**	**66.9**	**3.1**	**+3 dB**	**Yes**
Russel Rd.	East of Natividad	NA	61.8	NA	NA	No
San Juan Grade Rd.	South of E. Boronda	64.8	67.0	2.2	+3 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	68.8	70.0	1.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	66.7	67.5	0.8	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	65.8	66.1	0.3	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	62.9	63.4	0.5	+3 dB	No
Van Buren Ave.	West of San Juan Grade	56.3	57.1	0.8	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	61.6	64.4	2.8	+3 dB	No
Williams Rd.	East of E. Boronda	46.5	48.5	2.0	+5 dB or > 60 dB	No

NOTE: [1] EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-10: CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT ?
Constitution Blvd.	South of E. Boronda	61.9	63.6	1.7	+3 dB	No
Constitution Blvd.	North of Boronda	66.4	68.5	2.1	NA	No
E. Boronda Rd.	N. Main to San Juan Grade	66.0	66.5	0.5	+1.5 dB	No
E. Boronda Rd.	San Juan Grade to McKinnon	65.4	65.9	0.5	+1.5 dB	Yes
E. Boronda Rd.	McKinnon to El Dorado	64.5	65.5	1.0	+3 dB	No
E. Boronda Rd.	El Dorado to Natividad	64.1	65.5	1.4	+3 dB	No
E. Boronda Rd.	Natividad to Independence	66.8	67.9	1.1	+1.5 dB	No
E. Boronda Rd.	**Independence to Hemmingway**	**65.5**	**67.1**	**1.6**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Hemmingway to Constitution**	**57.8**	**60.7**	**2.9**	**+5 dB or > 60 dB**	**Yes**
E. Boronda Rd.	Constitution to N. Sanborn	60.6	62.5	1.9	+3 dB	No
E. Boronda Rd.	N. Sanborn to Williams	62.3	63.0	0.7	+3 dB	Yes
El Dorado Dr.	South of E. Boronda	54.6	55.6	1.0	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.5	55.5	1.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	62.0	1.5	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	64.4	0.8	+3 dB	No
N. Main	North of E. Boronda	69.0	69.0	0	+1.5 dB	No
N. Main	South of E. Boronda	66.5	66.5	0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	59.1	60.2	1.1	+5 dB or > 60 dB	No
Natividad Rd.	South of E. Boronda	63.5	64.5	1.0	+3 dB	Yes
Natividad Rd.	E. Boronda to Future Russell Rd.	64.4	65.7	1.3	+3 dB	Yes
Natividad Rd.	Future Russell Rd. to Rogge	63.9	63.9	0	+3 dB	No
Natividad Rd.	North of Rogge	62.4	62.4	0	+3 dB	No
Old Stage Rd.	**North of Future Constitution**	**59.9**	**61.2**	**1.3**	**+5 dB or > 60 dB**	**Yes**
Old Stage Rd.	Future Constitution to Williams	58.7	60.0	1.3	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	57.4	57.5	0.1	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	62.5	62.5	0	+3 dB	No
Russell Rd.	**West of San Juan Grade**	**65.5**	**67.1**	**1.6**	**+1.5 dB**	**Yes**
Russell Rd.	East of Natividad	58.4	63.4	10	NA	No
San Juan Grade Rd.	South of E. Boronda	66.7	67.0	0.3	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	70.0	70.0	0	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	68.4	68.4	0	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.8	66.8	0	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.8	63.8	0	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.3	0	+5 dB or > 60 dB	No

Roadway	Segment	Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
		Cumulative	Cumulative + Project	Change	Criteria[1]	Significant ?
Williams Rd.	West of E. Boronda	64.9	66.1	1.2	+3 dB	No
Williams Rd.	East of E. Boronda	48.7	49.8	1.1	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-11: CUMULATIVE AND CUMULATIVE PLUS PROJECT + WASP TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
		Cumulative	Cumulative + Project + WASP	Change	Criteria[1]	Significant?
Constitution Blvd.	South of E. Boronda	61.9	64.4	2.5	+3 dB	No
Constitution Blvd.	North of Boronda	61.9	69.1	7.2	NA	No
E. Boronda Rd.	N. Main to San Juan Grade	66.0	67.4	1.4	+1.5 dB	No
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.4**	**67.1**	**1.7**	**+1.5 dB**	**Yes**
E. Boronda Rd.	McKinnon to El Dorado	64.5	66.7	2.2	+3 dB	No
E. Boronda Rd.	El Dorado to Natividad	64.1	66.6	2.5	+3 dB	Yes
E. Boronda Rd.	**Natividad to Independence**	**66.8**	**68.8**	**2.0**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Independence to Hemmingway**	**65.5**	**67.6**	**2.1**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Hemmingway to Constitution**	**57.8**	**60.7**	**2.9**	**+5 dB or > 60 dB**	**Yes**
E. Boronda Rd.	Constitution to N. Sanborn	60.6	63.2	2.6	+3 dB	No
E. Boronda Rd.	N. Sanborn to Williams	62.3	63.3	1.0	+3 dB	Yes
El Dorado Dr.	South of E. Boronda	54.6	56.7	2.1	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.5	54.5	0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	62.8	2.3	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	65.4	1.8	+3 dB	No
N. Main	North of E. Boronda	69.0	69.1	0.1	+1.5 dB	No
N. Main	South of E. Boronda	66.5	66.5	0	+1.5 dB	No
N. Sanborn Rd.	**South of E. Boronda**	**59.1**	**60.7**	**1.6**	**+5 dB or > 60 dB**	**Yes**
Natividad Rd.	South of E. Boronda	63.5	66.2	2.7	+3 dB	No
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**64.4**	**67.8**	**3.4**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	63.9	64.5	0.6	+3 dB	No
Natividad Rd.	North of Rogge	62.4	62.6	0.2	+3 dB	No
Old Stage Rd.	**North of Future Constitution**	**59.9**	**61.4**	**1.5**	**+5 dB or**	**Yes**

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT + WASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
					> 60 dB	
Old Stage Rd.	**Future Constitution to Williams**	**58.7**	**60.2**	**1.5**	**+5 dB or > 60 dB**	**Yes**
Old Stage Rd.	South of Williams	57.4	57.8	0.4	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	62.5	62.9	0.4	+3 dB	No
Russell Rd.	**West of San Juan Grade**	**65.5**	**67.8**	**2.3**	**+1.5 dB**	**Yes**
Russell Rd.	East of Natividad	58.4	63.4	10	NA	No
San Juan Grade Rd.	South of E. Boronda	66.7	68.1	0.4	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	70.0	71.0	1.0	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	68.4	68.9	0.5	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.8	67.0	0.2	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.8	64.2	0.4	+1.5 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.9	0.6	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	64.9	66.3	1.4	+3 dB	No
Williams Rd.	East of E. Boronda	48.7	49.8	1.1	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

As shown in Tables 3.7-8 through 3.7-11, some noise-sensitive receptors located along the Plan Area roadways are currently exposed to exterior traffic noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project. For example, under Existing conditions, existing sensitive receptors located adjacent to E. Boronda Road, Constitution Boulevard, Natividad Road, and San Juan Grade Road currently experience an exterior noise levels between 61 dB and 69 dB L_{dn}. This exceeds the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Under Existing Plus Project conditions, exterior traffic noise levels are predicted to be approximately 68.0 dB L_{dn}. This would still exceed the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. The proposed project's contribution ranges between 0.4 dB and 2.5 dB and in some cases would not exceed the FICON criteria (Table 3.7-7). Table 3.7-8 indicates where a significant increase in traffic levels occur, or a result of an exceedance of the City's criterion of 60 dB L_{dn}.

As shown in Table 3.7-8, the segment of Natividad Road south of E. Boronda Road would experience unacceptable noise levels under Existing Plus Project conditions. The project would cause noise levels along this segment to increase by 1.6 dB.

*****It should be noted that Russell Road, east of Natividad and Constitution Boulevard, north of Boronda Road are not currently constructed and borders the north and east portions of the project site. There are no residential uses on the north side of the new Russell Road and the east side of Constitution Bouldevard. Therefore, this analysis does not consider this to be a significant increase in noise levels. There is an analysis later in this report which evaluates the traffic noise on the new Russell Road and Constitution Boulevard, as they may affect the project site.

The following indicates where the project results in a significant traffic noise impact.

As shown in Table 3.7-8, the following roadway segments would experience unacceptable noise levels under the Existing Plus Project conditions:

- E. Boronda Road from Constitution to N. Sanborn (results in an exceedance of 60 dB L_{dn}).

As shown in Table 3.7-9, the following roadway segments would experience unacceptable noise levels under the Existing Plus Project Plus WASP conditions:

- E. Boronda Road from San Juan Grade to McKinnon (results in a 1.9 dB increase);
- E. Boronda Road from El Dorado to Natividad (results in a 3.2 dB increase);
- E. Boronda Road from Natividad to Independence (results in a 2.1 dB increase);
- E. Boronda Road from Constitution to N. Sanborn (results in an exceedance of 60 dB L_{dn});
- E. Boronda Road from N. Sanborn to Williams (results in an exceedance of 60 dB L_{dn});
- Independence Blvd, south of Boronda (results in a 3 dB increase);
- Natividad Road, south of Boronda (results in a 3.6 dB increase);
- Natividad Road from E. Boronda to Future Russell Rd (results in a 4.2 dB increase);
- Russell Road, west of San Juan Grade (results in a 3.1 dB increase).

As shown in Table 3.7-10, the following roadway segments would experience unacceptable noise levels under Cumulative Plus Project conditions:

- E. Boronda Road from Independence to Hemmingway (results in a 1.6 dB increase);
- E. Boronda Road from Hemmingway to Constitution (results in a 2.9 dB increase);
- Old Stage Road north of future Constitution (results in an exceedance of 60 dB L_{dn});
- Russell Road, west of San Juan Grade (results in a 1.6 dB increase).

As shown in Table 3.7-11, significant traffic noise increases under the Cumulative Plus Project Plus WASP traffic condition include the following:

- E. Boronda Road San Juan Grade to McKinnon – noise levels are predicted to increase by 1.7 dB from 65.4 dB to 67.1 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

- E. Boronda Road, Natividad to Independence – noise levels are predicted to increase by 2.0 dB from 66.8 dB to 68.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Independence to Hemmingway – noise levels are predicted to increase by 2.1 dB from 65.5 dB to 67.6 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Hemmingway to Constitution – noise levels are predicted to increase from 57.8 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- N. Sanborn Road, south of E. Boronda – noise levels are predicted to increase from 59.1 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Natividad Road, E. Boronda to Future Russell Road – noise levels are predicted to increase by 3.4 dB from 64.4 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- Old Stage Road, north of Future Constitution Road – noise levels are predicted to increase from 59.1 dB to 61.4 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}. This is part of the WASP area where future noise-sensitive uses would be located.
- Old Stage Road, Future Constitution Road to Williams – noise levels are predicted to increase from 58.7 dB to 60.2 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Russell Road, West of San Juan Grade – noise levels are predicted to increase by 2.3 dB from 65.5 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

CONCLUSION

The proposed project would cause increased noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard at existing residential receptors. Therefore, this would be a **potentially significant** impact. Additionally, traffic noise level increases would exceed the FICON CEQA substantial increase criteria of 1.5 to 5 dB, as outlined in Table 3.7-7. Therefore, this would be a **potentially significant** impact.

The Specific Plan Area was assumed for urban development as part of the City's General Plan and General Plan EIR. As such development of Specific Plan Area for urban uses was analyzed in the City's General Plan EIR. Build-out of the City's General Plan land use map, including the Specific Plan Area, will inherently result in an increase in traffic-related noise levels. The City of Salinas certified the Final Environmental Impact Report, Salinas General Plan (Cotton Bridges Associates 2002), adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the Salinas General Plan.

Increasing the height of existing sound walls could be a potential mitigation measure in some locations; however, in some locations it may prove to not be practical or feasible for a variety of reasons. The footings for the walls would need to be reengineered and resized, which may result in encroachment into private property. Such encroachment would require private property owners to allow permission to enter their property. There is a possibility that private property owners have pools or other structures proximate to the existing walls that could inhibit the reconstruction of the sound wall. Also, the height of a sounds wall could result in aesthetic impacts that are unwanted in the community.

The use of quieter pavement technologies could be a potential mitigation measure. Research shows that a minimum of 3 dBA can be achieved by using alternative pavements, such as rubberized asphalt or open gap materials. Costs for these pavement technologies vary, but they have been proven to be comparable to traditional pavements. The alternative pavement would wear down as trucks and automobiles travel over these roadway segments, decreasing its noise reduction effectiveness and increasing its replacement cost. As such, rubberized asphalt is not highly desirable in most communities in California and may prove to be infeasible and not practicable in the long term. Therefore, even with implementation of the following mitigation, this would be a ***significant and unavoidable*** impact.

MITIGATION MEASURES

Mitigation Measure 3.7-1: *The project applicant shall utilize alternative pavements with noise reducing properties to repave roadway segments which result in significant increases in traffic noise. These repaving projects shall only occur where existing residential uses are adjacent to the roadways, when they are located inside of the 60 dB L_{dn} contours shown in Tables 3.7-8 through 3.7-11, or when they exceed the FICON criteria. Sixty dB L_{dn} is considered an acceptable exterior noise level standard. The use of alternative pavements is subject to the design and construction approval by the City of Salinas.*

> *<u>Under the Existing and Existing Plus Project</u> scenario (Table 3.7-8), the following roadway segment would experience a significant increase in traffic noise levels:*
>
> - *E. Boronda Road from Constitution to North of Sanborn.*
>
> *The project applicant would be required to fund the entire share of this improvement, unless the improvements are already or will already be covered by a larger and/or citywide funding program.)*
>
> *<u>Under the Existing and Existing Plus Project Plus WASP</u> scenario (Table 3.7-9), the following roadway segments would experience a significant increase in traffic noise levels or would result in an exceedance of the 60 dB L_{dn} standard:*
>
> - E. Boronda Road from San Juan Grade to McKinnon (results in a 1.9 dB increase);
> - E. Boronda Road from El Dorado to Natividad (results in a 3.2 dB increase);
> - E. Boronda Road from Natividad to Independence (results in a 2.1 dB increase);
> - E. Boronda Road from Constitution to N. Sanborn (results in an exceedance of 60 dB L_{dn});

- E. Boronda Road from N. Sanborn to Williams (results in an exceedance of 60 dB L_{dn});
- Independence Blvd, south of Boronda (results in a 3 dB increase);
- Natividad Road, south of Boronda (results in a 3.6 dB increase);
- Natividad Road from E. Boronda to Future Russell Rd (results in a 4.2 dB increase);
- Russell Road, west of San Juan Grade (results in a 3.1 dB increase).

The project applicant would be required to fund the project's proportionate fair share of this improvement.)

<u>Under the Cumulative and Cumulative Plus Project</u> scenario (Table 3.7-10), the following roadway segments would experience a significant increase in traffic noise levels or result in an exceedance of the 60 dB L_{dn} standard:

- E. Boronda Road from Independence to Hemmingway (results in a 1.6 dB increase);
- E. Boronda Road from Hemmingway to Constitution (results in a 2.9 dB increase);
- Old Stage Road north of future Constitution (results in an exceedance of 60 dB L_{dn});
- Russell Road, west of San Juan Grade (results in a 1.6 dB increase).

The project applicant would be required to fund the project's proportionate fair share of these improvements.

<u>Under the Cumulative and Cumulative Plus Project Plus WASP</u> scenario (Table 3.7-11), the following roadways experience a significant increase in traffic noise levels or result in an exceedance of the 60 dB L_{dn} standard:

- E. Boronda Road San Juan Grade to McKinnon – noise levels are predicted to increase by 1.7 dB from 65.4 dB to 67.1 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Natividad to Independence – noise levels are predicted to increase by 2.0 dB from 66.8 dB to 68.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Independence to Hemmingway – noise levels are predicted to increase by 2.1 dB from 65.5 dB to 67.6 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Hemmingway to Constitution – noise levels are predicted to increase from 57.8 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.

- N. Sanborn Road, south of E. Boronda – noise levels are predicted to increase from 59.1 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Natividad Road, E. Boronda to Future Russell Road – noise levels are predicted to increase by 3.4 dB from 64.4 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- Old Stage Road, north of Future Constitution Road – noise levels are predicted to increase from 59.1 dB to 61.4 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}. This is part of the WASP area where future noise-sensitive uses would be located.
- Old Stage Road, Future Constitution Road to Williams – noise levels are predicted to increase from 58.7 dB to 60.2 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Russell Road, West of San Juan Grade – noise levels are predicted to increase by 2.3 dB from 65.5 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

The project applicant would be required to fund the project's proportionate fair share of these improvements.

Impact 3.7-2: The proposed project has the potential to increase noise levels associated with construction activities (Less than Significant with Mitigation)

During the construction of the project, including roads, water, and sewer lines, and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Existing sensitive receptors are located in the nearby residences, some of which are as close as 50 feet from the proposed construction activities. As indicated in Table 3.7-12, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours which are the least sensitive hours. Additionally, the majority of construction activities would occur at distances of 300 to 500 feet from the nearest residences. At these further distances, the maximum noise levels due to construction at the interior of the site would range from 60 to 70 dBA.

TABLE 3.7-12: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB AT 50 FEET*
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90

Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 a.m. to 9:00 p.m., as outlined in the City's Municipal Code for Type B noise. Additionally, the project site was assumed for urban development as part of the City's General Plan and General Plan EIR. Build-out of the City's General Plan land use map, including the proposed project site, will inherently result in construction and construction-related noise levels. Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a ***less than significant*** level.

MITIGATION MEASURES

Mitigation Measure 3.7-2: *Construction activities shall adhere to the requirements of the City of Salinas Municipal Code with respect to hours of operation. This requirement shall be noted in the improvement plans prior to approval by the City's Building Department.*

Mitigation Measure 3.7-3: *All equipment shall be fitted with factory equipped mufflers and in good working order. This requirement shall be noted in the improvement plans prior to approval by the City's Building Department. All stationary noise generating equipment (i.e. generators) shall be located at least 300 feet from a sensitive receptor. All construction staging areas shall be located at least 300 feet from a sensitive receptor.*

Impact 3.7-3: The proposed project has the potential to increase noise vibration association with construction activities (Less than Significant)

The primary vibration-generating activities associated with the proposed project would happen during construction when activities such as grading, utilities placement, and road construction occur. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 100 feet or further from the Plan Area. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.7-13 shows the typical vibration levels produced by construction equipment.

TABLE 3.7-13: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

Table 3.7-13 data indicate that construction vibration levels anticipated for the proposed project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a ***less than significant*** impact relative to this environmental topic.

Impact 3.7-4: The proposed project has the potential to expose new sensitive receptors to excessive transportation noise (Less than Significant with Mitigation)

EXTERIOR NOISE IMPACTS

The FHWA traffic noise prediction model was used to predict Cumulative + Project + WASP traffic noise levels at the proposed residential land uses associated with the proposed project. Table 3.7-14 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Plan Area arterial roadways. Table 3.7-14 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

The complete inputs and results to the FHWA traffic noise prediction model and barrier calculations are contained in Appendix C of the Noise Study. The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

To describe future noise levels due to traffic, FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

TABLE 3.7-14: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]					
			NO WALL	6' WALL	7' WALL	8' WALL	9' WALL	10' WALL
Russell Road W. of Old Stage Road	75-feet	7,640	64	57	56	55	54	53
Natividad Road N. of Boronda	75-feet	29,750	68	62	61	60	59	59
Boronda - Natividad to Hemmingway	75-feet	41,660	69	65	64	63	62	61
Boronda - Natividad to Constitution	75-feet	11,980	61	59	58	57	56	55
Constitution - Boronda to Old Stage	75-feet	28,240	69	63	62	60	59	59

NOTES: ADT = AVERAGE DAILY TRIPS

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND WALL HEIGHT MAY BE ACHIEVE D THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E. 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT TALL WALL).

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

Table 3.7-14 data indicate that noise barriers 6- to 8-feet in height would generally be sufficient to achieve compliance with the City of Salinas 60 dB L_{dn} exterior noise level standard for the proposed residential uses. However, for the residential uses located along E. Boronda Road, sound walls of 6- to 8-feet in height would only reduce exterior noise levels to 63 dB L_{dn}. While these noise level do not meet the City's preferred 60 dB L_{dn} noise standards, they would comply with the City's conditionally acceptable standard of 60 to 70 dB L_{dn}. Final wall heights should be determined at the discretion of the City. With implementation of the following exterior noise mitigation measures, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-4: *Six- to eight-foot tall sound walls and/or landscaped berm combinations shall be constructed along the primary Plan Area roadways, adjacent to proposed residential uses, in order to achieve the City's exterior noise standards. At the City's discretion, wall heights which achieve the City's conditionally acceptable 60-70 dB L_{dn} noise standard may be allowed. See the Draft EIR Table 3.7-14 for specific noise barrier heights along each roadway. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, stucco or manufactured materials (with a density of four pounds per square foot or greater), earthen landscaped berms, or any combination of these materials as determined appropriate by the City of*

Salinas. The design/appearance of the wall is subject to the design approval by the City of Salinas to ensure that it is visually pleasing. Wood is not recommended due to eventual warping and degradation of acoustical performance. The walls shall not have gaps or penetrations which allow sound to flank through or around the walls. Small gaps which may occur using materials such as "keystone" blocks shall be avoided. Additionally, in accordance with Section 5-03.19 of the City's Municipal Code, best management practices shall be incorporated into the sound wall design in order to control graffiti and/or mitigate the potential impacts of graffiti. These graffiti prevention best management practices may include, without limitation:

(1) The use or the installation and maintenance of ant-graffiti materials approved by the city on likely graffiti-attracting surfaces.

(2) Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.

(3) Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.

(4) Immediate removal of graffiti by appropriate means within seventy-two hours.

(5) Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED).

(6) Authorizing right of access by city employees or contract agents to remove graffiti if not removed within specified time periods.

(7) Supplying the city at its request with paint (of the appropriate color and type), cleaning agents, and/or other materials acceptable to the city to abate or to deter graffiti.

(8) Other requirements, as deemed reasonably feasible by the city planner, to deter, to protect or to reduce the potential for graffiti defacement.

These requirements shall be included in the improvement plans prior to their approval by the City's Building Department.

INTERIOR NOISE IMPACTS

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Salinas 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels ranging between 63 to 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 65 to 73 dB L_{dn}.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to range between 38 dB to 46 dB L_{dn} at first floor residences, and between 40 dB and 48 dB L_{dn}, at second floor residences. Predicted interior noise levels could exceed the City's 45 dB L_{dn} interior noise level standard at the first row of residential uses located closest to Boronda Road and Constitution Boulevad. Therefore, additional interior noise control measures would be required for these residential uses. To reduce interior noise levels to 45 dB L_{dn}, or less, it is likely that second floor facades would require windows having a Sound Transmission Class (STC) 35 rating, or higher. Exterior walls would also likely require 3-coat stucco and RC-channels. This would specifically apply to the first row of homes along E. Boronda Road and Natividad Road and would not apply to facades facing away from the roadway.

This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation. With implementation of the following interior noise mitigation measures, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-5: *The first row of residential uses located along E. Boronda Road and Constitution Boulevard shall include windows having a Sound Transmission Class (STC) 35, or higher, rating installed in second floor facades. Exterior walls shall also require 3-coat stucco and RC-channels. The exterior wall specifications would specifically apply to the first row of homes and does not apply to facades facing away from the roadway. A detailed analysis of any additional interior mitigation measures shall be conducted when building plans are available to verify these requirements. These requirements shall be included in the improvement plans prior to approval by the City's Building Department.*

Mitigation Measure 3.7-6: *Mechanical ventilation shall be installed in all residential uses sufficient to allow residents, as desired for acoustical isolation, to keep their doors and windows closed and still maintain acceptable interior temperature and noise levels. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.*

Impact 3.7-5: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed park and school uses (Less than Significant with Mitigation)

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Salinas exterior noise level standards of 60 dB L_{eq} and 70 dB L_{max} at the nearest residential uses.

Based upon the reference noise level data discussed above, the 60 dB L_{eq} noise contour would be located approximately 50 feet from the center of playgrounds or recreational fields. The 70 dB L_{max} noise contour would extend approximately 90 feet from the center of playground or recreational fields. For residential backyards located less than 90 feet from the center of a playground or recreational field, noise levels may exceed the City of Salinas 70 dB L_{max} exterior noise level standard. In this case, construction of a 6-foot tall masonry sound wall would provide an approximate noise level reduction of 5 dB and would typically reduce noise levels to 60 dB L_{eq} and 70 dB L_{max}, or less.

With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-7: *When parks or play areas are located near residential uses, the center of active play areas, such as football fields, soccer fields or other athletic fields, shall be located at a minimum distance of 90-feet from the nearest residential property lines. Large active play areas shall comply with the 60 dB L_{eq} and 70 dB L_{max} standards, and shall include these further noise level evaluations during the design phases of future park areas.*

Parks shall be designed such that residences front to the park. Minimum 6-foot tall sound walls and/or landscaped berms shall be constructed where school site abuts a residential property line in instances where site design (i.e., minimum distances, siting of activity areas, etc.) cannot achieve the 60 dB L_{eq} and 70 dB L_{max} noise standards. No wall shall be required where residential uses are fronted towards a park or school site and separated by a roadway or a walkway.

Noise barrier walls shall be constructed of concrete panels, concrete masonry units, stucco or manufactured materials (with a density of four pounds per square foot or greater), earthen landscaped berms, or any combination of these materials as determined appropriate by the City of Salinas. The design/appearance of the wall is subject to the design approval by the City of Salinas to ensure that it is visually pleasing. Wood is not recommended due to eventual warping and degradation of acoustical performance. The walls shall not have gaps or penetrations which allow sound to flank through or around the walls. Small gaps which may occur using materials such as "keystone" blocks shall be avoided. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.

Impact 3.7-6: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed commercial mixed-uses (Less than Significant with Mitigation)

COMMERCIAL AND OFFICE LAND USES

Commercial and office land use activities can produce noise levels which affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day, and existing ambient noise levels. The primary noise sources generally include truck deliveries, trash pickup, parking lot use, and heating, ventilation, and air conditioning (HVAC) equipment operation. These sources may result in noise levels more than the City's standards at nearby receptors.

MECHANICAL EQUIPMENT

HVAC equipment can be a primary noise source associated with commercial mixed uses. These types of equipment are often mounted on roof tops, located on the ground, or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at 50 feet and could exceed City standards at nearby receptors.

MEASURES TO REDUCE NOISE EXPOSURE FROM COMMERCIAL MIXED USES

Use of Setbacks: Noise exposure may be reduced by increasing the distance between the noise source and the noise-receiving use. Setbacks can take the form of open space, frontage roads, recreational areas, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally 3 to 6 dB per doubling of distance from the source. The rule-of-thumb is that most traffic and railroad noise levels will decrease or increase by approximately 4.5 dB per doubling, or halving of distance, respectively. Noise from point sources, such as HVAC equipment, will generally attenuate at 6 dB per doubling of distance.

Use of Barriers: Noise reduction can be accomplished by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. In addition, intervening topography can be an effective barrier for noise control. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increases in distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference," and is the basis for calculating barrier noise reduction.

In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path length difference for a given increase in barrier height than does a location closer to either source or receiver.

Site Design, Building Locations, and Building Orientations: Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise levels caused by reflections. As an example, carports or garages can be used to form or complement a barrier, or shield an outdoor activity area. Placement of outdoor activity areas on the opposite side of the building facades from the noise source, or within the shielded portion of a building complex, such as a central courtyard, can also be an effective method of providing a quiet retreat in an otherwise noisy environment.

CONCLUSION

With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-8: *Where commercial, business professional, office, or similar uses abut residential uses or where loading docks or truck circulation routes face residential areas, the following measures shall be included in the project design:*

- *All HVAC equipment shall be located within mechanical rooms where possible or shielded from view with solid or grated barriers;*
- *Emergency generators shall comply with the City's noise criteria at the nearest noise-sensitive receivers;*
- *Delivery/loading activities shall comply with the City of Salinas Zoning Ordinance standards; and*
- *The applicant shall submit a noise study to verify that the appropriate noise control measures have been incorporated into the project design and will achieve compliance with the City's noise level standards.*

These requirements shall be included in the improvement plans prior to their approval by the City's Building Department.

Impact 3.7-7: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed well sites (Less than Significant with Mitigation)

Typical noise levels for well sites at 50 feet are expected to be 60 dB L_{eq}. If a backup generator is present and running, a noise level of 70 dB L_{eq} at 50 feet would be expected. It is expected that wells could operate during daytime or nighttime hours. Long-term operation of the backup generator would only occur under emergency conditions and would therefore not be subject to the City of Salinas exterior noise level standards for Class A noise. However, weekly exercising of the generator may be subject to the City's 60 dB L_{eq} daytime exterior noise level standard at the nearest noise-sensitive residential receptors.

The specific design features of the well sites are not currently known and the associated noise levels cannot be precisely determined at the nearest proposed residential units. Therefore, the well sites should be limited to generating a noise level not exceeding the City's nighttime noise standard of 55 dB L_{eq} at the nearest on-site residential property lines under normal operations. Generators should not exceed the City's daytime noise standard of 60 dB L_{eq}. This will ensure compliance with the City's noise ordinance standards at both on-site and off-site receptors. With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-9: *The well sites shall be designed and built to not exceed a noise level of 55 dB L_{eq} at the nearest residential property line during normal operation of the stations. Generators shall not exceed the City's daytime noise standard of 60 dB L_{eq}. Generators shall be tested only during daytime hours. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.*

Impact 3.7-8: Cumulative exposure of existing and future noise-sensitive land uses to increased noise resulting from cumulative development (Cumulatively Considerable and Significant and Unavoidable)

The cumulative context for a cumulative analysis can be defined by region, by political subdivision or by the geography. The cumulative setting for noise includes the study roadway segments as identified in the traffic analysis in this EIR. This area was chosen because it represents the area that is reasonably expected to be affected by changes to the ambient noise levels as the project buildouts out. Tables 3.7-10 and 3.7-11 previously shown above provide the predicted traffic noise level increases on the local roadway network for Cumulative, Cumulative + Project, and Cumulative + Project + WASP conditions. The appendices to this report provide the complete inputs and results of the FHWA traffic noise modeling.

As shown in Tables 3.7-10 and 3.7-11, some noise-sensitive receptors located along the Plan Area roadways are currently exposed to exterior traffic noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project.

In some locations, the proposed project is predicted to cause increases in traffic noise levels which would trigger a new exceedance of the City of Salinas' 60 dB L_{dn} exterior noise level standard at sensitive receptor locations, or exceed the FICON allowable increase criteria outlined in Table 3.7-7. The greatest number of significant traffic noise increases would occur under the Cumulative Plus Project Plus WASP traffic condition.

Significant traffic noise increases under the Cumulative Plus Project Plus WASP traffic condition include the following:

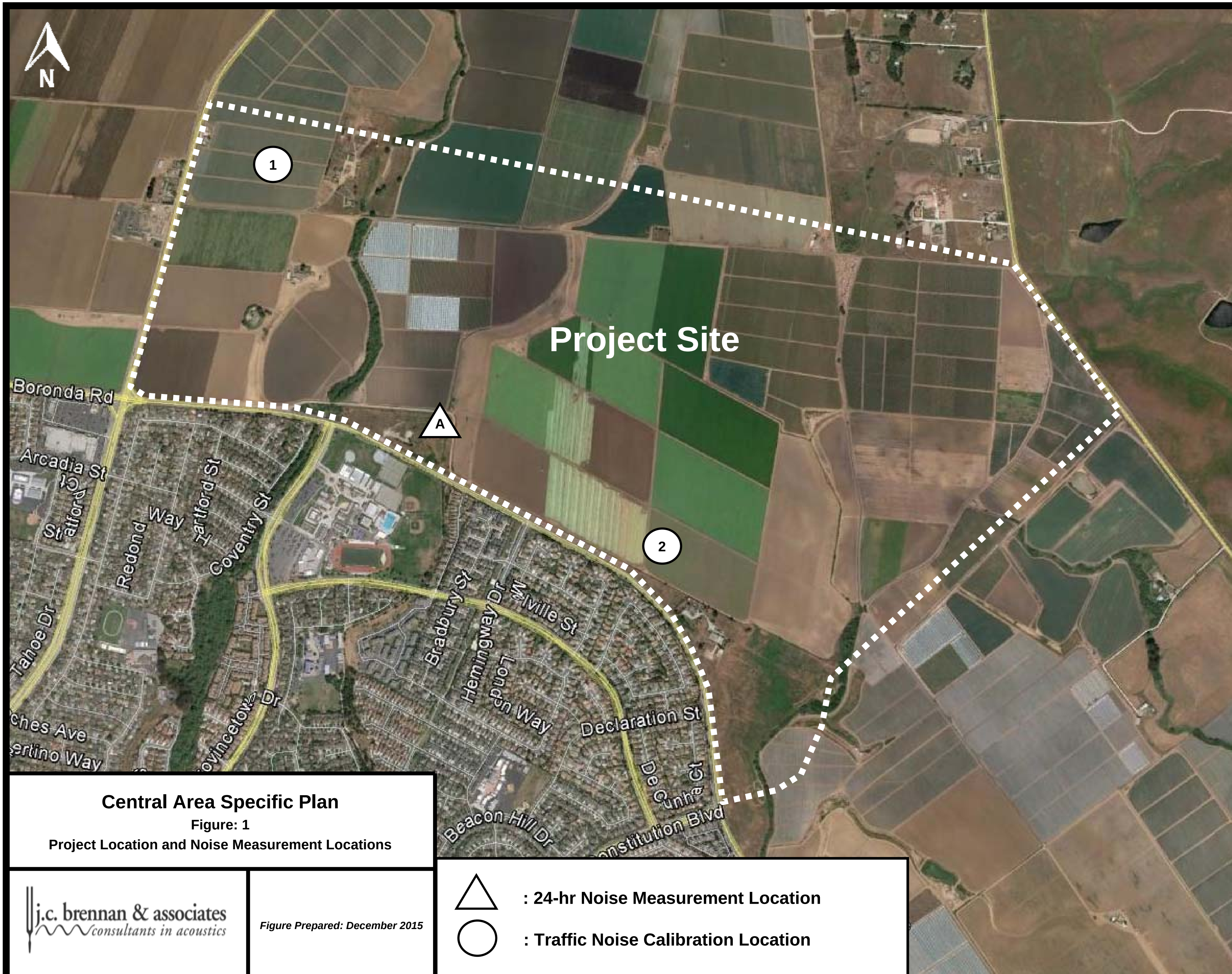
- E. Boronda Road San Juan Grade to McKinnon – noise levels are predicted to increase by 1.7 dB from 65.4 dB to 67.1 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Natividad to Independence – noise levels are predicted to increase by 2.0 dB from 66.8 dB to 68.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Independence to Hemmingway – noise levels are predicted to increase by 2.1 dB from 65.5 dB to 67.6 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Hemmingway to Constitution – noise levels are predicted to increase from 57.8 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- N. Sanborn Road, south of E. Boronda – noise levels are predicted to increase from 59.1 dB to 60.7 dB L_{dn}. This would result in an exceedance of the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Natividad Road, E. Boronda to Future Russell Road – noise levels are predicted to increase by 3.4 dB from 64.4 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- Old Stage Road, north of Future Constitution Road – noise levels are predicted to increase from 59.1 dB to 61.4 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}. This is part of the WASP area where future noise-sensitive uses would be located.
- Old Stage Road, Future Constitution Road to Williams – noise levels are predicted to increase from 58.7 dB to 60.2 dB L_{dn}. This would exceed the City of Salinas exterior noise level standard of 60 dB L_{dn}.
- Russell Road, West of San Juan Grade – noise levels are predicted to increase by 2.3 dB from 65.5 dB to 67.8 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

The proposed project would cause increased noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard at existing residential receptors. Therefore, there would be a cumulative exposure of existing and future noise-sensitive land uses to increased noise resulting from cumulative development.

The proposed project, when considered alongside all past, present, and probable future projects (inclusive of buildout of the General Plan), would result in a significant cumulative impact related to traffic noise. The proposed project's incremental contribution toward this significant cumulative impact would be cumulatively considerable due to the large amount of vehicle trips that would be generated at buildout of the Plan Area.

It is noted that the City's General Plan and General Plan EIR assumes development of the Plan Area for urban uses as part of the FGA buildout. As buildout occurs it will inherently result in an increase in traffic-related noise levels. The City of Salinas certified the Final Environmental Impact Report, Salinas General Plan (Cotton Bridges Associates 2002), adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the Salinas General Plan.

Implementation of the Central Area Specific Plan would have a ***significant cumulative impact*** and a ***cumulatively considerable contribution*** to noise.



Central Area Specific Plan

Figure: 1

Project Location and Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared: December 2015

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Appendix A
Central Area Specific Plan
24hr Continuous Noise Monitoring - Site B
Wednesday January 20th - Thursday January 21st, 2016

Hour	Leq	Lmax	L50	L90
10:00:00	64.4	75.7	62.9	52.3
11:00:00	65.0	76.3	64.1	54.1
12:00:00	65.6	75.8	64.9	55.4
13:00:00	68.1	95.6	65.2	54.8
14:00:00	65.9	74.8	65.1	54.4
15:00:00	66.2	76.8	65.5	57.3
16:00:00	69.6	95.7	66.4	56.8
17:00:00	67.0	78.8	66.8	58.4
18:00:00	66.4	76.4	66.1	57.7
19:00:00	65.8	76.6	64.9	54.0
20:00:00	65.2	78.8	64.2	53.3
21:00:00	63.7	75.9	61.7	48.8
22:00:00	62.5	79.5	58.1	45.1
23:00:00	60.6	78.0	52.6	39.6
0:00:00	58.7	79.4	45.5	36.0
1:00:00	56.2	70.8	41.7	35.4
2:00:00	57.9	78.1	43.2	36.8
3:00:00	58.0	74.4	43.0	36.3
4:00:00	61.3	76.2	52.7	40.9
5:00:00	64.0	77.6	59.8	47.4
6:00:00	65.4	78.3	63.7	53.0
7:00:00	66.4	76.3	65.6	57.0
8:00:00	65.2	80.1	64.1	55.7
9:00:00	65.4	84.8	63.5	52.1

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	70	64	66	65	56	61
Lmax (Maximum)	96	75	80	80	71	77
L50 (Median)	67	62	65	64	42	51
L90 (Background)	58	49	55	53	35	41

Computed Ldn, dB	69
% Daytime Energy	83%
% Nighttime Energy	17%

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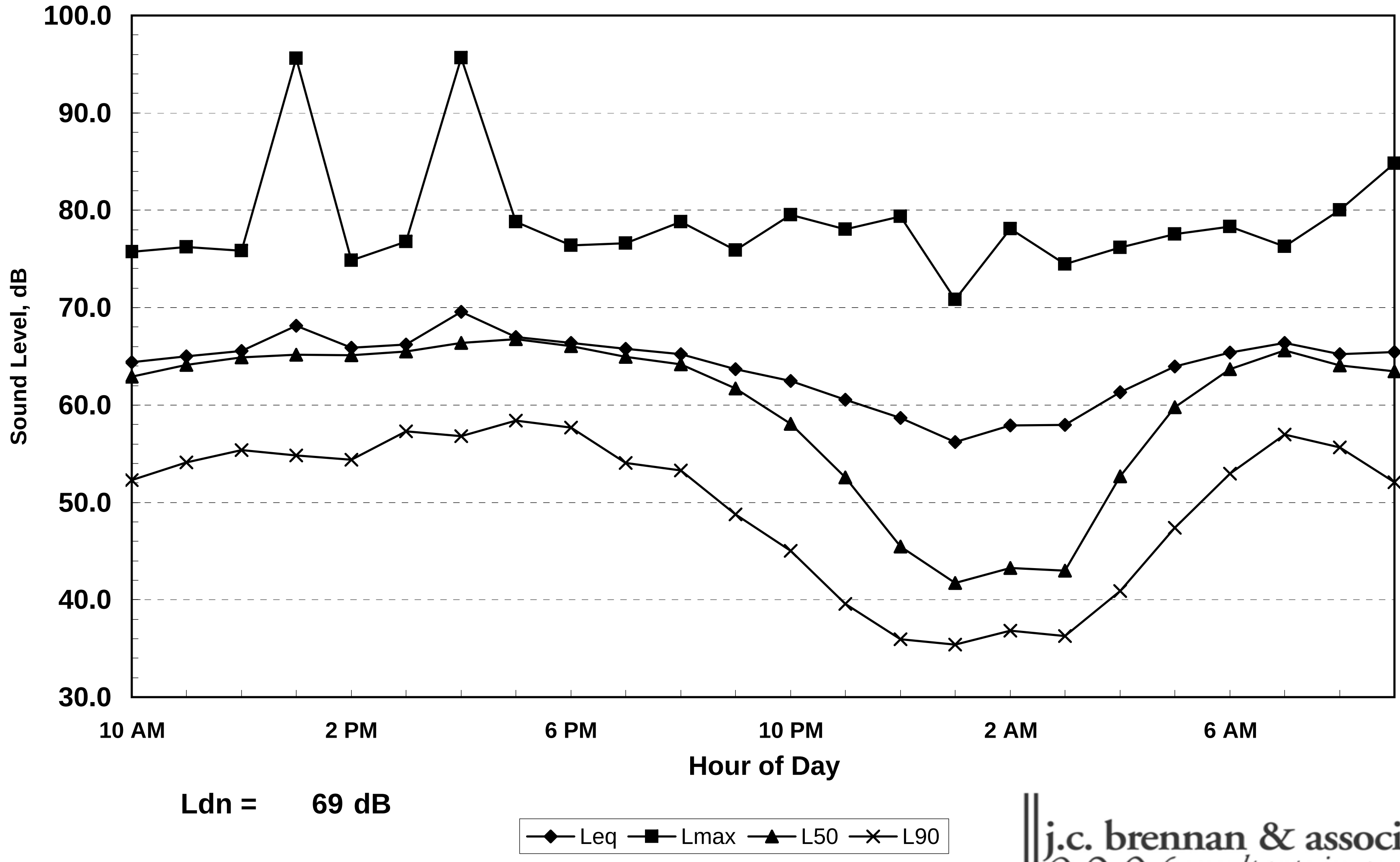
Appendix A

Central Area Specific Plan

24hr Continuous Noise Monitoring - Site B

Wednesday January 20th - Thursday January 21st, 2016



Ldn = 69 dB

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 Central Area Specific Plan
Description: Base Year Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	11,980	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	20,440	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	22,840	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	17,910	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	15,940	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	23,350	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	16,390	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	5,170	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	9,240	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	6,300	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	4,870	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	2,870	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	7,910	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	7,150	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	18,830	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	18,290	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	4,830	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	11,930	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	8,540	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	8,490	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	6,390	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	3,430	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	3,430	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,050	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	4,980	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	8,470	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	9,800	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	13,360	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	10,890	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	8,850	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,270	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,080	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	7,560	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	4,120	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 Central Area Specific Plan

Description: Base Year Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	60.4	51.8	50.3	61.3
2	E. Boronda Rd.	N. Main to San Juan Grade	64.4	55.8	57.3	65.7
3	E. Boronda Rd.	San Juan Grade to McKinnon	63.7	55.1	56.6	65.0
4	E. Boronda Rd.	McKinnon to El Dorado	62.7	54.1	55.5	63.9
5	E. Boronda Rd.	El Dorado to Natividad	62.2	53.5	55.0	63.4
6	E. Boronda Rd.	Natividad to Independence	65.0	56.4	57.9	66.2
7	E. Boronda Rd.	Independence to Hemmingway	63.5	54.9	56.3	64.7
8	E. Boronda Rd.	Hemmingway to Constitution	55.8	47.2	48.7	57.1
9	E. Boronda Rd.	Constitution to N. Sanborn	58.3	49.7	51.2	59.6
10	E. Boronda Rd.	N. Sanborn to Williams	56.7	48.1	49.5	57.9
11	El Dorado Dr.	South of E. Boronda	50.9	45.6	47.2	53.2
12	Hemmingway Dr.	South of E. Boronda	52.8	45.6	44.8	54.1
13	Independence Blvd.	South of E. Boronda	59.1	50.5	49.0	60.0
14	McKinnon St.	South of E. Boronda	61.7	54.5	53.7	63.0
15	N. Main	North of E. Boronda	64.2	57.0	62.2	66.8
16	N. Main	South of E. Boronda	62.3	55.2	60.4	64.9
17	N. Sanborn Rd.	South of E. Boronda	54.7	46.1	44.6	55.6
18	Natividad Rd.	South of E. Boronda	60.9	52.3	53.8	62.1
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	61.1	52.5	54.0	62.4
20	Natividad Rd.	Future Russell Rd. to Rogge	61.1	52.5	54.0	62.3
21	Natividad Rd.	North of Rogge	59.5	50.3	51.4	60.5
22	Old Stage Rd.	North of Future Constitution	56.8	47.6	48.7	57.8
23	Old Stage Rd.	Future Constitution to Williams	55.4	46.8	48.3	56.7
24	Old Stage Rd.	South of Williams	53.2	44.6	46.1	54.5
25	Rogge Rd.	San Juan Grade to Natividad	60.2	53.0	52.2	61.5
26	Russell Rd.	West of San Juan Grade	62.5	55.3	54.5	63.8
27	San Juan Grade Rd.	South of E. Boronda	63.6	55.0	56.5	64.8
28	San Juan Grade Rd.	E. Boronda to Van Buren	67.6	59.0	60.5	68.8
29	San Juan Grade Rd.	Van Buren to Russell	65.5	56.9	58.4	66.7
30	San Juan Grade Rd.	Russell to Rogge	64.6	56.0	57.5	65.8
31	San Juan Grade Rd.	North of Rogge	61.1	54.0	56.2	62.9
32	Van Buren Ave.	West of San Juan Grade	53.9	48.6	50.2	56.3
33	Williams Rd.	West of E. Boronda	60.3	53.1	52.3	61.6
34	Williams Rd.		45.7	36.5	34.7	46.5

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 Central Area Specific Plan

Description: Base Year Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	8	17	37	80	172
2	E. Boronda Rd.	N. Main to San Juan Grade	12	26	55	119	257
3	E. Boronda Rd.	San Juan Grade to McKinnon	13	28	60	128	277
4	E. Boronda Rd.	McKinnon to El Dorado	11	24	51	109	235
5	E. Boronda Rd.	El Dorado to Natividad	10	22	47	101	218
6	E. Boronda Rd.	Natividad to Independence	13	28	61	130	281
7	E. Boronda Rd.	Independence to Hemmingway	10	22	48	103	222
8	E. Boronda Rd.	Hemmingway to Constitution	5	10	22	48	103
9	E. Boronda Rd.	Constitution to N. Sanborn	7	15	33	70	151
10	E. Boronda Rd.	N. Sanborn to Williams	5	12	25	54	117
11	El Dorado Dr.	South of E. Boronda	2	4	8	18	38
12	Hemmingway Dr.	South of E. Boronda	2	4	9	20	43
13	Independence Blvd.	South of E. Boronda	6	13	28	60	130
14	McKinnon St.	South of E. Boronda	8	17	37	80	172
15	N. Main	North of E. Boronda	18	40	86	185	398
16	N. Main	South of E. Boronda	18	39	84	181	390
17	N. Sanborn Rd.	South of E. Boronda	4	9	20	43	94
18	Natividad Rd.	South of E. Boronda	8	18	39	83	180
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	14	31	67	144	309
20	Natividad Rd.	Future Russell Rd. to Rogge	14	31	66	143	308
21	Natividad Rd.	North of Rogge	14	30	65	141	304
22	Old Stage Rd.	North of Future Constitution	9	20	43	93	201
23	Old Stage Rd.	Future Constitution to Williams	8	17	36	78	168
24	Old Stage Rd.	South of Williams	6	12	26	55	120
25	Rogge Rd.	San Juan Grade to Natividad	6	13	29	63	135
26	Russell Rd.	West of San Juan Grade	9	19	41	89	192
27	San Juan Grade Rd.	South of E. Boronda	16	34	73	157	339
28	San Juan Grade Rd.	E. Boronda to Van Buren	19	42	90	194	417
29	San Juan Grade Rd.	Van Buren to Russell	17	36	78	169	364
30	San Juan Grade Rd.	Russell to Rogge	15	32	68	147	317
31	San Juan Grade Rd.	North of Rogge	8	17	36	78	169
32	Van Buren Ave.	West of San Juan Grade	3	6	13	28	61
33	Williams Rd.	West of E. Boronda	8	18	38	83	178
34	Williams Rd.		10	22	47	101	218

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-152 Central Area Specific Plan
Description: Base Year + CASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	19,230	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	22,840	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	26,450	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	23,260	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	23,030	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	30,250	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	25,280	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	8,890	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	16,120	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	10,110	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	6,610	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,670	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	12,490	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	8,890	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	18,830	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	18,290	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	7,900	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	16,830	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	15,670	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	8,690	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	6,590	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	5,800	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	5,800	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,230	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	4,980	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	14,100	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	11,010	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	13,360	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	10,890	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	8,850	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,270	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,080	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	13,560	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	6,310	83		17	2.0	0.5	50	800	0
35	Russell Rd.	East of Natividad	5,240	83		17	2.0	0.5	45	75	0
36	Constitution Blvd.	N. of Boronda	18,610	83		17	2.0	0.5	45	75	

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-152 Central Area Specific Plan

Description: Base Year + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	62.5	53.8	52.3	63.4
2	E. Boronda Rd.	N. Main to San Juan Grade	64.9	56.3	57.8	66.1
3	E. Boronda Rd.	San Juan Grade to McKinnon	64.4	55.7	57.2	65.6
4	E. Boronda Rd.	McKinnon to El Dorado	63.8	55.2	56.7	65.0
5	E. Boronda Rd.	El Dorado to Natividad	63.8	55.1	56.6	65.0
6	E. Boronda Rd.	Natividad to Independence	66.1	57.5	59.0	67.4
7	E. Boronda Rd.	Independence to Hemmingway	65.3	56.7	58.2	66.6
8	E. Boronda Rd.	Hemmingway to Constitution	58.2	49.6	51.0	59.4
9	E. Boronda Rd.	Constitution to N. Sanborn	60.7	52.1	53.6	62.0
10	E. Boronda Rd.	N. Sanborn to Williams	58.7	50.1	51.6	60.0
11	El Dorado Dr.	South of E. Boronda	52.2	46.9	48.5	54.6
12	Hemmingway Dr.	South of E. Boronda	53.8	46.7	45.8	55.1
13	Independence Blvd.	South of E. Boronda	61.1	52.5	51.0	62.0
14	McKinnon St.	South of E. Boronda	62.7	55.5	54.7	64.0
15	N. Main	North of E. Boronda	64.2	57.0	62.2	66.8
16	N. Main	South of E. Boronda	62.3	55.2	60.4	64.9
17	N. Sanborn Rd.	South of E. Boronda	56.9	48.2	46.7	57.8
18	Natividad Rd.	South of E. Boronda	62.4	53.8	55.3	63.6
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	63.8	55.1	56.6	65.0
20	Natividad Rd.	Future Russell Rd. to Rogge	61.2	52.6	54.1	62.4
21	Natividad Rd.	North of Rogge	59.6	50.4	51.6	60.7
22	Old Stage Rd.	North of Future Constitution	59.0	49.8	51.0	60.1
23	Old Stage Rd.	Future Constitution to Williams	57.7	49.1	50.6	59.0
24	Old Stage Rd.	South of Williams	53.6	45.0	46.5	54.8
25	Rogge Rd.	San Juan Grade to Natividad	60.2	53.0	52.2	61.5
26	Russell Rd.	West of San Juan Grade	64.7	57.5	56.7	66.0
27	San Juan Grade Rd.	South of E. Boronda	64.1	55.5	57.0	65.3
28	San Juan Grade Rd.	E. Boronda to Van Buren	67.6	59.0	60.5	68.8
29	San Juan Grade Rd.	Van Buren to Russell	65.5	56.9	58.4	66.7
30	San Juan Grade Rd.	Russell to Rogge	64.6	56.0	57.5	65.8
31	San Juan Grade Rd.	North of Rogge	61.1	54.0	56.2	62.9
32	Van Buren Ave.	West of San Juan Grade	53.9	48.6	50.2	56.3
33	Williams Rd.	West of E. Boronda	62.8	55.6	54.8	64.1
34	Williams Rd.		47.6	38.4	36.5	48.4
35	Russell Rd.		60.9	52.3	50.7	61.8
36	Constitution Blvd.		66.4	57.8	56.2	67.3

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-152 Central Area Specific Plan

Description: Base Year + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	11	24	51	109	235
2	E. Boronda Rd.	N. Main to San Juan Grade	13	28	60	128	277
3	E. Boronda Rd.	San Juan Grade to McKinnon	14	31	66	142	305
4	E. Boronda Rd.	McKinnon to El Dorado	13	28	60	130	280
5	E. Boronda Rd.	El Dorado to Natividad	13	28	60	129	278
6	E. Boronda Rd.	Natividad to Independence	15	33	72	155	334
7	E. Boronda Rd.	Independence to Hemmingway	14	30	64	137	296
8	E. Boronda Rd.	Hemmingway to Constitution	7	15	32	68	148
9	E. Boronda Rd.	Constitution to N. Sanborn	10	22	47	102	219
10	E. Boronda Rd.	N. Sanborn to Williams	7	16	35	75	161
11	El Dorado Dr.	South of E. Boronda	2	5	10	22	47
12	Hemmingway Dr.	South of E. Boronda	2	5	11	24	51
13	Independence Blvd.	South of E. Boronda	8	18	38	82	176
14	McKinnon St.	South of E. Boronda	9	20	43	92	199
15	N. Main	North of E. Boronda	18	40	86	185	398
16	N. Main	South of E. Boronda	18	39	84	181	390
17	N. Sanborn Rd.	South of E. Boronda	6	13	28	60	130
18	Natividad Rd.	South of E. Boronda	10	23	49	105	226
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	22	46	100	215	464
20	Natividad Rd.	Future Russell Rd. to Rogge	15	31	67	145	313
21	Natividad Rd.	North of Rogge	14	31	67	144	310
22	Old Stage Rd.	North of Future Constitution	13	28	61	132	285
23	Old Stage Rd.	Future Constitution to Williams	11	24	52	111	239
24	Old Stage Rd.	South of Williams	6	13	27	59	126
25	Rogge Rd.	San Juan Grade to Natividad	6	13	29	63	135
26	Russell Rd.	West of San Juan Grade	13	27	58	125	270
27	San Juan Grade Rd.	South of E. Boronda	17	37	79	170	367
28	San Juan Grade Rd.	E. Boronda to Van Buren	19	42	90	194	417
29	San Juan Grade Rd.	Van Buren to Russell	17	36	78	169	364
30	San Juan Grade Rd.	Russell to Rogge	15	32	68	147	317
31	San Juan Grade Rd.	North of Rogge	8	17	36	78	169
32	Van Buren Ave.	West of San Juan Grade	3	6	13	28	61
33	Williams Rd.	West of E. Boronda	12	26	57	122	263
34	Williams Rd.		13	29	62	134	290
35	Russell Rd.		10	21	46	99	213
36	Constitution Blvd.		23	50	107	230	496

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2015-153 West Area Specific Plan

Description: Base Yeat + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	23,440	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	29,440	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	35,570	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	30,850	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	33,270	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	37,450	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	29,490	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	8,890	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	19,330	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	11,210	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	9,170	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,670	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	15,480	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	11,450	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	19,950	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	18,290	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	10,010	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	26,850	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	23,850	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	10,470	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	7,030	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	5,800	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	5,800	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,430	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	5,680	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	17,460	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	16,140	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	17,660	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	12,900	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	9,430	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,910	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,720	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	14,460	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	6,510	83		17	2.0	0.5	50	800	0
35	Russell Rd.	East of Natividad	5,240	83		17	2.0	0.5	45	75	0
36	Constitution Blvd.	N. of Boronda	22,820	83		17	2.0	0.5	45	75	

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Base Yeat + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	63.3	54.7	53.2	64.2
2	E. Boronda Rd.	N. Main to San Juan Grade	66.0	57.4	58.9	67.2
3	E. Boronda Rd.	San Juan Grade to McKinnon	65.6	57.0	58.5	66.9
4	E. Boronda Rd.	McKinnon to El Dorado	65.0	56.4	57.9	66.3
5	E. Boronda Rd.	El Dorado to Natividad	65.3	56.7	58.2	66.6
6	E. Boronda Rd.	Natividad to Independence	67.1	58.4	59.9	68.3
7	E. Boronda Rd.	Independence to Hemmingway	66.0	57.4	58.9	67.3
8	E. Boronda Rd.	Hemmingway to Constitution	58.2	49.6	51.0	59.4
9	E. Boronda Rd.	Constitution to N. Sanborn	61.5	52.9	54.4	62.8
10	E. Boronda Rd.	N. Sanborn to Williams	59.2	50.6	52.0	60.4
11	El Dorado Dr.	South of E. Boronda	53.6	48.3	50.0	56.0
12	Hemmingway Dr.	South of E. Boronda	53.8	46.7	45.8	55.1
13	Independence Blvd.	South of E. Boronda	62.0	53.4	51.9	63.0
14	McKinnon St.	South of E. Boronda	63.8	56.6	55.8	65.1
15	N. Main	North of E. Boronda	64.4	57.3	62.5	67.1
16	N. Main	South of E. Boronda	62.3	55.2	60.4	64.9
17	N. Sanborn Rd.	South of E. Boronda	57.9	49.3	47.7	58.8
18	Natividad Rd.	South of E. Boronda	64.4	55.8	57.3	65.7
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	65.6	57.0	58.5	66.8
20	Natividad Rd.	Future Russell Rd. to Rogge	62.0	53.4	54.9	63.2
21	Natividad Rd.	North of Rogge	59.9	50.7	51.9	60.9
22	Old Stage Rd.	North of Future Constitution	59.0	49.8	51.0	60.1
23	Old Stage Rd.	Future Constitution to Williams	57.7	49.1	50.6	59.0
24	Old Stage Rd.	South of Williams	53.9	45.3	46.8	55.2
25	Rogge Rd.	San Juan Grade to Natividad	60.7	53.5	52.7	62.0
26	Russell Rd.	West of San Juan Grade	65.6	58.4	57.6	66.9
27	San Juan Grade Rd.	South of E. Boronda	65.8	57.1	58.6	67.0
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.8	60.2	61.7	70.0
29	San Juan Grade Rd.	Van Buren to Russell	66.2	57.6	59.1	67.5
30	San Juan Grade Rd.	Russell to Rogge	64.9	56.3	57.8	66.1
31	San Juan Grade Rd.	North of Rogge	61.6	54.4	56.6	63.4
32	Van Buren Ave.	West of San Juan Grade	54.7	49.4	51.0	57.1
33	Williams Rd.	West of E. Boronda	63.1	55.9	55.1	64.4
34	Williams Rd.		47.7	38.5	36.7	48.5
35	Russell Rd.		60.9	52.3	50.7	61.8
36	Constitution Blvd.		67.3	58.7	57.1	68.2

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Base Yeat + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	12	27	58	125	269
2	E. Boronda Rd.	N. Main to San Juan Grade	15	33	71	152	328
3	E. Boronda Rd.	San Juan Grade to McKinnon	17	37	80	173	372
4	E. Boronda Rd.	McKinnon to El Dorado	16	34	73	157	338
5	E. Boronda Rd.	El Dorado to Natividad	17	36	77	165	356
6	E. Boronda Rd.	Natividad to Independence	18	38	83	179	385
7	E. Boronda Rd.	Independence to Hemmingway	15	33	71	152	328
8	E. Boronda Rd.	Hemmingway to Constitution	7	15	32	68	148
9	E. Boronda Rd.	Constitution to N. Sanborn	11	25	53	115	248
10	E. Boronda Rd.	N. Sanborn to Williams	8	17	37	80	172
11	El Dorado Dr.	South of E. Boronda	3	6	13	27	58
12	Hemmingway Dr.	South of E. Boronda	2	5	11	24	51
13	Independence Blvd.	South of E. Boronda	9	20	44	95	204
14	McKinnon St.	South of E. Boronda	11	24	51	109	235
15	N. Main	North of E. Boronda	19	41	89	192	414
16	N. Main	South of E. Boronda	18	39	84	181	390
17	N. Sanborn Rd.	South of E. Boronda	7	15	33	71	152
18	Natividad Rd.	South of E. Boronda	14	31	66	143	308
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	28	61	132	285	614
20	Natividad Rd.	Future Russell Rd. to Rogge	16	35	76	165	355
21	Natividad Rd.	North of Rogge	15	32	70	150	324
22	Old Stage Rd.	North of Future Constitution	13	28	61	132	285
23	Old Stage Rd.	Future Constitution to Williams	11	24	52	111	239
24	Old Stage Rd.	South of Williams	6	13	29	62	134
25	Rogge Rd.	San Juan Grade to Natividad	7	15	32	68	147
26	Russell Rd.	West of San Juan Grade	14	31	67	145	311
27	San Juan Grade Rd.	South of E. Boronda	22	47	102	220	473
28	San Juan Grade Rd.	E. Boronda to Van Buren	23	50	108	233	502
29	San Juan Grade Rd.	Van Buren to Russell	19	41	88	189	407
30	San Juan Grade Rd.	Russell to Rogge	15	33	71	153	331
31	San Juan Grade Rd.	North of Rogge	8	18	39	84	180
32	Van Buren Ave.	West of San Juan Grade	3	7	15	32	69
33	Williams Rd.	West of E. Boronda	13	27	59	127	275
34	Williams Rd.		14	30	64	137	296
35	Russell Rd.		10	21	46	99	213
36	Constitution Blvd.		26	57	122	264	568

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 Central Area Specific Plan
Description: Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	13,600	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	22,300	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	25,000	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	20,700	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	18,600	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	26,600	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	19,600	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	6,100	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	11,800	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	17,200	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	6,600	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,200	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	8,700	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	8,100	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	30,900	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	26,200	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	10,700	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	16,500	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	13,600	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	12,300	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	9,800	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	5,500	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	5,500	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	4,000	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	6,300	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	12,500	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	15,000	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	17,700	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	15,800	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	11,000	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	7,700	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,900	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	16,100	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	6,800	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 Central Area Specific Plan

Description: Cumulative No Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	61.0	52.3	50.8	61.9
2	E. Boronda Rd.	N. Main to San Juan Grade	64.8	56.2	57.7	66.0
3	E. Boronda Rd.	San Juan Grade to McKinnon	64.1	55.5	57.0	65.4
4	E. Boronda Rd.	McKinnon to El Dorado	63.3	54.7	56.2	64.5
5	E. Boronda Rd.	El Dorado to Natividad	62.8	54.2	55.7	64.1
6	E. Boronda Rd.	Natividad to Independence	65.6	57.0	58.4	66.8
7	E. Boronda Rd.	Independence to Hemmingway	64.2	55.6	57.1	65.5
8	E. Boronda Rd.	Hemmingway to Constitution	56.5	47.9	49.4	57.8
9	E. Boronda Rd.	Constitution to N. Sanborn	59.4	50.8	52.3	60.6
10	E. Boronda Rd.	N. Sanborn to Williams	61.0	52.4	53.9	62.3
11	El Dorado Dr.	South of E. Boronda	52.2	46.9	48.5	54.6
12	Hemmingway Dr.	South of E. Boronda	53.2	46.1	45.2	54.5
13	Independence Blvd.	South of E. Boronda	59.5	50.9	49.4	60.5
14	McKinnon St.	South of E. Boronda	62.3	55.1	54.3	63.6
15	N. Main	North of E. Boronda	66.3	59.2	64.4	69.0
16	N. Main	South of E. Boronda	63.9	56.7	61.9	66.5
17	N. Sanborn Rd.	South of E. Boronda	58.2	49.5	48.0	59.1
18	Natividad Rd.	South of E. Boronda	62.3	53.7	55.2	63.5
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	63.1	54.5	56.0	64.4
20	Natividad Rd.	Future Russell Rd. to Rogge	62.7	54.1	55.6	63.9
21	Natividad Rd.	North of Rogge	61.3	52.1	53.3	62.4
22	Old Stage Rd.	North of Future Constitution	58.8	49.6	50.8	59.9
23	Old Stage Rd.	Future Constitution to Williams	57.5	48.9	50.4	58.7
24	Old Stage Rd.	South of Williams	56.1	47.5	49.0	57.4
25	Rogge Rd.	San Juan Grade to Natividad	61.2	54.0	53.2	62.5
26	Russell Rd.	West of San Juan Grade	64.2	57.0	56.1	65.5
27	San Juan Grade Rd.	South of E. Boronda	65.4	56.8	58.3	66.7
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.8	60.2	61.7	70.0
29	San Juan Grade Rd.	Van Buren to Russell	67.1	58.5	60.0	68.4
30	San Juan Grade Rd.	Russell to Rogge	65.5	56.9	58.4	66.8
31	San Juan Grade Rd.	North of Rogge	62.0	54.9	57.1	63.8
32	Van Buren Ave.	West of San Juan Grade	54.9	49.6	51.2	57.3
33	Williams Rd.	West of E. Boronda	63.6	56.4	55.5	64.9
34	Williams Rd.		47.9	38.7	36.9	48.7

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 Central Area Specific Plan

Description: Cumulative No Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	9	19	40	87	187
2	E. Boronda Rd.	N. Main to San Juan Grade	13	27	59	126	272
3	E. Boronda Rd.	San Juan Grade to McKinnon	14	29	63	136	294
4	E. Boronda Rd.	McKinnon to El Dorado	12	26	56	120	259
5	E. Boronda Rd.	El Dorado to Natividad	11	24	52	112	241
6	E. Boronda Rd.	Natividad to Independence	14	31	66	142	306
7	E. Boronda Rd.	Independence to Hemmingway	12	25	54	116	250
8	E. Boronda Rd.	Hemmingway to Constitution	5	11	25	53	115
9	E. Boronda Rd.	Constitution to N. Sanborn	8	18	38	83	178
10	E. Boronda Rd.	N. Sanborn to Williams	11	23	49	106	229
11	El Dorado Dr.	South of E. Boronda	2	5	10	22	47
12	Hemmingway Dr.	South of E. Boronda	2	5	10	22	47
13	Independence Blvd.	South of E. Boronda	6	14	30	64	139
14	McKinnon St.	South of E. Boronda	9	19	40	87	187
15	N. Main	North of E. Boronda	26	55	119	257	554
16	N. Main	South of E. Boronda	23	50	107	230	496
17	N. Sanborn Rd.	South of E. Boronda	7	16	34	74	159
18	Natividad Rd.	South of E. Boronda	10	22	48	103	223
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	20	42	91	196	422
20	Natividad Rd.	Future Russell Rd. to Rogge	18	39	85	183	395
21	Natividad Rd.	North of Rogge	19	40	87	188	404
22	Old Stage Rd.	North of Future Constitution	13	27	59	128	275
23	Old Stage Rd.	Future Constitution to Williams	11	23	50	107	231
24	Old Stage Rd.	South of Williams	9	19	40	87	187
25	Rogge Rd.	San Juan Grade to Natividad	7	16	34	73	158
26	Russell Rd.	West of San Juan Grade	12	25	54	116	249
27	San Juan Grade Rd.	South of E. Boronda	21	45	97	209	451
28	San Juan Grade Rd.	E. Boronda to Van Buren	23	50	108	234	503
29	San Juan Grade Rd.	Van Buren to Russell	22	47	100	216	466
30	San Juan Grade Rd.	Russell to Rogge	17	37	79	170	366
31	San Juan Grade Rd.	North of Rogge	9	19	42	90	194
32	Van Buren Ave.	West of San Juan Grade	3	7	15	33	71
33	Williams Rd.	West of E. Boronda	14	30	64	137	295
34	Williams Rd.		14	30	66	141	304

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + CASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	20,260	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	24,700	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	28,610	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	26,050	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	25,690	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	34,460	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	28,160	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	11,980	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	18,100	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	20,450	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	8,340	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	4,000	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	12,270	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	9,840	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	30,900	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	26,200	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	13,750	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	20,730	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	18,490	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	12,300	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	9,800	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	7,540	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	7,540	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	4,180	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	6,300	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	18,130	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	16,210	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	17,700	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	15,800	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	11,000	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	7,700	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,900	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	21,210	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	8,660	83		17	2.0	0.5	50	800	0
35	Russell Rd.	East of Natividad	7,640	83		17	2.0	0.5	45	75	0
36	Constitution Blvd.	N. of Boronda	24,230	83		17	2.0	0.5	45	75	

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	62.7	54.1	52.5	63.6
2	E. Boronda Rd.	N. Main to San Juan Grade	65.2	56.6	58.1	66.5
3	E. Boronda Rd.	San Juan Grade to McKinnon	64.7	56.1	57.6	65.9
4	E. Boronda Rd.	McKinnon to El Dorado	64.3	55.7	57.2	65.5
5	E. Boronda Rd.	El Dorado to Natividad	64.2	55.6	57.1	65.5
6	E. Boronda Rd.	Natividad to Independence	66.7	58.1	59.6	67.9
7	E. Boronda Rd.	Independence to Hemmingway	65.8	57.2	58.7	67.1
8	E. Boronda Rd.	Hemmingway to Constitution	59.5	50.9	52.3	60.7
9	E. Boronda Rd.	Constitution to N. Sanborn	61.3	52.6	54.1	62.5
10	E. Boronda Rd.	N. Sanborn to Williams	61.8	53.2	54.7	63.0
11	El Dorado Dr.	South of E. Boronda	53.2	47.9	49.5	55.6
12	Hemmingway Dr.	South of E. Boronda	54.2	47.0	46.2	55.5
13	Independence Blvd.	South of E. Boronda	61.0	52.4	50.9	62.0
14	McKinnon St.	South of E. Boronda	63.1	55.9	55.1	64.4
15	N. Main	North of E. Boronda	66.3	59.2	64.4	69.0
16	N. Main	South of E. Boronda	63.9	56.7	61.9	66.5
17	N. Sanborn Rd.	South of E. Boronda	59.3	50.6	49.1	60.2
18	Natividad Rd.	South of E. Boronda	63.3	54.7	56.2	64.5
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	64.5	55.9	57.3	65.7
20	Natividad Rd.	Future Russell Rd. to Rogge	62.7	54.1	55.6	63.9
21	Natividad Rd.	North of Rogge	61.3	52.1	53.3	62.4
22	Old Stage Rd.	North of Future Constitution	60.2	51.0	52.2	61.2
23	Old Stage Rd.	Future Constitution to Williams	58.9	50.3	51.7	60.1
24	Old Stage Rd.	South of Williams	56.3	47.7	49.2	57.5
25	Rogge Rd.	San Juan Grade to Natividad	61.2	54.0	53.2	62.5
26	Russell Rd.	West of San Juan Grade	65.8	58.6	57.8	67.1
27	San Juan Grade Rd.	South of E. Boronda	65.8	57.2	58.7	67.0
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.8	60.2	61.7	70.0
29	San Juan Grade Rd.	Van Buren to Russell	67.1	58.5	60.0	68.4
30	San Juan Grade Rd.	Russell to Rogge	65.5	56.9	58.4	66.8
31	San Juan Grade Rd.	North of Rogge	62.0	54.9	57.1	63.8
32	Van Buren Ave.	West of San Juan Grade	54.9	49.6	51.2	57.3
33	Williams Rd.	West of E. Boronda	64.8	57.6	56.7	66.1
34	Williams Rd.		49.0	39.7	37.9	49.8
35	Russell Rd.		62.5	53.9	52.4	63.4
36	Constitution Blvd.		67.5	58.9	57.4	68.5

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	75	70	65	60	55
			-------- Distances to Traffic Noise Contours --------				
1	Constitution Blvd.	South of E. Boronda	11	24	52	113	244
2	E. Boronda Rd.	N. Main to San Juan Grade	14	29	63	135	292
3	E. Boronda Rd.	San Juan Grade to McKinnon	15	32	69	149	322
4	E. Boronda Rd.	McKinnon to El Dorado	14	30	65	140	302
5	E. Boronda Rd.	El Dorado to Natividad	14	30	64	139	299
6	E. Boronda Rd.	Natividad to Independence	17	36	78	169	364
7	E. Boronda Rd.	Independence to Hemmingway	15	32	69	148	318
8	E. Boronda Rd.	Hemmingway to Constitution	8	18	39	84	180
9	E. Boronda Rd.	Constitution to N. Sanborn	11	24	51	110	237
10	E. Boronda Rd.	N. Sanborn to Williams	12	26	55	119	257
11	El Dorado Dr.	South of E. Boronda	3	5	12	25	55
12	Hemmingway Dr.	South of E. Boronda	3	5	12	25	54
13	Independence Blvd.	South of E. Boronda	8	17	38	81	174
14	McKinnon St.	South of E. Boronda	10	21	46	99	212
15	N. Main	North of E. Boronda	26	55	119	257	554
16	N. Main	South of E. Boronda	23	50	107	230	496
17	N. Sanborn Rd.	South of E. Boronda	9	19	41	87	188
18	Natividad Rd.	South of E. Boronda	12	26	56	120	259
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	24	52	112	240	518
20	Natividad Rd.	Future Russell Rd. to Rogge	18	39	85	183	395
21	Natividad Rd.	North of Rogge	19	40	87	188	404
22	Old Stage Rd.	North of Future Constitution	16	34	73	157	339
23	Old Stage Rd.	Future Constitution to Williams	13	28	61	132	285
24	Old Stage Rd.	South of Williams	9	19	41	89	192
25	Rogge Rd.	San Juan Grade to Natividad	7	16	34	73	158
26	Russell Rd.	West of San Juan Grade	15	32	69	148	319
27	San Juan Grade Rd.	South of E. Boronda	22	47	102	220	474
28	San Juan Grade Rd.	E. Boronda to Van Buren	23	50	108	234	503
29	San Juan Grade Rd.	Van Buren to Russell	22	47	100	216	466
30	San Juan Grade Rd.	Russell to Rogge	17	37	79	170	366
31	San Juan Grade Rd.	North of Rogge	9	19	42	90	194
32	Van Buren Ave.	West of San Juan Grade	3	7	15	33	71
33	Williams Rd.	West of E. Boronda	16	35	76	165	355
34	Williams Rd.		17	36	77	166	358
35	Russell Rd.		13	27	59	127	274
36	Constitution Blvd.		27	59	127	275	591

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + WASP + CASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	24,270	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	30,880	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	37,430	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	34,080	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	33,530	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	41,660	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	31,730	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	11,980	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	21,110	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	21,660	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	10,760	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,000	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	15,070	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	12,360	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	32,020	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	26,200	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	15,550	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	30,660	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	29,750	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	14,080	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	10,240	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	7,740	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	7,740	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	4,380	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	7,000	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	21,490	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	20,960	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	22,000	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	17,810	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	11,580	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	8,340	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	4,540	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	22,420	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	8,660	83		17	2.0	0.5	50	800	0
35	Russell Rd.	East of Natividad	7,640	83		17	2.0	0.5	45	75	0
36	Constitution Blvd.	N. of Boronda	28,240	83		17	2.0	0.5	45	75	

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	63.5	54.9	53.3	64.4
2	E. Boronda Rd.	N. Main to San Juan Grade	66.2	57.6	59.1	67.5
3	E. Boronda Rd.	San Juan Grade to McKinnon	65.9	57.3	58.7	67.1
4	E. Boronda Rd.	McKinnon to El Dorado	65.5	56.8	58.3	66.7
5	E. Boronda Rd.	El Dorado to Natividad	65.4	56.8	58.3	66.6
6	E. Boronda Rd.	Natividad to Independence	67.5	58.9	60.4	68.8
7	E. Boronda Rd.	Independence to Hemmingway	66.3	57.7	59.2	67.6
8	E. Boronda Rd.	Hemmingway to Constitution	59.5	50.9	52.3	60.7
9	E. Boronda Rd.	Constitution to N. Sanborn	61.9	53.3	54.8	63.2
10	E. Boronda Rd.	N. Sanborn to Williams	62.0	53.4	54.9	63.3
11	El Dorado Dr.	South of E. Boronda	54.3	49.0	50.7	56.7
12	Hemmingway Dr.	South of E. Boronda	53.0	45.8	45.0	54.3
13	Independence Blvd.	South of E. Boronda	61.9	53.3	51.8	62.8
14	McKinnon St.	South of E. Boronda	64.1	56.9	56.1	65.4
15	N. Main	North of E. Boronda	66.5	59.4	64.5	69.1
16	N. Main	South of E. Boronda	63.9	56.7	61.9	66.5
17	N. Sanborn Rd.	South of E. Boronda	59.8	51.2	49.6	60.7
18	Natividad Rd.	South of E. Boronda	65.0	56.4	57.9	66.2
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.5	57.9	59.4	67.8
20	Natividad Rd.	Future Russell Rd. to Rogge	63.3	54.7	56.2	64.5
21	Natividad Rd.	North of Rogge	61.5	52.3	53.5	62.6
22	Old Stage Rd.	North of Future Constitution	60.3	51.1	52.3	61.4
23	Old Stage Rd.	Future Constitution to Williams	59.0	50.4	51.9	60.2
24	Old Stage Rd.	South of Williams	56.5	47.9	49.4	57.8
25	Rogge Rd.	San Juan Grade to Natividad	61.6	54.5	53.6	62.9
26	Russell Rd.	West of San Juan Grade	66.5	59.3	58.5	67.8
27	San Juan Grade Rd.	South of E. Boronda	66.9	58.3	59.8	68.1
28	San Juan Grade Rd.	E. Boronda to Van Buren	69.7	61.1	62.6	71.0
29	San Juan Grade Rd.	Van Buren to Russell	67.6	59.0	60.5	68.9
30	San Juan Grade Rd.	Russell to Rogge	65.8	57.2	58.6	67.0
31	San Juan Grade Rd.	North of Rogge	62.4	55.2	57.4	64.2
32	Van Buren Ave.	West of San Juan Grade	55.6	50.3	51.9	57.9
33	Williams Rd.	West of E. Boronda	65.0	57.8	57.0	66.3
34	Williams Rd.		49.0	39.7	37.9	49.8
35	Russell Rd.		62.5	53.9	52.4	63.4
36	Constitution Blvd.		68.2	59.6	58.1	69.1

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	13	27	59	128	275
2	E. Boronda Rd.	N. Main to San Juan Grade	16	34	73	157	338
3	E. Boronda Rd.	San Juan Grade to McKinnon	18	38	83	179	385
4	E. Boronda Rd.	McKinnon to El Dorado	17	36	78	168	361
5	E. Boronda Rd.	El Dorado to Natividad	17	36	77	166	358
6	E. Boronda Rd.	Natividad to Independence	19	41	89	192	413
7	E. Boronda Rd.	Independence to Hemmingway	16	34	74	160	345
8	E. Boronda Rd.	Hemmingway to Constitution	8	18	39	84	180
9	E. Boronda Rd.	Constitution to N. Sanborn	12	26	57	122	263
10	E. Boronda Rd.	N. Sanborn to Williams	12	27	58	124	267
11	El Dorado Dr.	South of E. Boronda	3	6	14	30	65
12	Hemmingway Dr.	South of E. Boronda	2	4	10	21	45
13	Independence Blvd.	South of E. Boronda	9	20	43	93	200
14	McKinnon St.	South of E. Boronda	11	25	53	115	247
15	N. Main	North of E. Boronda	26	57	122	263	567
16	N. Main	South of E. Boronda	23	50	107	230	496
17	N. Sanborn Rd.	South of E. Boronda	9	20	44	95	204
18	Natividad Rd.	South of E. Boronda	16	34	73	156	337
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	33	71	153	330	711
20	Natividad Rd.	Future Russell Rd. to Rogge	20	43	93	200	432
21	Natividad Rd.	North of Rogge	19	42	90	193	416
22	Old Stage Rd.	North of Future Constitution	16	35	74	160	345
23	Old Stage Rd.	Future Constitution to Williams	13	29	62	135	290
24	Old Stage Rd.	South of Williams	9	20	43	92	198
25	Rogge Rd.	San Juan Grade to Natividad	8	17	36	79	169
26	Russell Rd.	West of San Juan Grade	17	36	77	166	358
27	San Juan Grade Rd.	South of E. Boronda	26	56	121	261	563
28	San Juan Grade Rd.	E. Boronda to Van Buren	27	58	125	270	582
29	San Juan Grade Rd.	Van Buren to Russell	23	51	109	234	505
30	San Juan Grade Rd.	Russell to Rogge	18	38	82	176	379
31	San Juan Grade Rd.	North of Rogge	9	20	44	95	204
32	Van Buren Ave.	West of San Juan Grade	4	8	17	36	78
33	Williams Rd.	West of E. Boronda	17	37	79	171	368
34	Williams Rd.		17	36	77	166	358
35	Russell Rd.		13	27	59	127	274
36	Constitution Blvd.		30	65	141	304	655

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-152
Description Central Area Specific Plan
Roadway Name: Russell Road
Location(s): 1

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 63
Medium Truck L_{dn}, dB: 54
Heavy Truck L_{dn}, dB: 52

Site Geometry:

Receiver Description: West of Old Stage
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	48	47	**57**	Yes	Yes	No
7	7	55	47	47	**56**	Yes	Yes	Yes
8	8	53	46	46	**55**	Yes	Yes	Yes
9	9	52	44	45	**54**	Yes	Yes	Yes
10	10	52	44	44	**53**	Yes	Yes	Yes
11	11	51	43	43	**52**	Yes	Yes	Yes
12	12	50	42	42	**51**	Yes	Yes	Yes
13	13	49	41	41	**50**	Yes	Yes	Yes
14	14	49	40	40	**50**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number:	2015-152
Description	Central Area Specific Plan
Roadway Name:	Natividad
Location(s):	2

Noise Level Data:

Year:	2025
Auto L_{dn}, dB:	66
Medium Truck L_{dn}, dB:	58
Heavy Truck L_{dn}, dB:	64

Site Geometry:

Receiver Description:	North of Boronda
Centerline to Barrier Distance (C_1):	50
Barrier to Receiver Distance (C_2):	25
Automobile Elevation:	0
Medium Truck Elevation:	2
Heavy Truck Elevation:	8
Pad/Ground Elevation at Receiver:	0
Receiver Elevation[1]:	5
Base of Barrier Elevation:	0
Starting Barrier Height	6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	52	59	**62**	Yes	Yes	No
7	7	58	51	58	**61**	Yes	Yes	Yes
8	8	56	50	58	**60**	Yes	Yes	Yes
9	9	55	49	56	**59**	Yes	Yes	Yes
10	10	55	48	55	**59**	Yes	Yes	Yes
11	11	54	47	54	**57**	Yes	Yes	Yes
12	12	53	47	53	**57**	Yes	Yes	Yes
13	13	52	46	53	**56**	Yes	Yes	Yes
14	14	52	45	52	**55**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-152
Description Central Area Specific Plan
Roadway Name: Boronda
Location(s): 3

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 70
Medium Truck L_{dn}, dB: 61
Heavy Truck L_{dn}, dB: 63

Site Geometry:

Receiver Description: Natividad to Hemmingway
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	63	55	58	**65**	Yes	Yes	No
7	7	62	54	58	**64**	Yes	Yes	Yes
8	8	61	53	57	**63**	Yes	Yes	Yes
9	9	60	52	55	**62**	Yes	Yes	Yes
10	10	59	51	54	**61**	Yes	Yes	Yes
11	11	58	50	53	**60**	Yes	Yes	Yes
12	12	57	49	52	**59**	Yes	Yes	Yes
13	13	57	48	52	**58**	Yes	Yes	Yes
14	14	56	48	51	**58**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-152
Description Central Area Specific Plan
Roadway Name: Boronda
Location(s): 4

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 64
Medium Truck L_{dn}, dB: 56
Heavy Truck L_{dn}, dB: 57

Site Geometry:

Receiver Description: Hemmingway to Constitution
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	58	50	52	**59**	Yes	Yes	No
7	7	57	49	52	**58**	Yes	Yes	Yes
8	8	55	48	51	**57**	Yes	Yes	Yes
9	9	54	46	50	**56**	Yes	Yes	Yes
10	10	54	46	49	**55**	Yes	Yes	Yes
11	11	53	45	48	**54**	Yes	Yes	Yes
12	12	52	44	47	**54**	Yes	Yes	Yes
13	13	51	43	46	**53**	Yes	Yes	Yes
14	14	51	42	45	**52**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)

Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-152
Description: Central Area Specific Plan
Roadway Name: Constitution
Location(s): 5

Noise Level Data:

Year: 2025
Auto L_{dn}, dB: 68
Medium Truck L_{dn}, dB: 60
Heavy Truck L_{dn}, dB: 58

Site Geometry:

Receiver Description: Boronda to Old Stage
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	61	54	53	**63**	Yes	Yes	No
7	7	60	52	53	**62**	Yes	Yes	Yes
8	8	59	51	52	**60**	Yes	Yes	Yes
9	9	58	50	51	**59**	Yes	Yes	Yes
10	10	58	49	50	**59**	Yes	Yes	Yes
11	11	57	48	49	**58**	Yes	Yes	Yes
12	12	56	48	48	**57**	Yes	Yes	Yes
13	13	55	47	47	**56**	Yes	Yes	Yes
14	14	54	46	46	**56**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

j.c. brennan & associates
consultants in acoustics

APPENDIX I – TRANSPORTATION IMPACT ANALYSIS

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The Central Area Specific Plan

Draft Transportation Impact Analysis

Prepared for:
The City of Salinas
and De Novo Planning Group

February 2019

WC16-3296

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1.0 EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the Draft Central Area Specific Plan Environmental Impact Report (EIR). The Specific Plan proposes mixed use residential and commercial development that encompasses 760 acres in the northern area of the City of Salinas. Within that area the Specific Plan proposes the development of approximately 3,980 housing units, 372,000 square feet of mixed-use village center with residential and commercial development, 50 acres of parks, two elementary schools and a middle school.

Pursuant to regulations in the California Environmental Quality Act (CEQA), the purpose of this TIA is to determine whether and to what extent the Specific Plan would have significant impacts on the transportation network in the City of Salinas - including public transportation service and active transportation facilities. A performance baseline was established through traffic volume data collection and field observations of 56 study intersections in Salinas and nearby areas of unincorporated Monterey County. Freeway mainline and ramp junction volumes along US 101 were also collected. A level of service analysis (LOS) was then conducted using the observed volumes and compared against standards of significance derived from relevant local and state policy documents. An existing conditions operational analysis of the study intersections, US 101 segments, and US 101 ramp junctions found that four intersections function at LOS scores below Salinas minimum thresholds. All of the US 101 mainline sections and ramp junctions evaluated function within the standards set by the Monterey County Congestion Management Plan (CMP).

Project trip generation – the amount of traffic expected to be generated by the proposed project – was estimated based on the proposed project land uses and distributed across the existing transportation network based on observed traffic volumes. After accounting for the impact of project-related traffic on existing conditions, an operational analysis found that five intersections would experience below-standard LOS scores in the morning and/or evening peak period under the Existing plus Project Conditions scenario. The Northbound Off-Ramps at East Boronda Road and East Laurel Drive would operate at LOS E, which is below the minimum standards set by the County CMP. No significant impacts were found on the US 101 study segments in the Existing plus Project scenario.

For this TIA, 2045 is the horizon year for cumulative condition impact analyses. Based on observed volumes in the existing condition, travel behavior forecasting software was used to estimate and distribute future vehicle traffic onto the roadway network in order to test how the proposed project would impact the transportation network. The roadway network improvements included in the City's General Plan, including the eastside and westside bypasses, are reflected in the cumulative analyses.

Under the Cumulative with No Project Conditions scenario, fourteen intersections and three segments of US 101 would operate below local standards. For the Cumulative with Project Scenario, project trip generation for was distributed over the forecasted cumulative volumes. Under this Cumulative with Project Conditions scenario, sixteen intersections would function below local level of service standards during the morning and/or evening peak period. One segment of US 101 was found to operate below the minimum standards in the morning peak period, and three segments failed in the evening peak period. All ramp junctions were found to operate within CMP standards for all cumulative scenarios.

Significant impacts were found as a result of the addition of project traffic in both the existing and cumulative condition scenarios. In the Existing with Project Conditions scenario, significant adverse impacts were identified at five intersections and two ramp junctions; under the Cumulative with Project Conditions scenario, there were impacts at fifteen intersections and three freeway mainline segments. These impacts are largely mitigated through the addition of signal installation and/or optimization, as well as the addition of extra lanes and/or turn pockets. Highway main-line and ramp junction impacts are mitigated with contributions to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee Program. No impacts were found with regards to bicycle/pedestrian facilities and public transportation service.

2.0 INTRODUCTION

The City of Salinas (hereafter, "the City") 2002 General Plan establishes policies and goals for future growth. In the past, large tracts of land in the northern part of Salinas (referred to as the North of Boronda Future Growth Area or "FGA") had been set aside for development. The General Plan mandated that the City must adopt specific plans before any development could occur in this area. Thus, the City has prepared the Draft Central Area Specific Plan (hereafter referred to as the "proposed project") to establish the land use planning and regulatory guidance, which will govern the development of central portion of the North of Boronda FGA. Concurrently, the City is also preparing the West Area Specific Plan for the area which adjoins and is located directly west of the proposed project. Although the West Area Specific Plan is not part of the proposed project it is considered in some scenarios, discussed later. In sum the purpose of these plans is to leverage and encourage potential development as well as establish policies, development regulations and design standards that promote walkable communities where a variety of neighborhood amenities can be accessed via walking, biking, or public transit. These specific plan areas are shown in the context of Salinas with **Figure 1.**

The Central Area Specific Plan is approximately 760 acres and shares the boundary of Natividad Road with the West Area Specific Plan. The Central Area Specific Plan is generally bounded by Boronda Road, the future extension of Constitution Boulevard, Old Stage Road, the future Russell Road extension, and Natividad Road. The Central Area Specific Plan would be a master-planned community based on New Urbanism principles. The new community proposes a minimum of 3,419 and a maximum of 3,983 new homes and apartments. In addition to the residential uses, approximately 250,000 square feet of retail and office uses may also be built within the Village Center Mixed Use Zone and a portion of the Neighborhood General-2 (NG-2) Zones. Approximately 100,000 square feet of retail or office square footage could be converted to an additional 100 residential units. These residential and commercial uses will be built within the Plan's Residential/Mixed Use Zoning Districts. Approximately 183 net acres of public streets are included in the plan.

Three school sites are proposed within the Central Area Specific Plan on three parcels for a combined 48 acres. They include a middle school (7th grade through 8th grade) on 18 acres, an elementary school (kindergarten through 6th grade) on 12 acres, and another elementary/middle school (kindergarten through 8th grade) on 18 acres. Also proposed are an approximately 22,000 square foot library on two acres and a fire station on 1.5 acres. **Figure 2** shows the Central Area Specific Plan local circulation network.

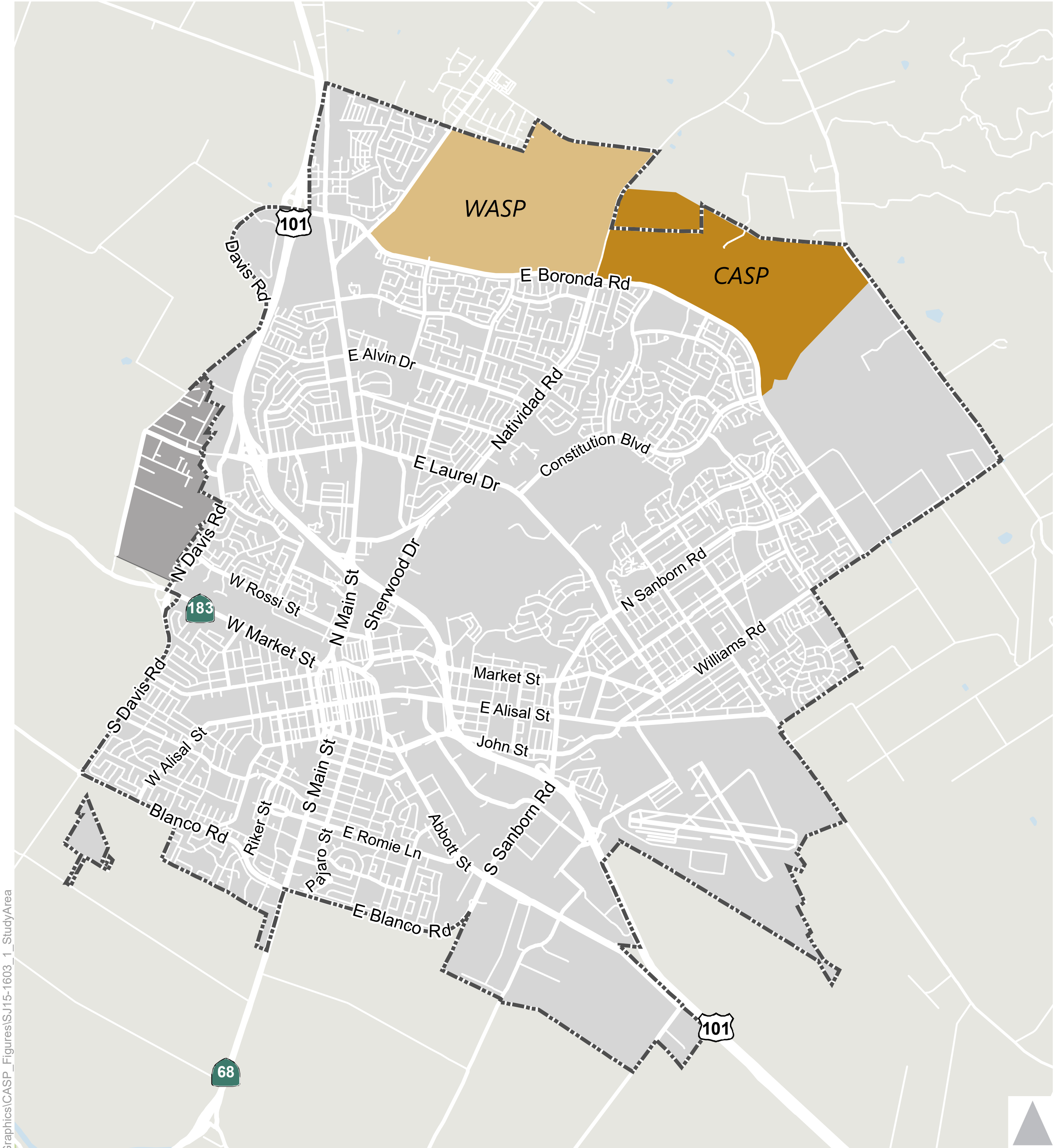
The proposed project includes many future land use changes and transportation improvements in the City and may have significant impacts on the transportation network as defined under the California

Environmental Quality Act (CEQA). As such, the purpose of this Transportation Impact Analysis (TIA) is to identify and propose mitigations for any potentially significant impacts of the proposed project on the transportation network. The impacts will be evaluated following guidelines established by the City of Salinas General Plan, relevant Caltrans Policy, and the Monterey County Congestion Management Program (CMP).

Field observations were conducted in order to establish a performance baseline against which to compare the influence of the proposed project. Local roadway and freeway segment volumes, transit service, and bicycle/pedestrian facilities were documented. Travel behavior modelling software was then utilized to forecast traffic patterns for five different scenarios based on the expected land uses of the proposed project, the Salinas General Plan (including the Economic Development Element Target Areas) and observed volumes. The scenarios were chosen to assess how the project would affect the transportation network in isolation and in conjunction with the planned West Area Specific Plan development. These were tested with existing traffic volumes and the forecasted volumes for 2045, as shown below:

1. *Existing Conditions:* Existing volumes collected from field observations.
2. *Existing Plus Project Conditions:* Existing volumes plus traffic generated by the proposed project.
3. *Existing Plus Project and West Area Specific Plan Conditions:* Existing volumes plus traffic generated by the proposed project and the West Area Specific Plan.
4. *Cumulative Conditions:* Projected traffic volumes and planned transportation infrastructure projects for 2045 including traffic generated by pending developments extraneous to the proposed project. All cumulative scenarios include the development contemplated under the Economic Development Element's Target Areas).
5. *Cumulative Plus Project Conditions:* Volumes generated under the *Cumulative Conditions* scenario, plus net traffic generated by implementation of the proposed project.
6. *Cumulative Plus Project and West Area Specific Plan:* Volumes generated under the *Cumulative Conditions* scenario, plus net traffic generated by implementation of the proposed project and the West Area Specific Plan.

Using guidelines set forth by the City, impacts to the transportation network are then identified based on forecasted volumes; mitigations are proposed for facilities where significant impacts are found.



Source: City of Salinas

Legend

West Area Specific Plan (WASP)

Central Area Specific Plan (CASP)

City Limits

Figure 1

Central Area Specific Plan Location

Figure 2

CASP Vehicular Circulation Plan

Graphics\CASP_Figures\SJ15-1603_2_CircPlan

Source: De Novo Planning Group

3.0 ANALYSIS METHODOLOGIES AND SIGNIFICANCE STANDARDS

This section documents the methodologies used to determine the level of service scores for selected intersections, ramp junctions, and freeway segments that may be impacted by changes in traffic volume related to the proposed project in the existing and cumulative conditions. Significance standards used to determine impacts are also derived from relevant policy documents and discussed.

3.1 INTERSECTION ANALYSIS METHODS

Intersection operations for vehicles is described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (i.e., free flow conditions) to LOS F (over capacity conditions). Typically, LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated as LOS F. The minimum LOS standard for Salinas, as defined by the current General Plan, is LOS D or better; therefore, intersections operating at LOS E or LOS F are considered to be below the minimum threshold. Caltrans and Monterey CMP facilities use the same standard.

There are two primary methodologies used in determining LOS that are derived from the Transportation Research Board's *Highway Capacity Manual* (HCM), published in 2000 and again in 2010. The 2010 HCM methodology was used for the study intersections. If an intersection could not be analyzed using HCM 2010 due to its limitations[1], HCM 2000 was used instead. There are four intersections in the analysis where HCM 2000 was used: US 101 Northbound Ramps and Boronda Road; US 101 Northbound Ramps and West Laurel Drive; West Laurel Drive and Adams Street; East Market Street and East Front Street. The most recent version of the *Synchro* transportation analysis software was used for all intersections, regardless of methodology.

The intersections of East Boronda Road and Main Street, East Boronda Road and US 101 Southbound Ramps, and East Boronda Road and US 101 Northbound Ramps were evaluated using *SimTraffic* to study congested conditions. *SimTraffic* is a microsimulation traffic evaluation tool that captures the random nature of driver behavior and models the interaction between vehicles in a study network. Traffic simulation better accounts for delays under congested conditions including pedestrian crossings, queue blocking, and queue

[1] The 2010 HCM methodology does not analyze intersections with certain configurations including but not limited to: more than four approaches, U-turns, and clustered intersections.

interactions between adjacent intersections when compared to traditional analysis methods, particularly when analyzing closely-spaced intersections.

3.1.1 SIGNALIZED INTERSECTIONS

The operation of signalized intersections is based on various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between average delay per vehicle and LOS for signalized intersections.

TABLE 1: SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	$\leq$ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with long delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual (Transportation Research Board)

3.1.2 UNSIGNALIZED INTERSECTIONS

Traffic conditions at unsignalized intersections were evaluated using the method from Chapters 19 (two-way stop control), 20 (all-way stop control) and 21 (roundabouts) of the 2010 *Highway Capacity Manual*. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each movement that must yield to the right-of-way. At all-way stop-controlled intersections and roundabouts, the weighted average control delay for all movements that must yield to the right-of-way is reported. Roundabouts were evaluated using *Sidra* software. At two-way or side street-controlled intersections, the control delay (and LOS) is calculated for each controlled movement, as well as the left-turn movement from the major street, and the entire intersection. For controlled approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The delays for the entire intersection and for the movement or approach with the highest delay are reported. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections.

TABLE 2: UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delays	$\leq$ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Highway Capacity Manual (Transportation Research Board).

3.1.3 INTERSECTION ANALYSIS ASSUMPTIONS

Assumptions for certain parameters such as heavy vehicle percentages and a network-wide peak hour were made as the intersection analysis is conducted. A heavy vehicle percentage of 2% was used throughout the entire network, except for designated truck routes where a value of 5% was used. Existing levels of bicycle and pedestrian activity were counted at each study intersection and included in the analysis. Traffic signal timing information was acquired from both the City and Caltrans and verified in the field.

Peak-hour factors were calculated for each individual study intersection; a singular peak hour was used for all study intersections. Although a different peak hour could be observed at each intersection, one peak hour was used for the entire network since the difference in the occurrence of the peak hour and its effect on the results should be minimal. This allows for analysis of intersections in the network during one peak hour opposed to each intersection operating during its individual peak hour.

In the cumulative scenarios, bicycle and pedestrian volumes were scaled up by 40% at intersections adjacent to the project site in order to account for growth in those modes. A minimum threshold of five conflicting bicycles and ten conflicting pedestrians was used to determine the application of scaling. At all other locations, bicycle and pedestrian volumes were scaled up by 15%.

3.2 FREEWAY MAINLINE AND RAMP JUNCTION ANALYSIS METHODS

Freeway mainline segments were analyzed using an internal spreadsheet tool based on the methodology described in Chapter 11 of HCM 2010. This method takes into consideration peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and number of travel lanes. These factors are used to determine the vehicle density, measured in passenger cars per mile per lane. The operational performance of ramp junctions at certain locations on the freeway were also analyzed according to a methodology based on the Highway Capacity Manual.

Based on the methodology described in the Transportation Research Board's *Highway Capacity Manual*, ramp merge and diverge analysis determines level of service (LOS) scores for freeway ramp junctions based on the density of entering and exiting traffic along the highway mainline. In this case, LOS describes the traffic and delay experienced by people driving as a result of traffic density on the ramps. It is important to note that the US 101 northbound on-ramp and southbound off-ramp at East Boronda Road were not analyzed because they add or remove an entire lane, thus creating a weaving segment; only ramp diverge or merge segments were analyzed.

3.3 VEHICLE MILES TRAVELLED

The Salinas Travel Demand Model was used to estimate Vehicle Miles Travelled (VMT) for the study area. This was done by multiplying the number of vehicle trips taken by trip length.

3.4 STANDARDS OF SIGNIFICANCE

Local governments and transportation agencies may set minimum Level of Service (LOS) standards for roads based on their classification, importance in the regional network, or other factors. Relevant policy documents and the resultant significance standards are described in this section.

When local ordinance is unclear about impacts at locations that are already failing, significance standards are taken from recent transportation impact analyses conducted in the same area. As such, the City of Salinas General Plan does not include a policy regarding the analysis of an intersection or roadway that is already operating below standard. However, in recent transportation impact studies prepared for the City, the thresholds used state that the addition of any new trips to a facility already exceeding the operating standard is considered a significant impact. A similar criterion is applied to County and Caltrans facilities that are already below operating standards. The impacts of the project were evaluated by comparing the results of the level of service calculations under Project Conditions to the results under Existing Conditions.

3.4.1 THE CITY OF SALINAS

The City of Salinas General Plan (2002) defines city policies regarding future growth and development. The Circulation Element of the General Plan establishes a framework for the transportation system, including the minimum Level of Service scores for City roads. To that end, Policy C-1.2 states that the City shall "strive to maintain traffic Level of Service (LOS) D or better for all intersections and roadways." Furthermore, Policy C-1.3 states that these standards must be maintained with the addition of new development. The standards and goals reflected in these policies will be accounted for in the existing and future operations analysis of this report.

The City of Salinas Bikeways Plan (2002) and City of Salinas Pedestrian Plan (2004) elaborate city policy with regards to the bicycle and pedestrian network. They also establish a prioritized list of projects as well as their cost for implementation. These plans illustrate the ideal bicycle and pedestrian network for the City.

The Central Area Specific Plan establishes land use designations, policies, development regulations and design standards for the Specific Plan area. With regards to transportation, the Plan defines a typology for local streets and the arterial roadways that bound the Central Area Specific Plan project area (shown earlier in **Figure 2**).

For the purposes of this TIA, impacts to bicycle, pedestrian, or transit service would occur if the implementation of the proposed project results in inadequate service and access for people using these modes, or if it would conflict with adopted polices, plans, or programs that support such modes.

Therefore, standards of significance for local intersections, pedestrian and bicycle facilities, and transit service is defined as follows:

3.4.1.1 Local Intersections

Significant impacts at signalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations to degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse); or
- Project traffic is added to an intersection operating at an unacceptable level (LOS E or worse).

Significant impacts at unsignalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations (either the intersection as a whole or the worst movement for a two-way stop-controlled intersection) to degrade to an unacceptable level and satisfy the peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD); or

- The project's access to a major street causes a potentially unsafe situation or requires a new traffic signal or roundabout based on standard warrant criteria.

3.4.1.2 Pedestrian and Bicycle Facilities

Significant impacts to pedestrian and bicycle facilities are defined to occur when:

- The project conflicts with existing or planned pedestrian or bicycle facilities; or
- The project creates pedestrian and bicycle demand without providing adequate facilities.

3.4.1.3 Public Transportation

Significant impacts to public transportation services are defined to occur when:

- The project conflicts with existing or planned transit facilities; or
- The project generates potential transit trips without providing adequate transit service or facilities, such as stops or shelters.

3.4.2 CALTRANS FACILITIES

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities (*Guide for the Preparation of Traffic Studies*, Caltrans, December 2002); however, Caltrans has acknowledged that such a goal may not always be feasible. A standard of LOS D or better was used as the planning objective for the evaluation of potential impacts of this development on Caltrans facilities as that is the standard set for Caltrans facilities in the study area by the Monterey CMP.

3.4.3 MONTEREY COUNTY

Some roadway segments in this report fall within the unincorporated areas of Monterey County. As such, the applicable level of service standards from the Monterey County General Plan Circulation Element will be applied. In this case, Policy C-1.1 of the plan states that "the acceptable level of service for County roads and intersections shall be Level of Service (LOS) D."

Therefore, significant impacts at mainline freeway segments and ramp junctions are defined to occur when:

- The addition of project traffic causes freeway mainlines or ramp junction operations to degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse), or
- Project traffic is added to a freeway mainline or ramp junction operating at an unacceptable level (LOS E or worse).

4.0 EXISTING CONDITIONS ANALYSIS

This chapter describes the transportation network around the study area as it exists today. The results of an existing conditions analysis using methods, assumptions, and significance standards are discussed.

4.1 EXISTING ROADWAY NETWORK

This section describes these existing roadway facilities relevant to the proposed project, which are shown in **Figure 3** below.

4.1.1 NORTH/SOUTH ROADWAYS

U.S. Route 101 (US 101) is a north-south, four-lane freeway extending through the City of Salinas. The highway becomes a six-lane freeway between Boronda Road and Russell Road, through the north City limits of Salinas. The intersection of US 101 and major roadways in Salinas are either an interchange or grade separated overpass.

San Juan Grade Road is a four-lane roadway south of Boronda Road that intersects at North Main Street and continues as two-lane roadway north of Boronda Road. The posted speed limit is 45 mph. Major intersections are controlled by traffic signals and minor intersections are controlled by side street stop control, with San Juan Grade Road as a free flow roadway. Sidewalks and striped Class II bicycle lanes are provided on San Juan Grade Road between Northridge Way and Main Street. Intermittent sidewalks are provided on some portions of the roadway between Russell Road and Rogge Village Way.

McKinnon Street is two-lane collector with bicycle lanes and sidewalks that connects with Boronda Road and Alvin Drive. The posted speed limit is 35 mph.

El Dorado Drive is a two-lane collector with bicycle lanes and sidewalks that connects with Boronda Road and Alvin Drive, with a two-way left turn lane between Harden Parkway and Alvin Drive. The posted speed limit is 25 mph.

Natividad Road is a six-lane divided major arterial from East Laurel to East Boronda Road with a posted speed limit of 40 mph. A portion of Natividad Road, between East Boronda Road and Los Coches Drive, has sound walls on each side of the roadway. Natividad Road is a two-lane rural roadway north of East Boronda Road. South of East Bernal Drive, this road is known as Sherwood Drive, a 4-lane arterial.

North Main Street is a six-lane divided major arterial between US 101 in the south and East Boranda Road in the north with a posted speed limit of 35 miles per hour in this section. South of US 101 to East Market Street, North Main is a four-lane undivided arterial with a two-way left turn lane. At the terminus it transitions into a couplet with Salinas Street continuing southbound, while Monterey Street provides northbound access.

Alisal Road is a two-lane rural road with a posted speed limit of 55 miles per hour. It runs from Spence Road in the east to East Alisal Street/Bardin Road at the Salinas City Limit. Alisal Road borders the Salinas Municipal Airport to the north but does not provide direct access to it.

Independence Boulevard is a divided collector roadway extending from Boronda Road to Constitution Boulevard. It provides Class II bicycle lanes along with a continuous sidewalk on the eastern side of the roadway for its entire length. Independence Boulevard is four lanes wide from Boronda Road to Nantucket Boulevard and two lanes wide south of Nantucket Boulevard.

Sanborn Road is a four-lane major arterial roadway connecting Boronda Road in the north with Abbott Street in the south. Traffic signals are provided at all major intersections and a full interchange with US 101 provides access to regional destinations. Continuous sidewalks are provided on both sides of Sanborn Road for its entire length. Striped Class II bicycle lanes have been installed on the segment of Sanborn Road north of Del Monte Avenue (to Boronda Road).

4.1.2 EAST/WEST ROADWAYS

Russell Road begins at the Espinosa Road/Russell Road interchange with US 101 and extends east to San Juan Grade Road. Russell Roadway provides two through lanes of travel (one in each direction), widening to provide additional turn lanes at intersections. The posted speed limit ranges from 35 to 45 mph. Intermittent sidewalks are provided along some sections of the facility.

Boronda Road begins at the Boronda Road interchange with US 101 as a six-lane major arterial to North Main Street. East of North Main Street, Boronda Road transitions to two lanes eastbound and three lanes westbound to San Juan Grade Road. East Boronda Road then narrows to a two-lane arterial east of Dartmouth Way until it terminates at Williams Road. Traffic signals control the intersections of Boronda Road and all major arterials.

The City of Salinas has plans to widen and improve Boronda Road between Dartmouth Way and Independence Boulevard, including the installation of roundabouts at major intersections. On May 16, 2017, the City Council approved the roundabout concept along East Boronda Road at the following intersections: McKinnon Street, El Dorado Drive, Natividad Road, Independence Boulevard, and Hemingway Drive. The project will widen East Boronda Road into a four-lane roadway with landscaped median, and bike lanes. The existing bridge over Gabilan Creek (near Independence Boulevard) will also be widened to accommodate the four-lane roadway with bike lanes and sidewalks.

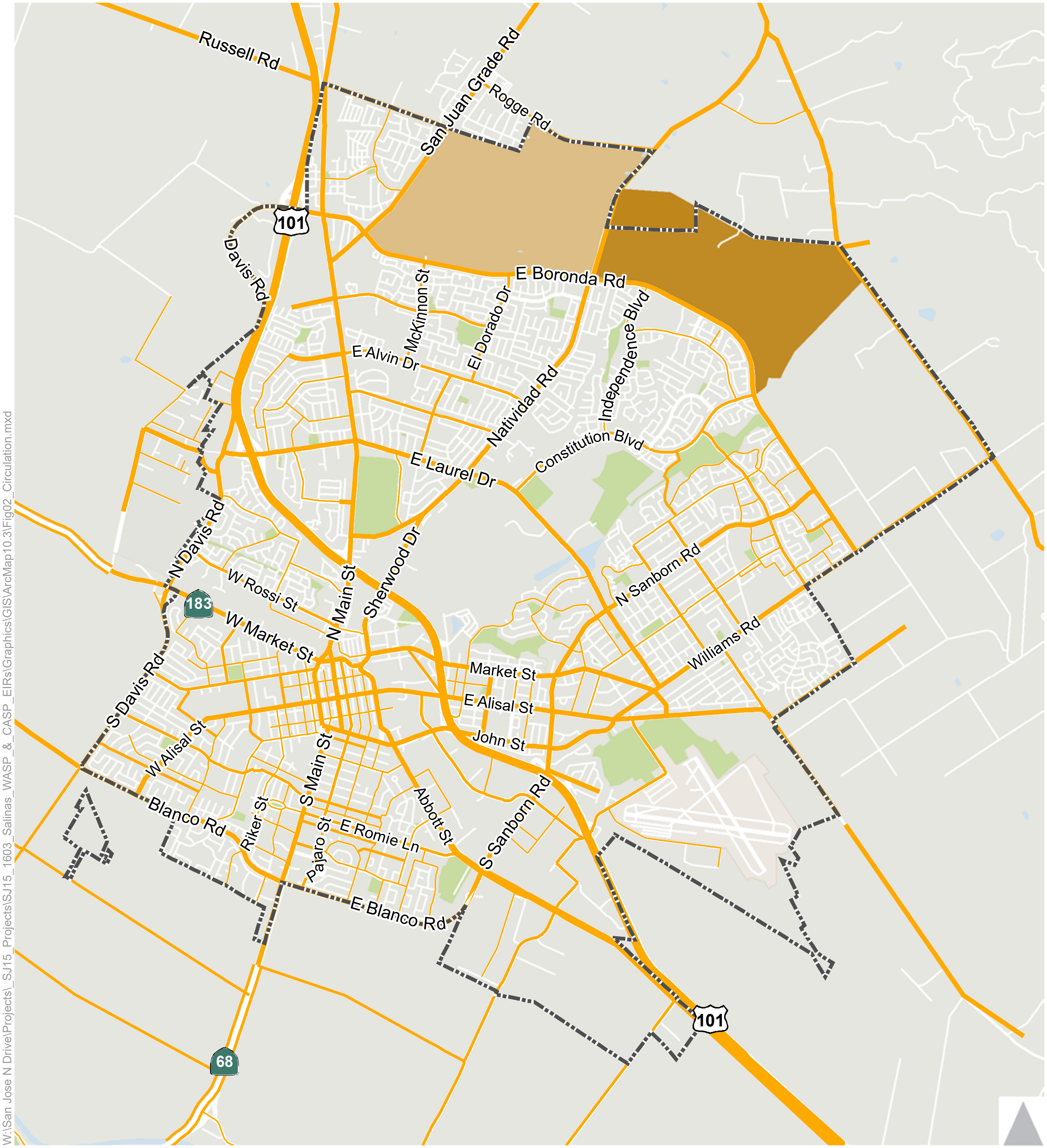
The widening project will occur in three phases. The first phase of the project would include widening of East Boronda Road from just east of Dartmouth Way to approximately 1,900 feet east of McKinnon Street for a total length of approximately 3,500 feet. It would include a roundabout at the intersection of McKinnon Street and East Boronda Road. This phase of the project is underway and currently nearing completion of the planning, environmental and design stages.

The second phase of the project would continue the widening of East Boronda Road from the Phase 1 limit to approximately 1,100 feet east of Natividad Road. It would also include roundabouts at the intersections of El Dorado Drive and Natividad Road. The remainder of the improvements including the widening of the bridge crossing Gabilan Creek, and the construction of a roundabout at the intersection of Independence Boulevard and East Boronda Road would be constructed as the last phase of the project. A roundabout at Hemmingway Drive may also be included as part of this final phase, pending further study.

Rogge Road is a two-lane collector connecting San Juan Grade Road and Natividad Road. The speed limit ranges from 55 mph to 25 mph (school zone). Sidewalks and a striped Class II bicycle lane are provided on the section of Rogge Road between Natividad Road and La Joya Elementary School. Intermittent facilities are provided west of La Joya Elementary.

Williams Road is a four-lane divided arterial with left-turn lanes between Del Monte Avenue and Freedom Parkway. Between Del Monte Avenue and East Alisal Street, Williams Road is a four-lane arterial with a center turn lane and left turn lanes. There is a painted bicycle lane between Freedom Parkway and Bardin Way.

Constitution Boulevard is a divided four-lane minor arterial roadway extending from Laurel Drive to Boronda Road. The facility provides striped Class II bicycle lanes and sidewalks on both sides of the roadway.



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Source: City of Salinas

Circulation System

- Freeway/New Interchange
- At-Grade Rural Highway
- Major Arterial
- Minor Arterial
- Collector
- City Limits
- West Area Specific Plan (WASP)
- Central Area Specific Plan (CASP)

Figure 3

Salinas Circulation Network

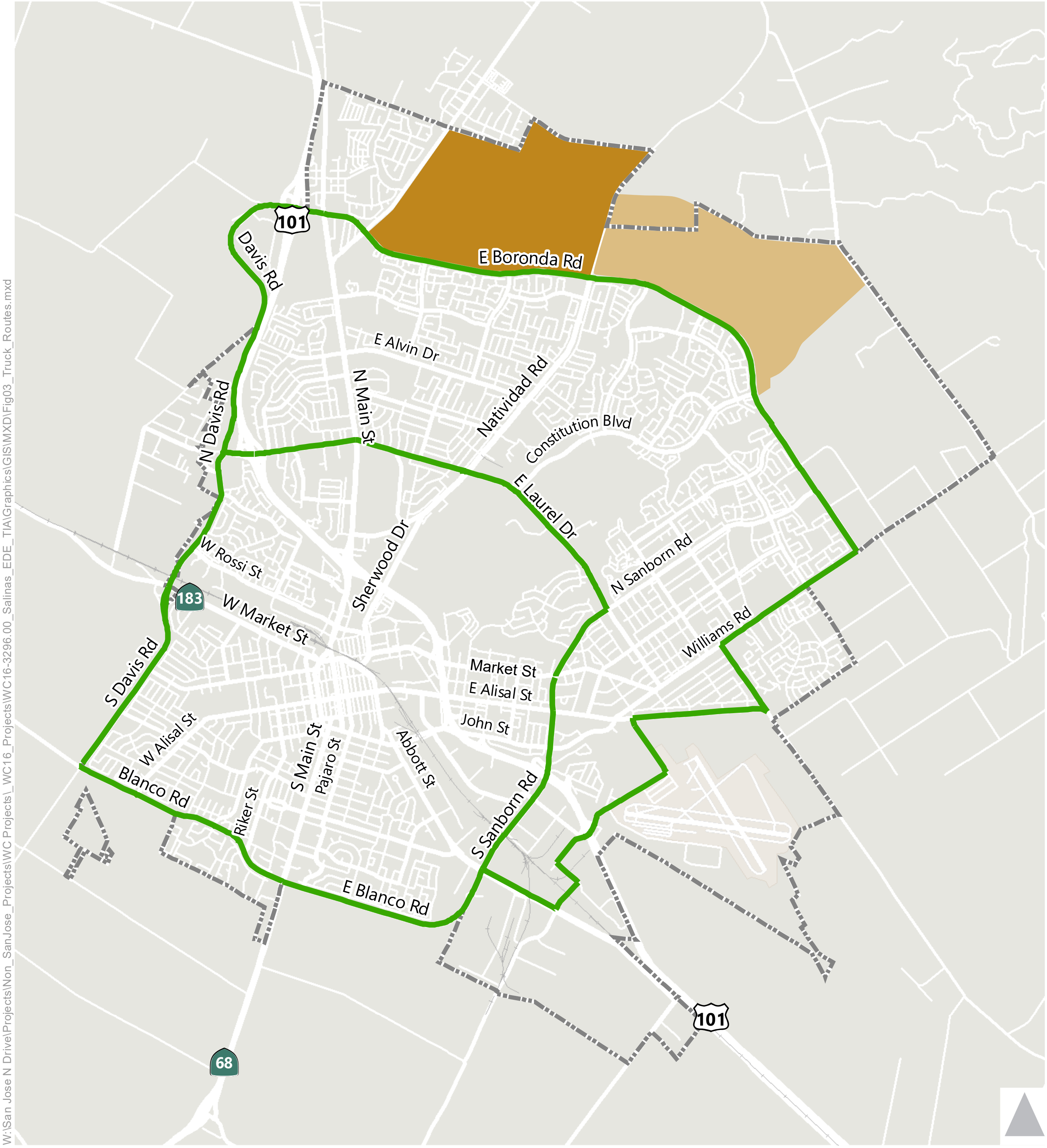
4.2 TRUCK ROUTES

US 101 and city-designated truck routes serve the primary industrial areas of the community. These roads are intended to move goods efficiently within the City, between outlying agricultural uses, and packing/distribution centers. Additionally, they serve to separate truck traffic from local streets where the larger vehicles may conflict with other uses.

Aside from US 101, the following roads in part or in whole serve as truck routes on City streets:

- Blanco Road
- Davis Road
- Boronda Road
- Williams Road
- Alisal Street
- Skyway Boulevard
- Airport Boulevard
- Sanborn Road
- Laurel Drive

As shown in **Figure 4**, these roads combine to form concentric rings that provide access to existing industrial uses and shipping centers throughout the City.



Source: City of Salinas

Truck Routes

Existing Truck Routes

City Limits

West Area Specific Plan (WASP)

Central Area Specific Plan (CASP)

Figure 4

City of Salinas Truck Routes

4.3 EXISTING PEDESTRIAN FACILITIES

Pedestrian facilities consist of sidewalks, curb ramps, crosswalks, and off-street paths, among other things. These facilities should provide safe and convenient routes for people walking to traverse the City. Pedestrian facilities are typically identified in the jurisdiction's General Plan as part of the transportation or circulation element, along with any proposed improvements or extensions to the existing pedestrian network. Policies and programs relating to walking in Salinas are defined in the City of Salinas Circulation Element Goal C-5 and the 2004 Salinas Pedestrian plan.

Pedestrian facilities exist in Salinas to varying degrees of comprehensiveness. Improved pedestrian facilities typically correspond to recent development, while roads adjacent to agricultural uses or undeveloped lots typically do not provide pedestrian facilities, which is common in urbanizing communities. Near the project area, wider sidewalks were more common in the presence of schools.

Pedestrian facilities relevant to the proposed project areas are listed below:

- **San Juan Grade Road** has intermittent facilities on the east and west sides of the street between Boronda Road and Rogge Road.
- **Constitution Boulevard** provides continuous standard sidewalks for its entire length, from the project's southern boundary at East Boronda Road to Laurel Drive.
- **Independence Boulevard** provides continuous standard sidewalks along the eastern side of the roadway for its entire length, from the project's southern boundary at East Boronda Road to Constitution Boulevard. On the western side, the facility is missing sidewalk along the links connecting directly to both East Boronda Road and Constitution Boulevard.
- **East Boronda Road** has a continuous southerly sidewalk for its entire length of approximately four miles from Williams Road and San Juan Grade Road, in the form of a curvilinear path – sometimes with landscaped vegetation – that parallels the roadway. The path is approximately 9 feet wide from Williams Road to San Juan Grade Road. Sidewalk switches to the north side of the road between San Juan Grade and North Main Street.
- **McKinnon Street** is equipped with approximately 9-foot sidewalks on the western side between Boronda Road and East Alvin Drive. Western side has an approximately 9-foot sidewalk between East Alvin Drive that narrows into approximately five feet approximately 400 feet south of Westminster Drive. McKinnon Street does not have sidewalks for 1,000 feet north of Boronda in the proximity of McKinnon Elementary School.
- **Natividad Road** has sidewalks are present on at least one side of the street between East Laurel Drive and Boronda Road. There are no sidewalks present north of Boronda Road.

- **Rogge Road** has been recently improved between San Juan Grade Road and Jasper Way. On this section, the sidewalk on the north and south side of the street. The sidewalk is approximately ten feet wide; the southern sidewalk narrows to approximately five feet west of Rogge Village Loop. No sidewalks are present east of Jasper Way.
- **Williams Road** has continuous sidewalks present between Alisal Street and Freedom Parkway, where it passes through entirely urban land uses. In the proximity of Alisal High School, the sidewalk widens and parallels the road in a curvilinear fashion similar to the facility on Boronda Road. Between Freedom Parkway and Boronda Road, the sidewalk is only present on the north side of the street, in correlation with the residential land use present there; the south side of the street is agricultural use. North of Boronda Road, the adjacent land use is entirely agricultural, and no sidewalks are present.
- **Old Stage Road** is a rural road serving mostly agricultural uses. It does not have any sidewalks.

Existing pedestrian facilities may have barriers in the form of signposts, utility poles, or overgrown vegetation. Such barriers can also provide challenges to the access requirements for those with disabilities, as mandated in Americans with Disabilities Act (ADA). As parcels are developed and required to install sidewalks, there can also be gaps in the sidewalk system when adjacent parcels are not redeveloped or vacant.

4.4 EXISTING BICYCLE FACILITIES

Bicycle facilities consist of paths (Class I), lanes (Class II), and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are separate areas on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only but may not include substantial width for bicycle travel. Like pedestrian facilities, bicycle networks are typically included in the General Plan, along with any proposed improvements or extensions. The list of existing bicycle facilities is summarized below and shown on **Figure 5** based on the 2002 Salinas Bicycle Plan and cross-checked against field observations.

4.4.1 CLASS I SHARED-USE PATHS

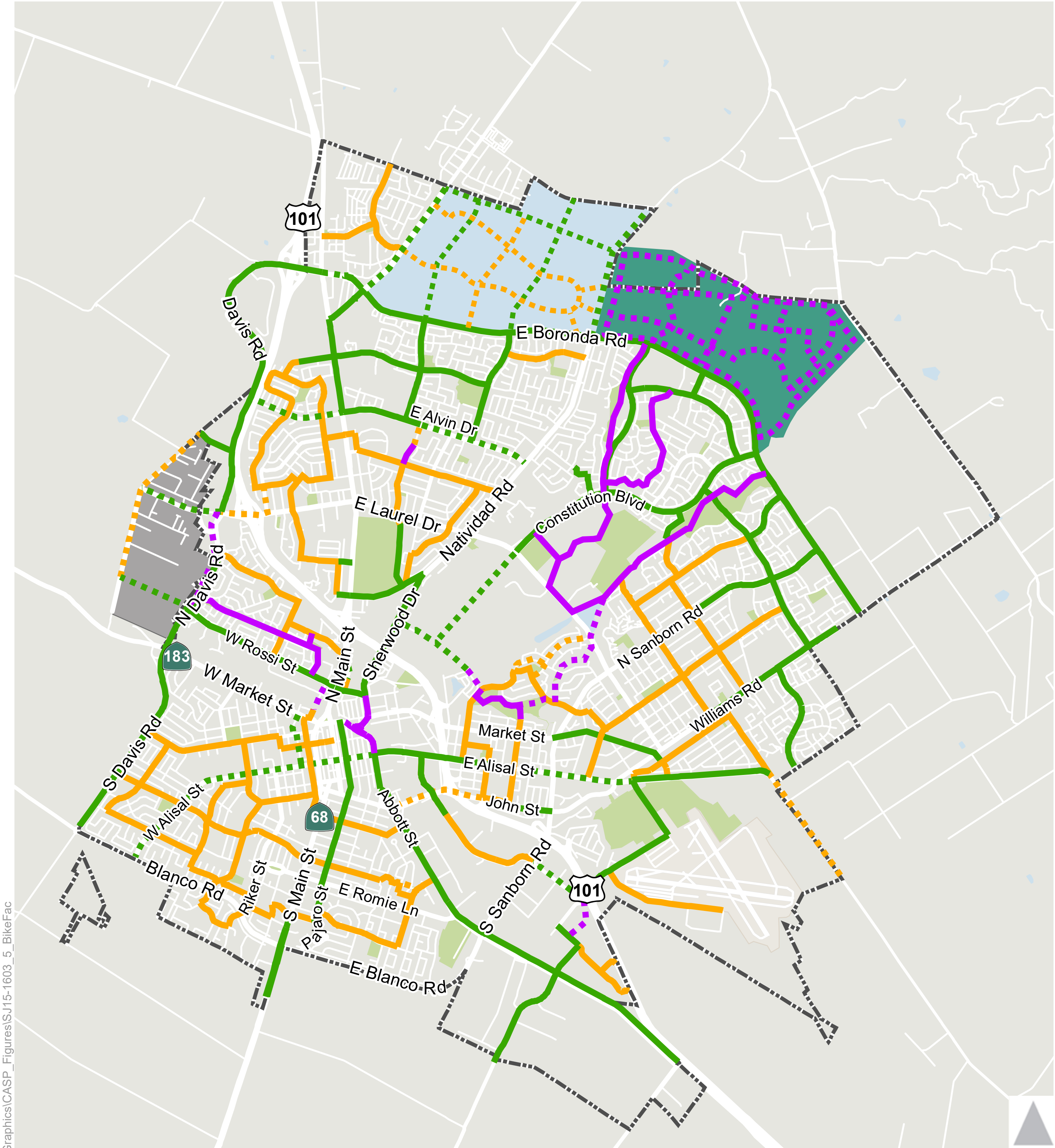
- Rossi Rico Parkway
- Natividad Creek Park Trail
- Gabilan Creek Bike Path
- Front-Sherwood Underpass

4.4.2 CLASS II BICYCLE LANES

- Williams Road
- Freedom Parkway
- North Sanborn Road between Del Monte Ave and East Boronda Road
- Constitution Boulevard
- Independence Boulevard
- East Boronda Road between Williams Road and North Davis Road
- North Davis Road between Boronda Road and SR 183
- South Davis Road between SR 183 to Blanco Road
- Nantucket Boulevard
- Rider Avenue
- Hemingway Drive
- El Dorado Drive
- Harden Parkway
- McKinnon Street
- East Alvin Drive between Kip Drive and North Main Street
- North Main Street between East Alvin Drive and San Juan Grade Road
- San Juan Grade Road between East Boronda Road and North Main Street
- Harden Parkway
- East and West Rossi Street
- Pajaro Street Between East Market Street and East San Joaquin Street
- South Main Street between East San Joaquin Street and Stephanie Drive
- East Alisal Street between Front Street and North Madeira Avenue
- Work Street between East Alisal Street and John Street
- Abbott Street between John Street and Harkins Road
- Front Street between East Alisal Street and John Street
- Laurel Drive between Constitution Boulevard and Saint Edwards
- Sherwood Drive

4.4.3 CLASS III ROUTES

These facilities are ubiquitous throughout Salinas neighborhoods and are typically located on low-volume local streets.



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Source: City of Salinas

Bike Plan

Class I: Path (Existing)
Class II: Lane (Existing)
Class III: Route (Existing)
City Limits
Class I: Path (Proposed)
Class II: Lane (Proposed)
Class III: Route (Proposed)
West Area Specific Plan (WASP)
Central Area Specific Plan (CASP)

Figure 5

Existing and Planned Bicycle Facilities

4.5 EXISTING TRANSIT SERVICE

Monterey-Salinas Transit (MST) provides fixed-route bus service in Monterey County and in the City of Salinas. Most routes in Salinas follow a hub-and-spoke service pattern, originating and returning to the Salinas Transit Center in downtown Salinas. Express and commuter busses are also provided to regional destinations in Monterey and Santa Cruz counties. As of 2014, MST experiences about 14,000 passenger trips on an average weekday.[2] **Figure 6** shows a map of transit bus service in Salinas.

The proposed project is served by MST routes 41, 45, 49, 72 and 95. Many of these routes start at the Downtown Salinas Transit Center and end at the Northridge Mall, in the northwest corner of the city. **Table 3** below summarizes the hours of operation and service frequencies of these routes. Routes 45, 72 and 95 have stops on East Boronda Road near San Juan Grade Road, McKinnon Street, El Dorado Drive, Shaker Square (a retail shopping center), Natividad Road, and Independence Road.

TABLE 3: EXISTING TRANSIT SERVICE

Route #	Route Name/Destination	Weekday	Saturday	Sunday	Commute Headway (peak hour)
41	Northridge via East Alisal	5:17 AM – 10:16 PM	5:55 AM -10:14 PM		30 Minutes
45	Northridge via East Market	Daily: 7:00 AM – 7:00 PM			75 minutes
49	Santa Rita via Northridge	Daily: 6:15 AM – 10:00 PM			60 Minutes
72	Presidio – North Salinas Express	6:00 AM – 6:15 PM	n/a		1 AM Trip/1 PM Trip
95	Northridge – Williams Ranch	Daily: 7:02 AM – 5:20 PM			120 Minutes

Source: Monterey-Salinas Transit, 2019

[2] Monterey-Salinas Transit 2014 Annual Agency Profile, National Transit Database, 2014.

Source: Monterey-Salinas Transit

Legend

- 20 Salinas - Monterey *via Marina*
- 21 Pebble Beach - Salinas Express
- 23 Salinas - King City
- 25 CSUMB - Salinas
- 28 Watsonville - Salinas *via Castroville*
- 29 Watsonville - Salinas *via Prunedale*
- 41 Northridge - Salinas *via East Alisal*
- 42 Westridge - Spreckles *via East Salinas*
- 43 South Salinas - Salinas *via SVMH*
- 44 Northridge - Salinas *via Westridge*
- 45 Northridge - Salinas *via East Market*
- 46 Natividad - Salinas
- 47 Hartnell - Alisal Campus
- 48 Salinas - Salinas Airport Business Center
- 49 Salinas - Santa Rita *via Northridge*
- 56 Monterey - Salinas *via Hwy 68*
- 61 Salinas - VA - DOD Clinic
- 72 Presidio - N. Salinas Express
- 82 Fort Hunter Liggett - Salinas Express
- 85 Fort Hunter Liggett - Templeton
- 86 King City - San Jose *via San Jose Airport*
- 95 Northridge - Williams Ranch

- Transit Center
- Select Trips (See Riders Guide)
- Direction of Route
- Route Terminus — 41 Northridge
- Multiple routes serve this section
- Place of Interest
- School
- Public Place
- Airport
- Shopping Mall
- Park or Golf Course
- Major Terminus — Salinas Transit Center: 20 21 23 25 28 29 41 43 44 45 46 47 48 49 56 61 82 86

Figure 6

Existing Transit Service

4.6 STUDY LOCATIONS

Study intersections, highway segments, and highway ramp junctions were selected based on the proposed project location, expected directions of travel to/from the site, and the amount of traffic that will be added to the transportation network.

4.6.1 INTERSECTIONS

1. US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road
2. US 101 Northbound Ramps/Crazy Horse Canyon Road
3. US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road
4. Harrison Road/Sala Road/Driveway
5. Crazy Horse Canyon Road/San Juan Grade Road
6. Hebert Road/San Juan Grade Road
7. Old Stage Road/Hebert Road
8. North Main Street/Harrison Road/Russell Road
9. Van Buren Avenue/Russell Road
10. San Juan Grade Road/Rogge Road
11. San Juan Grade Road/Russell Road
12. Natividad Road/Rogge Road
13. Natividad Road/Russell Road *(future extension)*
14. San Juan Grade Road/Van Buren Avenue
15. US 101 Southbound Ramps/Boronda Road
16. US 101 Northbound Ramps/Boronda Road
17. North Main Street/Boronda Road
18. North Main Street/San Juan Grade Road
19. San Juan Grade Road/Boronda Road
20. McKinnon Street/Boronda Road
21. El Dorado Drive/Boronda Road
22. Natividad Road/Boronda Road
23. Independence Boulevard/Boronda Road
24. Hemingway Drive/Boronda Road
25. Old Stage Road/Constitution Boulevard *(future extension)*
26. North Main Street/East Alvin Drive
27. Natividad Road/East Alvin Drive
28. Independence Boulevard/Constitution Boulevard
29. Boronda Road/Constitution Boulevard
30. US 101 Southbound Ramps/West Laurel Drive
31. US 101 Northbound Ramps/West Laurel Drive
32. North Main Street/West Laurel Drive
33. Natividad Road/East Laurel Drive
34. Constitution Boulevard/East Laurel Drive
35. North Sanborn Road/Boronda Road

36. Old Stage Road/Williams Road/Private Road
37. North Main Street/East Bernal Drive
38. Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way
39. East Laurel Drive/North Sanborn Road
40. Williams Road/Boronda Road
41. Freedom Pkwy/Williams Road
42. Bardin Road/Bardin Way/Williams Road
43. East Market Street/Williams Road
44. John Street/Williams Road/E Alisal Street
45. South Sanborn Road/North Sanborn Road/John Street
46. Bardin Road/East Alisal Street/Driveway
47. Skyway Boulevard/Airport Boulevard
48. South Sanborn Road/North Sanborn Road/East Alisal Street
49. West Laurel Drive/Adams Street
50. North Davis Road/West Laurel Drive
51. East Front Street/Sherwood Drive/Market Street
52. East Market Street/East Front Street
53. South Davis Road/Blanco Road
54. Monterey Street/Monterey Street/East Market Street
55. Salinas Street/North Main Street/West Market Street/East Market Street
56. South Main Street/West Blanco Road/East Blanco Road

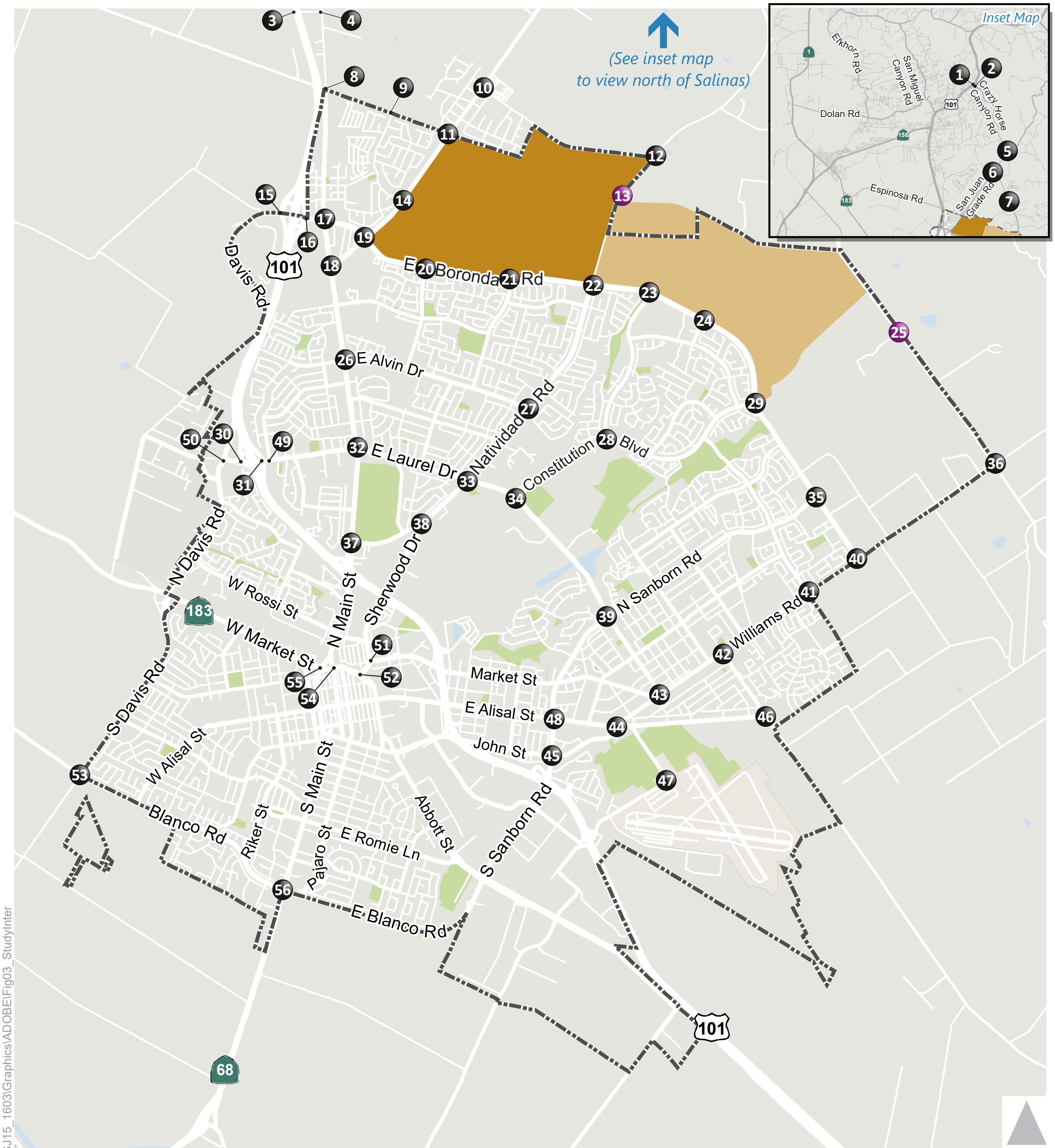
4.6.2 FREEWAY SEGMENTS

1. US 101 from San Juan Road to Crazy Horse Canyon Road
2. US 101 from Crazy Horse Canyon Road to San Miguel Canyon Road
3. US 101 from San Miguel Canyon Road to SR 156
4. US 101 from SR 156 to Sala Road
5. US 101 from Sala Road to Boronda Road
6. US 101 from Boronda Road to W. Laurel Drive
7. US 101 from W. Laurel Drive to N. Main Street/SR 183
8. US 101 from N. Main Street/ SR 183 to E. Market Street
9. US 101 from SR 68/John Street to S. Sanborn Road
10. US 101 from S. Sanborn Road to Abbott Street

4.6.3 FREEWAY RAMP JUNCTIONS

1. US 101 and East Boronda Road Southbound Loop On-Ramp
2. US 101 and East Boronda Road Southbound On-Ramp
3. US 101 and East Boronda Road Northbound Loop On-Ramp
4. US 101 and East Boronda Road Northbound Off-Ramp
5. US 101 and West Laurel Drive Southbound Off-Ramp

6. US 101 and West Laurel Drive
   Southbound On-Ramp
7. US 101 and West Laurel Drive
   Southbound Loop On-Ramp
8. US 101 and West Laurel Drive
   Northbound On-Ramp
9. US 101 and West Laurel Drive
   Northbound Loop On-Ramp
10. US 101 and West Laurel Drive
    Northbound Off-Ramp



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Source: City of Salinas

Legend

Study Intersection
Future Study Intersection
West Area Specific Plan (WASP)
Central Area Specific Plan (CASP)
City Limits

Figure 7
Study Intersections

4.7 EXISTING WITH NO PROJECT ANALYSES

Intersection turning movement and US 101 segment volumes were collected on midweek days in January, February, and April of 2016. **Figure 8** illustrates the existing turning movement volumes at the study intersections. Volumes were collected in January and February to capture school-related travel. However, in order to account for possible seasonal variances in traffic volume due the local context of Salinas, a volume adjustment factor for these winter counts was considered. Using prior data collected by the City from the summer of 2015, winter counts were found to be larger than summer counts by about 2 percent. Such a variance is likely due to simple day-to-day fluctuations in travel behavior, and as such an adjustment factor for winter volumes was ultimately not used.

4.7.1 EXISTING WITH NO PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing level of service levels were evaluated at 54 intersections in Salinas, presented in **Table 4**, below. Intersections that function below the minimum threshold (LOS D) in either the morning or evening peak period are shown in bold.

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	6.9 (15.2)	A (C)	11.2 (17.6)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	3.4 (12)	A (B)	2.9 (13.3)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	8.6	A	10.1	B
4	Harrison Road/Sala Road	Signal	8.7	A	9.2	A
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	9.2	A	11.1	B
6	Hebert Road/San Juan Grade Road	SSSC	5.9 (11.3)	A (B)	7.1 (21.6)	A (C)
7	Old Stage Road/Hebert Road	SSSC	0.6 (11.7)	A (B)	0.6 (13.5)	A (B)
8	North Main Street/Harrison Road/Russell Road	Signal	16.9	B	21.5	C

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
9	Van Buren Ave/Russell Road	Signal	17.5	B	18.8	B
10	San Juan Grade Road/Rogge Road	AWSC	17.4	C	13.4	B
11	San Juan Grade Road/Russell Road	Signal	14.9	B	13.1	B
12	Natividad Road/Rogge Road	SSSC	5.7 (10.4)	A (B)	5.2 (12.4)	A (B)
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.6 (29.8)	A (D)	3.1 (19.4)	A (C)
15	US 101 Southbound Ramps/Boronda Road	Signal	6	A	7.1	A
16	US 101 Northbound Ramps/Boronda Road	Signal	7.9	A	18.1	B
17	North Main Street/Boronda Road	Signal	47.3	D	46.2	D
18	North Main Street/San Juan Grade Road	Signal	11.3	B	22.5	C
19	San Juan Grade Road/Boronda Road	Signal	39.5	D	42.7	D
20	McKinnon Street/Boronda Road	Signal	26.5	C	24.8	C
21	El Dorado Drive/Boronda Road	Signal	12.7	B	8.9	A
22	Natividad Road/Boronda Road	Signal	36.1	D	54.9	D
23	Independence Boulevard/Boronda Road	Signal	14.3	B	10.7	B
24	**Hemingway Drive/Boronda Road**	**SSSC**	**17.9 (114.3)**	**C (F)**	**5.6 (99.4)**	**A (F)**
26	North Main Street/East Alvin Drive	Signal	41.2	D	40.9	D
27	Natividad Road/East Alvin Drive	Signal	14.4	B	12.7	B
28	Independence Boulevard/Constitution Boulevard	Signal	21.4	C	20.4	C
29	Boronda Road/Constitution Boulevard	Signal	8.5	A	10.4	B

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.5	A	11.7	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.6	A	12.2	B
32	**North Main Street/West Laurel Drive**	**Signal**	38.6	D	**56.7**	**E**
33	Natividad Road/East Laurel Drive	Signal	54.9	D	48.9	D
34	East Laurel Drive/Constitution Boulevard	Signal	17.5	B	22.9	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**19.3 (123.6)**	**B (F)**	**7.3 (38.4)**	**A (E)**
36	Old Stage Road/Williams Road/Private Road	SSSC	5.1 (10.2)	A (B)	4.0 (11.6)	A (B)
37	North Main Street/East Bernal Drive	Signal	45.4	D	40.1	D
38	**Sherwood Drive/Natividad Road/E Bernal Drive/La Posada Way**	**Signal**	41.9	D	**60**	**E**
39	East Laurel Drive/North Sanborn Road	Signal	20.1	C	26.5	C
40	Williams Road/Boronda Road	SSSC	7.2 (15.4)	A (C)	6.8 (25.9)	A (D)
41	Freedom Parkway/Williams Road	Signal	19.3	B	20.4	C
42	Bardin Road/Bardin Way/Williams Road	Signal	16.8	B	19.5	B
43	East Market Street/Williams Road	Signal	19.7	B	29.1	C
44	John Street/Williams Road/East Alisal Street	Signal	12.3	B	13	B
45	South Sanborn Road/North Sanborn Road/John Street	Signal	44.6	D	25.5	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	9.9	A	9.8	A
47	Skyway Boulevard/Airport Boulevard	SSSC	2.6 (9.5)	A (A)	10.9 (14.9)	B (B)

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	25.6	C	31.5	C
49	West Laurel Drive/Adams Street	Signal	12.7	B	17	B
50	North Davis Road/West Laurel Drive	Signal	25.9	C	43.7	D
51	East Front Street/Sherwood Drive/Market Street	Signal	11.6	B	13.9	B
52	East Market Street/East Front Street	Signal	8.8	A	9.1	A
53	South Davis Road/Blanco Road	Signal	38.3	D	45.5	D
54	Monterey Street/Monterey Street/East Market Street	Signal	17.1	B	25.2	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	28.4	C	29.5	C
56	South Main Street/West Blanco Road/East Blanco Road	Signal	37	D	40.9	D

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Currently, four intersections operate at a level of service below the City threshold of LOS D or better during the morning and/or evening peak period. Of these, only two intersections function at LOS F in either peak period: Hemingway Drive & Boronda Road, and North Sanborn Road & Boronda Road.

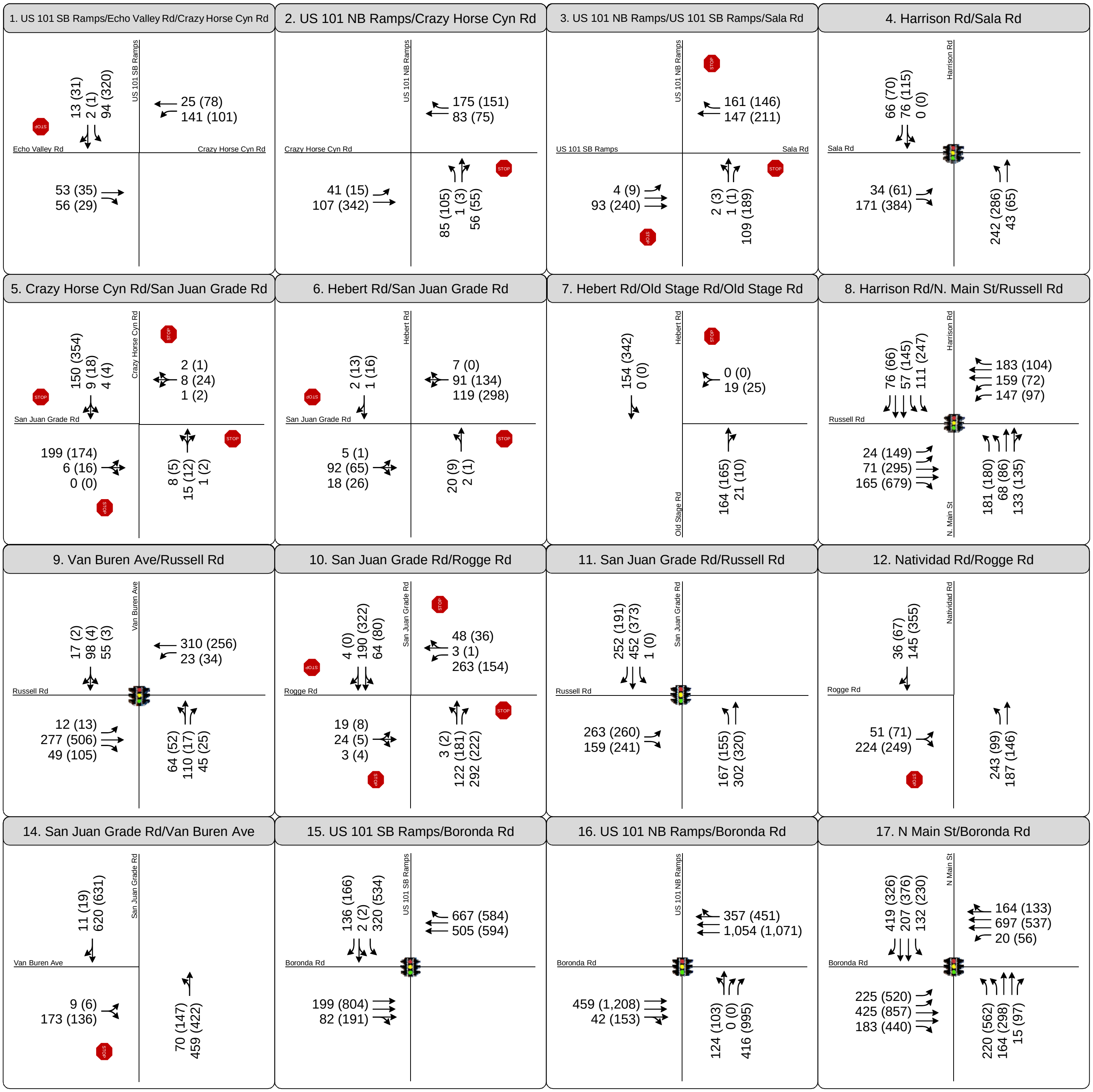

Figure 8a

Existing Peak Hour Traffic Volumes

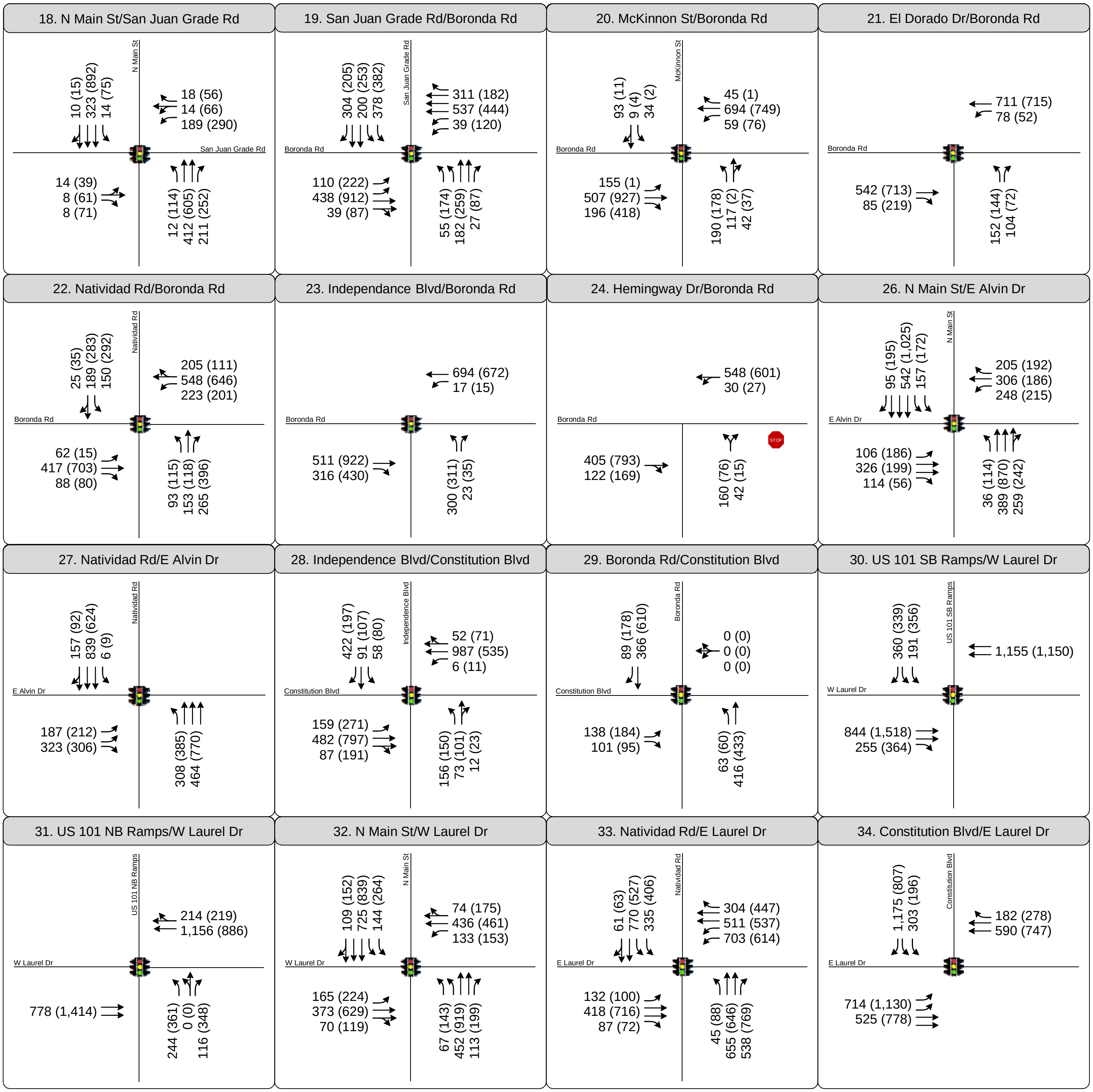

Figure 8b

Existing Peak Hour Traffic Volumes

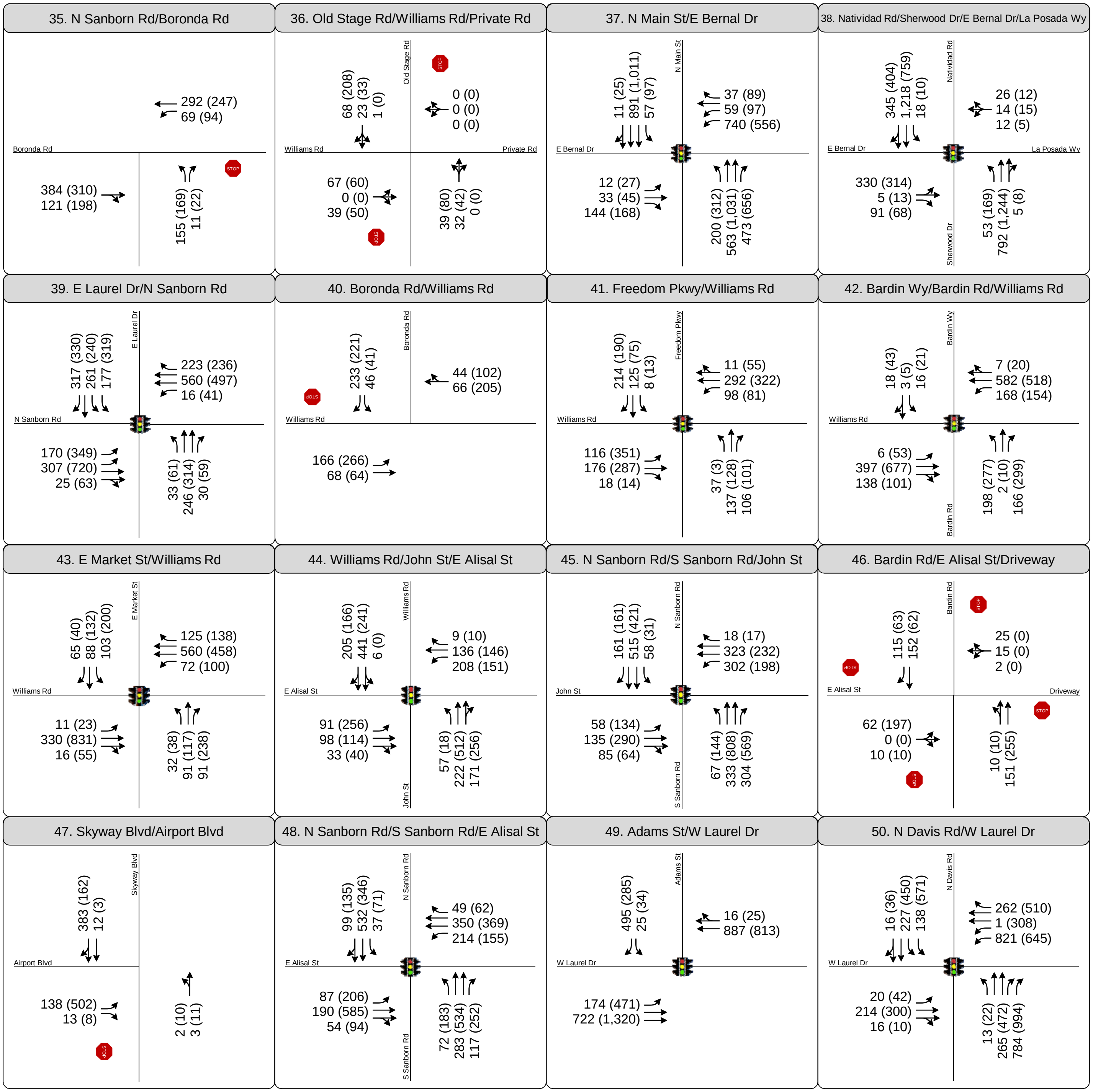

Figure 8c

Existing Peak Hour Traffic Volumes

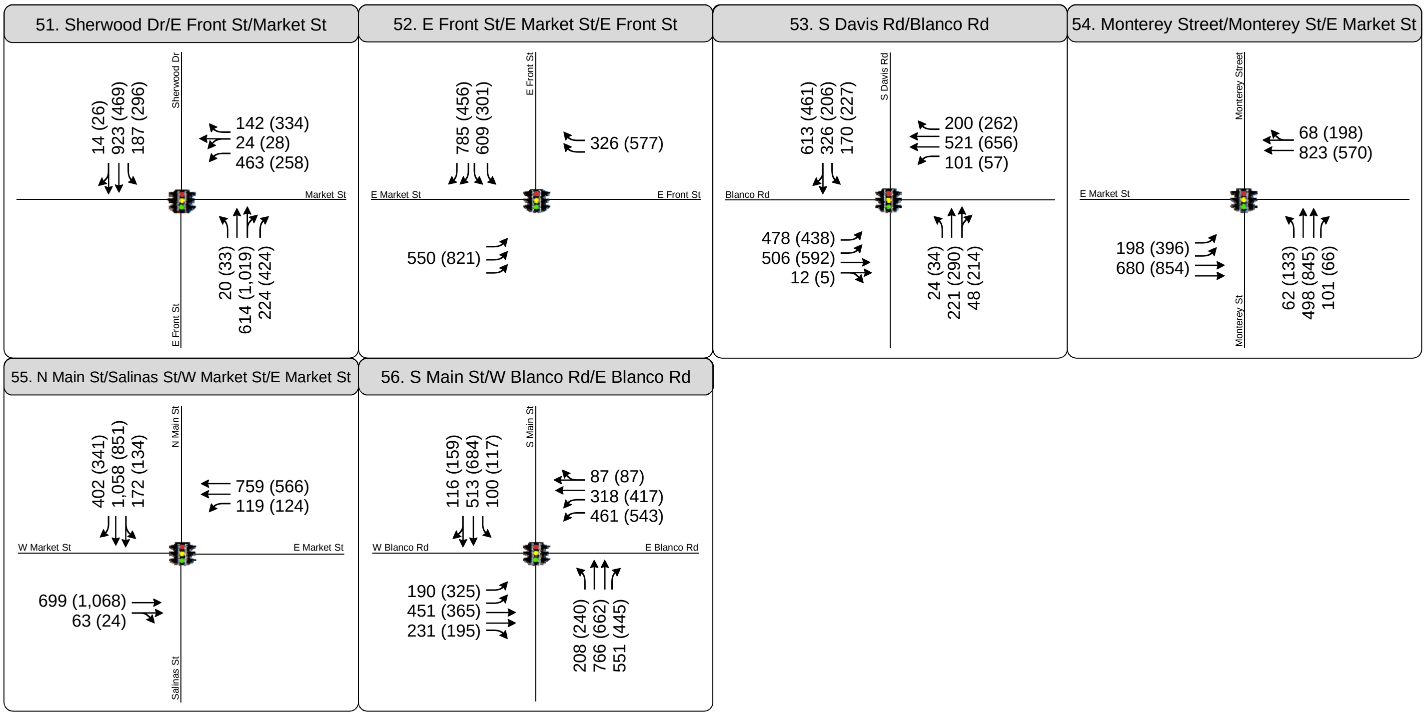

Figure 8d

Existing Peak Hour Traffic Volumes

4.7.2 EXISTING WITH NO PROJECT CONDITIONS FREEWAY MAINLINE CAPACITY ANALYSIS

Traffic volume observations were recorded at ten locations along US 101 by Fehr & Peers in the spring of 2016, during the same period as the intersection turning movement counts. For freeway mainline segments, level of service (LOS) is a function of traffic density and describes the resulting delay experienced by people driving. LOS scores are compared to the minimum operating standards defined by the Monterey County CMP in **Table 5** and **Table 6** below.

TABLE 5: AM EXISTING WITH NO PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	1,949	16.4	B	1,894	15.9	B
Crazy Horse Canyon Road to San Miguel Canyon Road	2,013	16.9	B	1,882	15.8	B
San Miguel Canyon Road to SR 156	2,953	16.5	B	2,406	20.2	C
SR 156 to Sala Road	2,065	17.3	B	1,824	15.3	B
Sala Road to Boronda Road	2,613	14.6	B	1,659	9.3	A
Boronda Road to Laurel Drive	2,924	24.7	C	1,831	15.4	B
Laurel Drive to N. Main Street/SR 183	2,843	24	C	1,726	14.5	B
N. Main Street/SR 183 to E. Market Street	2,858	24.1	C	1,811	15.2	B
SR 68 John Street to S. Sanborn Road	1,934	16.2	B	1,508	12.6	B
S. Sanborn Road to Abbott Street	1,668	14	B	1,526	12.8	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 6: PM EXISTING WITH NO PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,624	22	C	2,188	18.4	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,278	19.1	C	2,208	18.5	C
San Miguel Canyon Road to SR 156	3,061	17.1	B	3,120	26.7	D
SR 156 to Sala Road	2,404	20.2	C	2,456	20.6	C
Sala Road to Boronda Road	2,562	14.3	B	2,453	13.7	B
Boronda Road to Laurel Drive	2,696	24.7	C	3,124	26.7	D
Laurel Drive to N. Main Street/SR 183	2,553	21.4	C	3,300	28.7	D
N. Main Street/SR 183 to E. Market Street	2,638	22.1	C	3,465	30.7	D
SR 68 John Street to S. Sanborn Road	2,039	17.1	B	2,370	19.9	C
S. Sanborn Road to Abbott Street	1,777	14.9	B	2,327	19.5	C

[1] Density Reported in Passenger Cars per Mile Per Lane
Source: Fehr & Peers, 2019

All of the analysis segments operate at or above the minimum level of service standards for highway facilities as set by the CMP, LOS D or better.

4.7.3 EXISTING WITH NO PROJECT CONDITIONS FREEWAY RAMP JUNCTIONS CAPACITY ANALYSIS

The existing operational performance of merging and diverging ramp junctions was analyzed at the Boronda Road and Laurel Street interchanges of US 101. Ramp junction merge and diverge movement level of service results for the northbound and southbound segments, in the morning and evening peak periods, are shown and compared to minimum operational standards in **Table 7** and **Table 8,** below.

TABLE 7: AM EXISTING WITH NO PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	**DR (pc/mi/ln)**	**LOS**	**Ramp Type**	**DR (pc/mi/ln)**	**LOS**
Boronda Road	Loop On-Ramp	25.4	C	Loop On-Ramp	12	B
	On-Ramp	26.4	C	Off-Ramp	20.8	C
West Laurel Drive	Off-Ramp	31.1	D	On-Ramp	18.5	B
	On-Ramp	24.6	C	Loop On-Ramp	15	B
				Off-Ramp	19.5	B

Source: Fehr & Peers, 2019

TABLE 8: PM EXISTING WITH NO PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	**DR (pc/mi/ln)**	**LOS**	**Ramp Type**	**DR (pc/mi/ln)**	**LOS**
Boronda Road	Loop On-Ramp	23.1	C	Loop On-Ramp	19.4	B
	On-Ramp	24.3	C	Off-Ramp	33.5	D
West Laurel Drive	Off-Ramp	28.9	D	On-Ramp	30	D
	On-Ramp	21	C	Loop On-Ramp	26.3	C
				Off-Ramp	34	D

Source: Fehr & Peers, 2019

Currently, all ramp junction merge and diverge movements operate at acceptable levels of service during the morning and evening peak periods.

5.0 PROJECT CONDITIONS

This chapter documents the results of an existing plus project analysis which examines the impact of the Central Area Specific Plan on the transportation network, assuming that full buildout of the plan would occur absent of other growth assumptions that are included in the cumulative scenarios. Additionally, an adjacent project – the West Area Specific Plan – is also described and considered for some scenarios. Project descriptions and trip generation assumptions for both are discussed. The results of this analysis are also presented.

5.1 PROJECT DESCRIPTIONS

In this Transportation Impact Analysis, the Central Area Specific Plan is considered to be the proposed project. However, the West Area Specific Plan (currently under consideration) is considered simultaneously in some existing and future growth scenarios in order to evaluate the impact of the West Area Specific Plan together with the Central Area Specific Plan, as well as the baseline growth assumptions. The next two sections describe each plan in more detail.

5.1.1 CENTRAL AREA SPECIFIC PLAN

The Central Area Specific Plan is approximately 760 acres and shares the boundary of Natividad Road with the West Area Specific Plan. The Central Area Specific Plan is generally bounded by Boronda Road, the future extension of Constitution Boulevard, Old Stage Road, the future Russell Road extension, and Natividad Road.

Like the West Area Specific Plan, the Central Area Specific Plan is also a master-planned community based on New Urbanism principles. The new community proposes a minimum of 3,419 and a maximum of 3,983 new homes and apartments. In addition to the residential uses, approximately 250,000 square feet of retail and office uses may also be built within the Village Center Mixed Use Zone and a portion of the Neighborhood General-2 (NG-2) Zones. Approximately 100,000 square feet of retail or office square footage could be converted to an additional 100 residential units. These residential and commercial uses will be built within the Plan's Residential/Mixed Use Zoning Districts. Approximately 183 net acres of public streets are included in the plan.

Three school sites are proposed within the Central Area Specific Plan on three parcels for a combined 48 acres. They include a middle school (7th grade through 8th grade) on 18 acres, an elementary school (kindergarten through 6th grade) on 12 acres, and another elementary/middle school (kindergarten through

8th grade) on 18 acres. Also proposed are an approximately 22,000 square foot library on 2 acres and a fire station on 1.5 acres.

For the purposes of analysis, the following land use assumptions have been made:

- Residential: full buildout of 3,983 dwelling units
- Mixed Use Commercial: 125,000 square feet of office, 125,000 square feet of retail
- Schools: two elementary schools with 600 students enrolled in each and one middle school with 803 students enrolled
- Other: 50 acres of parks, 30 acres of utilities, 22,000 square feet of libraries

5.1.1.1 Internal Circulation System

The Central Area Specific Plan circulation system will include a roadway network, a pedestrian and bicycle network, and public transit. The Central Area Specific Plan emphasizes ensuring connectivity between uses and on creating a safe and efficient circulation system that complies with City of Salinas policies. These design principles put an emphasis on facilitating increased daily pedestrian and bicycle trips by connecting residences in a safe and convenient grid system to public transit, public facilities, parks and neighborhoods, and to retail and employment opportunities. The proposed traditional neighborhood grid street layout provides for shorter walking/bicycling distances than the “modern” walled neighborhoods with limited access points.

The circulation system is designed to link with existing city and regional transit, street, bike and pedestrian systems, as well as the other planned developments for the other Future Growth Areas, the East Area and West Area Specific Plan Areas.

The proposed vehicular circulation plan aims to slow traffic within the neighborhoods while still allowing convenient and safe access to the new neighborhoods, as well as good linkages between the new neighborhood and the existing City. The Central Area Specific Plan emphasizes facilitating increased daily pedestrian trips by connecting residential neighborhoods to public facilities such as schools and parks, and to employment areas.

The overriding concept of the “walkable neighborhood” suggests that the safe movement of pedestrians is critical. Visitors, workers and residents may arrive in the neighborhood by vehicles, but they quickly enter the realm of the pedestrian, who moves no more than four miles per hour. Although the street design focus must be on the pedestrian and bike, many types of transportation are accommodated and brought into balance within the proposed neighborhood streetscape. Limited lane widths, two-way traffic, on-street parking, tighter curb radii, narrow street crossings (bulb outs), speed tables (flat-topped speed bumps for traffic calming), small scale roundabouts, added stop signs, ample sidewalks, wide landscaped parks strips, and the promenade with homes and businesses facing the street, and minimizing driveways in front (which interrupt the sidewalk and result in cars parked in the front setback). These are all key elements of a walkable, pedestrian-first strategy. These standards will be established in the right-of-way's of the Specific Plan Area in order to balance out its use by drivers, bicyclists and pedestrians. In the transition between Village Center and Neighborhood Edge, the ingredients of the street design vary by location to generate a quality of place and a character that varies from place to place within the neighborhood.

5.1.1.2 Pedestrian Circulation

The Central Area Specific Plan endeavors to encourage a walkable community by providing accessible and safe movement of pedestrians within the Specific Plan Area with access to the surrounding neighborhoods. Sidewalks will be provided along both sides of all internal streets, but not alleyways. Walkways through commercial areas will also extend the path of travel from sidewalks to access on-site destinations. ADA accessibility will be maintained through pedestrian path of travel and connections. Design of the Village Center will accommodate pedestrian circulation with 15-foot wide sidewalks and safe access routes to all proposed parking areas. Pedestrians will be able to access all buildings and uses within the Specific Plan Area. Sidewalks will be a minimum of five feet wide in residential areas and eight feet wide along school and park frontages.

The Central Area Specific Plan will have a fully landscaped greenway (The Promenade) running along the entire length of the Southerly Greenway Street (from east to west). The Promenade will have a 12 to 14-foot wide Class I concrete pedestrian/bicycle route connecting the East and West Future Growth Areas through the Specific Plan Area.

5.1.1.3 Bicycle Circulation

The existing bicycle network in Salinas consists of Class I, II and III bikeways, which cover significant portions of north, south and east Salinas. A Class I bike path currently exists adjacent to Natividad Creek and under the PG&E tower lines adjacent to Hemingway Drive. As part of the proposed project, this Class I bike path is planned to be extended into the Specific Plan Area. Class II bike lanes currently exist and are planned to be extended around the Specific Plan Area on East Boronda Road, Constitution Boulevard, Independence Boulevard, Hemingway Drive, Natividad Road, Russell Road, and Old Stage Roads.

The Central Area Specific Plan would encourage the use of alternative modes of transportation by incorporating bicycle and pedestrian friendly designs through an integrated system of roads, footpaths and bikeways. At buildout, bike lanes in the east-west direction are planned to be provided along both sides of the future Russell Road, Old Stage Road, and on the north side of the Southerly Greenway Promenade and along the north side of East Boronda Road. In the north-south direction, bike lanes are planned to be provided along Natividad Road, both creeks, and Constitution Boulevard.

5.1.2 WEST AREA SPECIFIC PLAN

The West Area Specific Plan encompasses approximately 797 acres. It is relatively flat land bounded by the future Russell Road and Rogge Road extensions to the north, Natividad Road to the east, Boronda Road to the south, and San Juan Grade Road to the west. Regional access to the site is provided by State Route 101, located 0.5 mile west of the project site, and by Boronda Road, which connects to State Route 101 and forms the south boundary of the West Area Specific Plan. In the southwest portion of the site is the existing McKinnon Elementary School, which is surrounded by agricultural fields and is not a part of the project. Two small clusters of buildings supporting the agricultural operations are located on the project site. A new high school is under construction in the northwest portion of the site.

The West Area Specific Plan will guide the development of a master-planned community consisting of approximately 4,340 residential units in four residential neighborhoods and a minimum of 91 residential units within the Village Center. The overall average residential density within the Specific Plan area must equal or exceed 9 dwelling units per net residential developable acre (4,340 units). In addition, approximately 571,500 square feet of mixed use residential and commercial development is also proposed within the Village Center area, and a maximum of 250,000 square feet of the mixed use commercial square footage could be converted to residential units. Also proposed (all acreages are approximate) is a 30-acre community park, four neighborhood parks totaling 12 acres, six small parks totaling six acres, 35 acres of open space/supplemental detention and retention basins, a 1.5 acres of water well/treatment facilities, three elementary schools on a combined 31 acres, a middle school on 21 acres, and a high school on 39 acres. The mixed used development in the Village Center could include a grocery store, shops, restaurants, offices and residential units.

For the purposes of this analysis, the following assumptions were made regarding school enrollment in the West Area Specific Plan:

- There will be 600 students enrolled in each of the three elementary schools, totaling 1,800 students.
- The middle school will contain the average California enrollment of 803 students.
- The High School is projected to have 1,534 students and a commensurate number of staff

The new schools are expected to primarily serve students living in the project area and/or areas immediately surrounding.

5.1.3 TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project might add to the local roadway network. Using available data, the expected level of vehicle trip generation during the peak one-hour periods during the morning (AM) and evening (PM) peak hours, when traffic volumes on adjacent streets are typically at their highest, was calculated.

Fehr & Peers' trip generation tool, MainStreet, was used to estimate trip generation for this project. The MainStreet application combines Institute of Transportation Engineers (ITE) methods and Big Data to provide a more robust analysis platform as an alternative to using only the ITE Trip Generation Manual, a more traditional analysis method. The Trip Generation manual contains data primarily collected at suburban, single-use, freestanding sites, which can overestimate vehicle trip generation. This is due to an inability of traditional tools to accurately reflect the amount of internal trip linking or the level of trips made by transit, biking, and/or walking. This can result in increased development costs due to oversized infrastructure and skewed perceptions of likely impacts. MainStreet begins with ITE trip generation estimates, but then adjusts those estimates to account for internal trips. MainStreet also recognizes that traffic generation relates closely to the density, diversity, design, destination accessibility, transit proximity, and scale of development, providing a more accurate and realistic trip generation estimate. Because the proposed project intends to use new urbanist design principles that include mixed use development, the MainStreet tool is more appropriate than trip generation rates which strictly rely on the ITE methodology.

The genesis of the MainStreet tool was a US Environmental Protection Agency (EPA) sponsored national study of the trip generation characteristics of multi-use sites. Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions, and correlated with the characteristics of the sites and their surroundings. The findings indicate that the amount of external traffic generated is affected by a wide variety of factors including the mix of employment and residents, the overall size and density of the development, the internal connectivity for walking or driving among land uses, the availability of transit service, and the surrounding trip destinations within the immediate area outside the Project site.

These characteristics were related statistically to trip behavior observed at the study development sites using statistical techniques. These statistical relationships produced equations, known as the EPA MXD model, that allows predicting external vehicle trip reduction as a function of the MXD characteristics. Applying the external vehicle trip reduction percentage to "raw trips", as predicted by ITE, produces an estimate for the number of vehicle trips traveling in or out of the site.

The MXD model has been approved for use by the EPA[3]. It has also been peer-reviewed in the ASCE Journal of Urban Planning and Development[4], peer-reviewed in a 2012 TRB paper evaluating various smart growth trip generation methodologies[5], recommended by SANDAG for use on mixed-use smart growth developments[6], promoted in an American Planning Association (APA) Planning Advisory Service (PAS)[7] which recommended it for evaluating traffic generation of mixed-use and other forms of smart growth, including in-fill and transit oriented development, It has also been used successfully in numerous certified EIRs in California.

Trip generation estimates for the Central Area Specific Plan are presented below in **Table 9**. Trip generation estimates for the West Area Specific Plan are presented in **Table 10.**

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[3] Trip Generation Tool for Mixed-Use Developments (2012). www.epa.gov/dced/mxd_tripgeneration.html

[4] "Traffic Generated by Mixed-Use Developments—Six-Region Study Using Consistent Built Environmental Measures." Journal of Urban Planning and Development, 137(3), 248–261.

[5] Shafizadeh, Kevan et al. "Evaluation of the Operation and Accuracy of Available Smart Growth Trip Generation Methodologies for Use in California". Presented at 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

[6] SANDAG Smart Growth Trip Generation and Parking Study. http://www.sandag.org/index.asp?projectid=378&fuseaction=projects.detail

[7] Walters, Jerry et al. "Getting Trip Generation Right – Eliminating the Bias Against Mixed Use Development". American Planning Association. May 2013.

TABLE 9: CENTRAL AREA SPECIFIC PLAN TRIP GENERATION

Land Use	Units	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
Elementary School	Students	1,200	1,548	297	243	540	88	92	180
Middle School	Students	803	1301	239	195	434	63	65	128
High School	Students	1,481	2533	433	204	637	91	102	193
General Office Building	1000 sq ft gross floor area	125	1379	172	23	195	32	154	186
Supermarket	1000 sq ft gross floor area	25	2556	53	32	85	121	116	237
Shopping Center	1000 sq ft gross floor area	200	8,540	119	73	192	356	386	742
Single-Family Detached Housing	Dwelling Units	1,200	11,424	225	675	900	756	444	1,200
Condominium	Dwelling Units	2,700	15,687	202	986	1,188	941	463	1,404
Apartment	Dwelling Units	83	552	8	34	42	33	18	51
Library	1000 sq ft gross floor area	22	1237	16	7	23	77	84	161
City Park	Acres	50	76	101	79	180	80	60	140
Utilities	Acres	30	N/A	47	28	75	18	22	40
Net Raw Project Trips			46,833	1,912	2,579	4,491	2,656	2,006	4,662
Internal Capture			-4,028	-329	-444	-772	-494	-373	-867
External Walk, Bike, and Transit			-983	-69	-93	-162	-93	-70	-163
Total Reductions			-5,011	-398	-536	-934	-587	-443	-1,030
Net New Project Trips			**41,822**	**1,514**	**2,043**	**3,557**	**2,069**	**1,563**	**3,632**

Source: Fehr & Peers, 2019, ITE Trip Generation Manual, Ninth Edition
Notes: See Appendix A for trip generation rate assumptions.

TABLE 10: WEST AREA SPECIFIC PLAN TRIP GENERATION

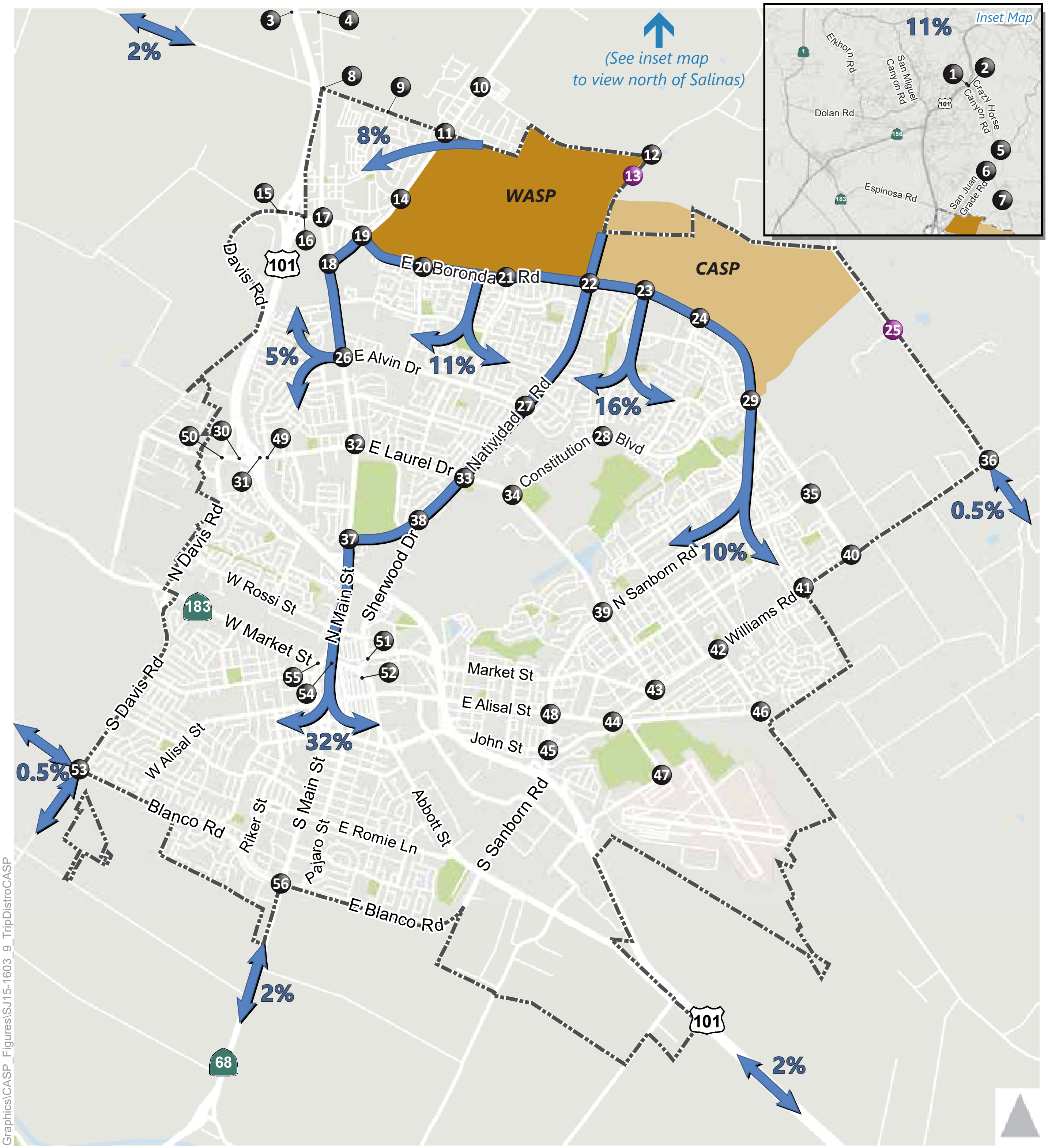
Land Use	Units	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
Elementary School	Students	1,800	2,322	446	365	810	132	138	270
Middle School	Students	803	1,301	239	195	434	63	65	128
High School	Students	1,534	2,623	449	211	660	94	105	199
General Office Building	1000 sq ft gross floor area	143	1,576	224	31	255	40	198	238
Supermarket	1000 sq ft gross floor area	57	5,828	120	74	194	275	265	540
Shopping Center	1000 sq ft gross floor area	371	15,862	221	136	357	661	717	1,378
Single-Family Detached Housing	Dwelling Units	1,361	12,957	241	722	962	857	504	1,361
Condominium/ Townhouse	Dwelling Units	2,888	16,779	129	632	761	635	313	948
Apartment	Dwelling Units	91	605	9	37	46	44	24	68
City Park	Acres	50	94	125	99	224	99	75	174
Utilities	Acres	37		57	34	91	22	26	48
Net Raw Project Trips			*59,947*	*2,260*	*2,536*	*4,794*	*2,922*	*2,430*	*5,352*
Internal Capture			*-5,455*	*-348*	*-391*	*-738*	*-593*	*-493*	*-1,086*
External Walk, Bike, and Transit			*-2,398*	*-136*	*-152*	*-288*	*-143*	*-119*	*-262*
Total Reductions			*-7,853*	*-484*	*-543*	*-1,026*	*-736*	*-612*	*-1,349*
Net New Project Trips			**52,094**	**1,776**	**1,993**	**3,768**	**2,186**	**1,818**	**4,003**

Source: Fehr & Peers, 2019, ITE Trip Generation Manual, Ninth Edition
Notes: See Appendix B for West Area Specific Plan trip generation rate assumptions.

5.1.4 TRIP DISTRIBUTION

New traffic generated by the Central Area Specific Plan and the West Area Specific Plan was distributed through the roadway network using a trip distribution pattern developed using the City of Salinas Travel

Demand Model. The distribution used for Central Area Specific Plan-related traffic is shown on **Figure 9.** **Figure 10** illustrates the assignment of project generated trips to the study intersections.



Source: City of Salinas

Legend

Study Intersection · Future Study Intersection · XX% Trip Distribution Percentage

West Area Specific Plan (WASP) · Central Area Specific Plan (CASP) · City Limits

Figure 9

Project Trip Distribution (CASP)

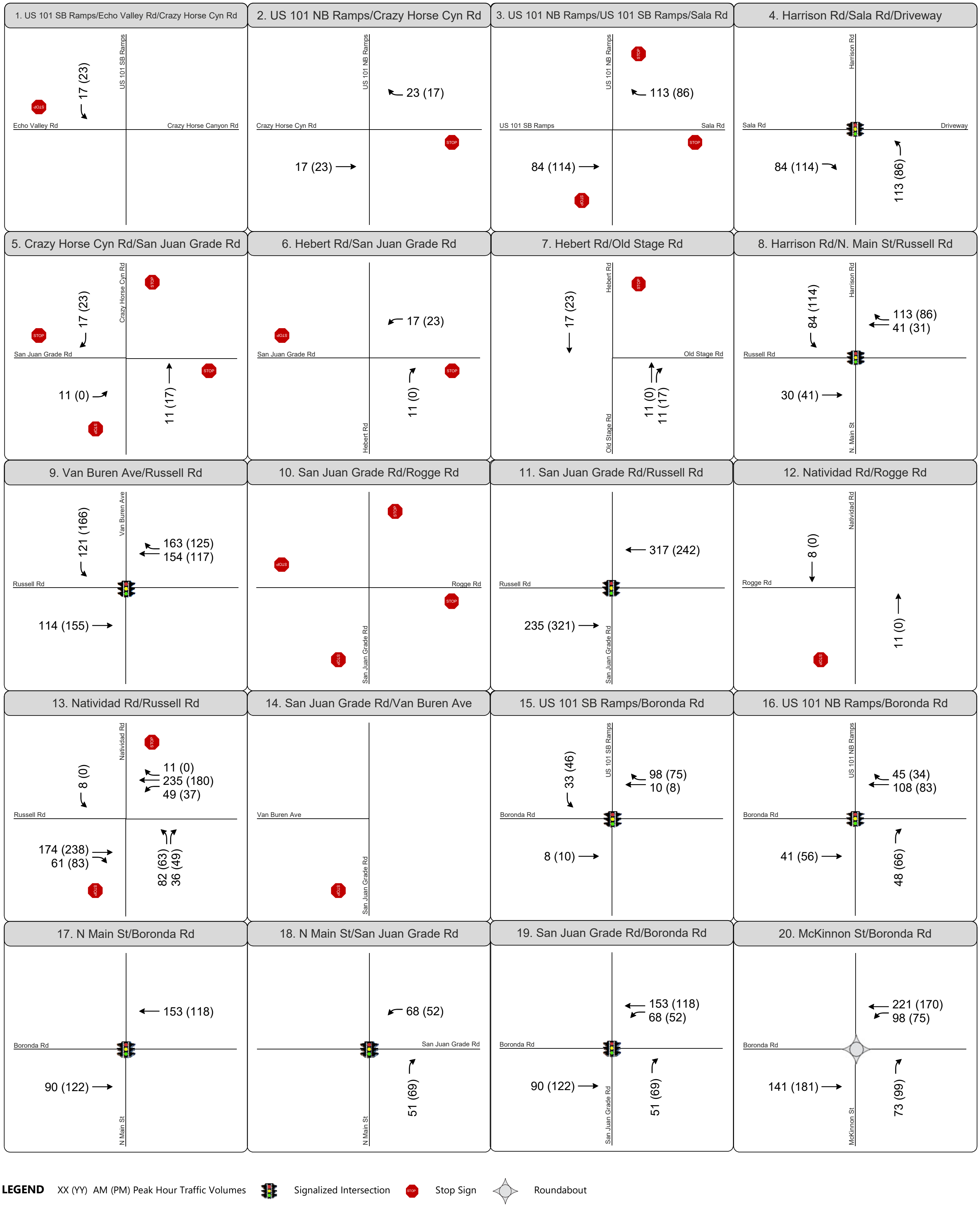
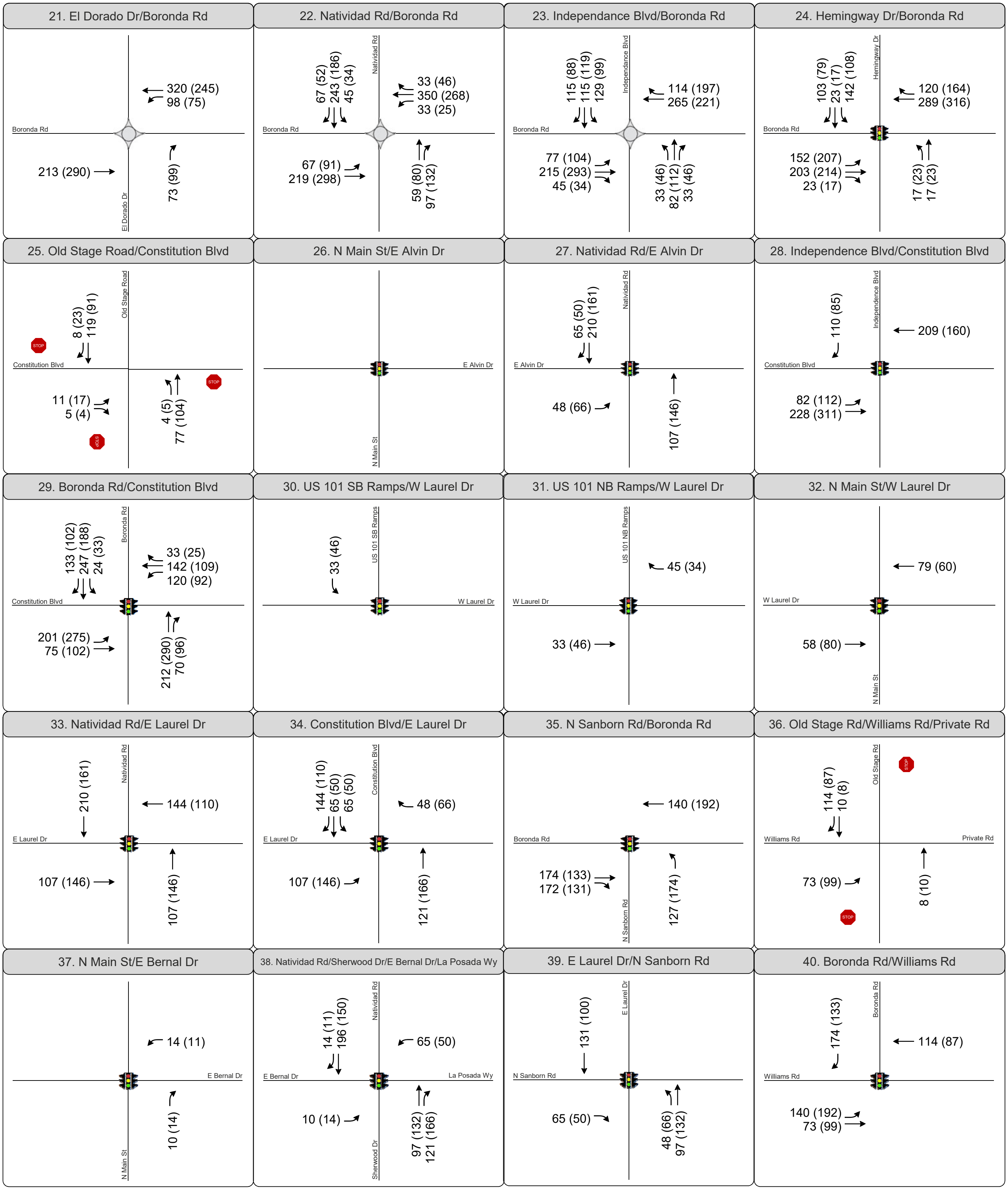


Figure 10a

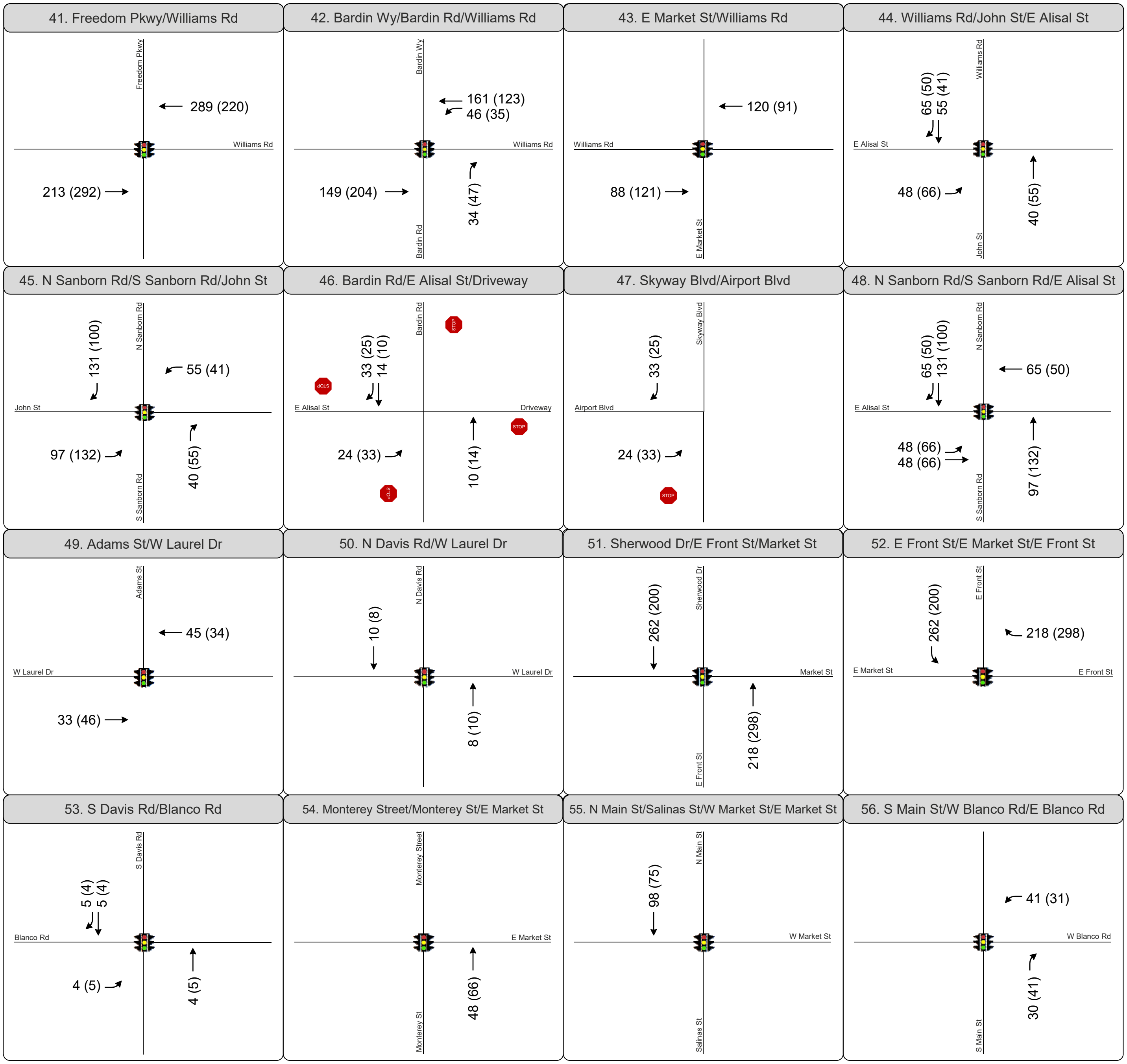
Project Trip Assignment (CASP)



LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Roundabout

Figure 10b

Project Trip Assignment (CASP)



LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Roundabout

Figure 10c

Project Trip Assignment (CASP)

5.2 PROJECT CONDITIONS NETWORK CHANGES

A number of changes to the network under the project conditions scenarios were assumed. The assumptions are detailed below.

5.2.1 EXISTING PLUS PROJECT NETWORK ASSUMPTIONS

- Widen Boronda Road to 4 lanes from San Juan Grade to Constitution Boulevard
    - Boronda Road & McKinnon Street – 2 lane roundabout
    - Boronda Road & El Dorado Drive – 2 lane roundabout
    - Boronda Road & Natividad Road – 3 lane roundabout
    - Boronda Road & Independence Boulevard – 2 lane roundabout
- Widen Russell Road to 4 lanes from San Juan Grade to Natividad Road (new road)
- Widen Natividad Road to 4 lanes from Boronda to Rogge Road
- Widen Old Stage Road to 4 lanes from Russell Road to Constitution Boulevard
- Extend the following roadways north of East Boronda Road: El Dorado Drive, Independence Boulevard, and Hemingway Drive (new road)
- The Hemingway Drive & Boronda Road intersection is evaluated as a signalized intersection with all movements permitted; however, a roundabout could be provided at this location that would provide a similar capacity and level of service.
- Extend Constitution Boulevard as 4-lane arterial to Old Stage Road (new road)
- The following intersections where the Central Area Specific Plan's internal roadways intersect with the City's roadway network were assumed to be full access intersections (i.e. movements are permitted in all directions): Natividad Road & Southernly Greenway, Natividad Road & Northernly Greenway, Constitution Boulevard & Southernly Greenway, Constitution Boulevard & Northernly Greenway, Independence Boulevard & Russell Road, Road C-5 & Russell Road and Northerly Greenway & Russell Road.
- The following intersections on Boronda Road would also be provided with the allowable movements as noted below:
    - Right in/Right out only – Commercial access between Independence Boulevard and Natividad Road;
    - Right in/Right out only – Access between Road AC and Hemingway Drive; and
    - Right in/Right out/Left in only – Road AC and Boronda.

5.3 EXISTING PLUS PROJECT CONDITIONS ANALYSIS

5.3.1 EXISTING PLUS PROJECT CONDITIONS INTERSECTION OPERATION ANALYSIS

Vehicle volumes associated with the proposed project were distributed across the existing transportation network, resulting in the volumes shown in **Table 11** below. These volumes reflect the anticipated impacts that the proposed project would have today, all other things being equal. Intersections that experience significant impacts in either the morning or evening peak period are shown in bold.

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	7.4 (15)	A (C)	12.1 (17.9)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	3.2 (11.1)	A (B)	2.8 (12.7)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	9.6	A	11.2	B
4	Harrison Road/Sala Road/Driveway	Signal	9	A	10	A
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	9.5	A	11.8	B
6	Hebert Road/San Juan Grade Road	SSSC	6.1 (11.5)	A (B)	7.4 (23.7)	A (C)
7	Old Stage/Hebert Road	SSSC	0.6 (12.2)	A (B)	0.6 (14.1)	A (B)
8	North Main Street/Harrison Road/Russell Road	Signal	17.4	B	23.5	C
9	Van Buren Avenue/Russell Road	Signal	24.5	C	15.6	B
10	San Juan Grade Road/Rogge Road	AWSC	17.4	C	13.4	B
11	San Juan Grade Road/Russell Road	Signal	30.5	C	24.5	C

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
12	Natividad Road/Rogge Road	SSSC	5.7 (10.7)	A (B)	5.2 (12.6)	A (B)
13	Natividad Road/Russell Road	SSSC	0.1 (7.3)	A (A)	0.1 (7.3)	A (A)
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.6 (29.8)	A (D)	3.1 (19.4)	A (C)
15	US 101 Southbound Ramps/Boronda Road	Signal	6.2	A	7.5	A
16	US 101 Northbound Ramps/Boronda Road	Signal	8.2	A	19.3	B
17	North Main Street/Boronda Road	Signal	47.1	D	47.9	D
18	North Main Street/San Juan Grade Road	Signal	12.2	B	23.7	C
19	San Juan Grade Road/Boronda Road	Signal	39.6	D	46.3	D
20	McKinnon Street/Boronda Road	Roundabout	5.8	A	5.7	A
21	El Dorado Drive/Boronda Road	Roundabout	7.8	A	7.0	A
22	Natividad Road/Boronda Road	Roundabout	6.3	A	6.8	A
23	Independence Boulevard/Boronda Road	Roundabout	5.3	A	5.6	A
24	Hemingway Drive/Boronda Road	Signal	33	C	22.4	C
25	Old Stage Road/Constitution Boulevard	AWSC	7.8	A	7.8	A
26	North Main Street/East Alvin Drive	Signal	41	D	40.8	D
27	Natividad Road/East Alvin Drive	Signal	17.1	B	16.9	B
28	Independence Boulevard/Constitution Boulevard	Signal	34.2	C	26.5	C
29	Boronda Road/Constitution Boulevard	Signal	31.4	C	32.7	C
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.6	A	11.9	B

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.6	A	12.4	B
32	**North Main Street/West Laurel Drive**	**Signal**	40	D	**57.4**	**E**
33	**Natividad Road/East Laurel Drive**	**Signal**	**65**	**E**	**61**	**E**
34	Constitution Boulevard/East Laurel Drive	Signal	21.1	C	28.4	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
36	Old Stage Road/Williams Road/Private Road	SSSC	6 (13.2)	A (B)	7.1 (18.2)	A (C)
37	North Main Street/East Bernal Drive	Signal	45.5	D	40.4	D
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**57.2**	**E**	**73.9**	**E**
39	East Laurel Drive/North Sanborn Road	Signal	26.4	C	32.3	C
40	Williams Road/Boronda Road	SSSC	12.2 (23)	B (C)	13.6 (34.2)	B (D)
41	Freedom Pkwy/Williams Road	Signal	24.9	C	32.7	C
42	Bardin Road/Bardin Way/Williams Road	Signal	21.9	C	25.5	C
43	East Market Street/Williams Road	Signal	20.4	C	30.9	C
44	John Street/Williams Road/E Alisal Street	Signal	12.9	B	14.8	B
45	**South Sanborn Road/North Sanborn Road/John Street**	**Signal**	**73**	**E**	44.7	D
46	Bardin Road/East Alisal Street/Driveway	AWSC	10.8	B	10.5	B
47	Skyway Boulevard/Airport Boulevard	SSSC	2.8 (9.6)	A (A)	11.5 (15.9)	B (C)

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.6	C	39.4	D
49	West Laurel Drive/Adams Street	Signal	13.2	B	17.7	B
50	North Davis Road/West Laurel Drive	Signal	26	C	43.7	D
51	East Front Street/Sherwood Drive/Market Street	Signal	12.3	B	15.7	B
52	East Market Street/East Front Street	Signal	9.1	A	10.2	B
53	South Davis Road/Blanco Road	Signal	38.7	D	46.2	D
54	Monterey Street/Monterey Street/East Market Street	Signal	17.9	B	25.7	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	32.9	C	30.9	C
56	South Main Street/West Blanco Road/East Blanco Road	Signal	39.2	D	42.3	D

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, five intersections experience failing LOS scores in the morning and/or peak period in the Existing Plus Project conditions scenario.

These constitute significant impacts, mitigations for which are discussed in depth in the Impacts and Mitigations chapter at the end of this report.

5.3.2 EXISTING PLUS PROJECT CONDITIONS FREEWAY CAPACITY ANALYSIS

Table 12 and **Table 13** show the results of the freeway mainline capacity analysis for US 101 in the Existing Plus Project Condition in the morning and evening peak hour, respectively.

TABLE 12: AM EXISTING PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,119	17.8	C	2,114	17.7	B
Crazy Horse Canyon Road to San Miguel Canyon Road	2,183	18.3	C	2,102	17.6	B
San Miguel Canyon Road to SR 156	3,123	17.5	B	2,626	22.0	C
SR 156 to Sala Road	2,235	18.8	C	2,044	17.1	B
Sala Road to Boronda Road	2,633	14.7	B	1,809	10.1	A
Boronda Road to Laurel Drive	2,944	25.3	C	1,981	16.6	B
Laurel Drive to N. Main Street/SR 183	2,983	25.3	C	1,876	15.7	B
N. Main Street/SR 183 to E. Market Street	2,898	24.5	C	1,841	15.4	B
SR 68 John Street to S. Sanborn Road	1,974	16.6	B	1,538	12.9	B
S. Sanborn Road to Abbott Street	1,708	14.3	B	1,556	13.0	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 13: PM EXISTING PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,854	24.1	C	2,358	19.8	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,508	21.0	C	2,378	20.0	C
San Miguel Canyon Road to SR 156	3,291	18.4	C	3,290	28.6	D
SR 156 to Sala Road	2,634	22.1	C	2,626	22.0	C
Sala Road to Boronda Road	2,582	14.4	B	2,613	14.6	B
Boronda Road to Laurel Drive	2,716	22.8	C	3,284	28.5	D

TABLE 13: PM EXISTING PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
Laurel Drive to N. Main Street/SR 183	2,683	22.4	C	3,460	30.6	D
N. Main Street/SR 183 to E. Market Street	2,668	22.4	C	3,505	31.2	D
SR 68 John Street to S. Sanborn Road	2,069	17.4	B	2,410	20.2	C
S. Sanborn Road to Abbott Street	1,807	15.2	B	2,367	19.9	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

All study segments of US 101 analyzed perform within the County CMP standards.

5.3.3 EXISTING PLUS PROJECT CONDITIONS RAMP JUNCTION CAPACITY ANALYSIS

Two interchanges on US 101 in Salinas were analyzed to identify the performance of ramp junctions. The results of this analysis for the Existing Plus Project scenario during the morning and evening peak periods are shown in **Table 14** and **Table 15,** respectively.

TABLE 14: AM EXISTING PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	25.5	C	Loop On-Ramp	13.2	B
	On-Ramp	26.6	C	Off-Ramp	22.3	C
West Laurel Drive	Off-Ramp	31.3	D	On-Ramp	19.8	B
	On-Ramp	24.8	C	Loop On-Ramp	16.3	B
				Off-Ramp	16.5	B

Source: Fehr & Peers, 2019

TABLE 15: PM EXISTING PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	22.6	C	Loop On-Ramp	20.7	C
	On-Ramp	24.5	C	**Off-Ramp**	**35.1**	**E**
West Laurel Drive	Off-Ramp	29.1	D	On-Ramp	31.4	D
	On-Ramp	21.2	C	Loop On-Ramp	27.8	C
				Off-Ramp	**35.6**	**E**

Source: Fehr & Peers, 2019

The US 101 Northbound Off-ramp at East Boronda Road and East Laurel Avenue perform at LOS E in the evening peak period, which is below standards set by the County CMP.

5.4 EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN CONDITIONS

The Existing Plus Project and West Area Specific Plan Conditions Scenario incorporates the combined effect of the Central Area Specific Plan and the West Area Specific Plan on the local transportation network. Because the projects are adjacent to each other, it can be assumed that they will have a combined influence on the nearby transportation network once they are both complete. As such, that impact is analyzed in this section.

5.4.1 EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN CONDITIONS INTERSECTION LEVEL OF SERVICE

The expected trip generation for the Central Area Specific Plan and the West Area Specific Plan were overlaid on the existing conditions on the local transportation network. The magnitude of this effect on study intersections is documented by **Table 16** below.

TABLE 16: EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	8.8 (17.8)	A (C)	14.3 (21.7)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	2.8 (12.9)	A (B)	2.6 (14.4)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	11.3	B	12.9	B
4	Harrison Road/Sala Road/Driveway	Signal	9.5	A	10.7	B
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	11	B	14.6	B
6	Hebert Road/San Juan Grade Road	SSSC	5.9 (12.5)	A (B)	7.4 (26.8)	A (D)
7	Old Stage Road/Hebert Road	SSSC	1.1 (12.9)	A (B)	1.2 (15.1)	A (C)

TABLE 16: EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
8	North Main Street/Harrison Road/Russell Road	Signal	17.5	B	24.9	C
9	Van Buren Avenue/Russell Road	Signal	36.7	D	15.4	B
10	San Juan Grade Road/Rogge Road	AWSC	19	C	15.5	C
11	San Juan Grade Road/Russell Road	Signal	44.1	D	35.4	D
12	Natividad Road/Rogge Road	SSSC	8.2 (18.0)	A (C)	6.0 (14.0)	A (B)
13	Natividad Road/Russell Road	SSSC	10.6 (16.3)	B (C)	12.2 (24.4)	B (C)
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**80.7 (>150)**	**F (F)**	**129.3 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	6.6	A	8	A
16	US 101 Northbound Ramps/Boronda Road	Signal	10.9	B	26	C
17	**North Main Street/Boronda Road**	Signal	46.2	D	**62.9**	**E**
18	North Main Street/San Juan Grade Road	Signal	14.8	B	28.3	C
19	**San Juan Grade Road/Boronda Road**	**Signal**	44.4	D	**88.1**	**F**
20	McKinnon Street/Boronda Road	Roundabout	9.8	A	9.5	A
21	El Dorado Drive/Boronda Road	Roundabout	21.8	C	15.4	C
22	Natividad Road/Boronda Road	Roundabout	20.2	C	22.6	C
23	Independence Boulevard/Boronda Road	Roundabout	8.4	A	9.8	A
24	Hemingway Drive/Boronda Road	Signal	37.8	D	29.4	C
25	Old Stage Road/Constitution Boulevard	AWSC	7.8	A	7.8	A
26	North Main Street/East Alvin Drive	Signal	42	D	43.9	D
27	Natividad Road/East Alvin Drive	Signal	23.5	C	19.2	B

TABLE 16: EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
28	Independence Boulevard/Constitution Boulevard	Signal	36.9	D	28.5	C
29	Boronda Road/Constitution Boulevard	Signal	36.2	D	39.4	D
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.6	A	12	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.7	A	12.9	B
32	**North Main Street/West Laurel Drive**	**Signal**	39.8	D	**72.1**	**E**
33	**Natividad Road/East Laurel Drive**	**Signal**	**106.7**	**F**	**90.1**	**F**
34	Constitution Boulevard/East Laurel Drive	Signal	21.2	C	28.6	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
36	Old Stage Road/Williams Road/Private Road	SSSC	6.4 (13.7)	A (B)	7.7 (19.4)	A (C)
37	North Main Street/East Bernal Drive	Signal	46.7	D	41.7	D
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**116**	**F**	**93**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	26.7	C	32.7	C
40	**Williams Road/Boronda Road**	**SSSC**	**15.8 (64.2)**	**B (F)**	**21.0 (>150)**	**C (F)**
41	Freedom Pkwy/Williams Road	Signal	26.4	C	34.9	C
42	Bardin Road/Bardin Way/Williams Road	Signal	22.6	C	26.6	C
43	East Market Street/Williams Road	Signal	20.7	C	31.6	C
44	John Street/Williams Road/E Alisal Street	Signal	13	B	14.8	B
45	South Sanborn Road/North Sanborn Road/John Street	Signal	73.5	E	45	D
46	Bardin Road/East Alisal Street/Driveway	AWSC	11	B	10.6	B

TABLE 16: EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
47	Skyway Boulevard/Airport Boulevard	SSSC	2.8 (10.0)	A (B)	12.3 (17.6)	B (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.8	C	39.6	D
49	West Laurel Drive/Adams Street	Signal	13.3	B	18.2	B
50	North Davis Road/West Laurel Drive	Signal	26.2	C	44	D
51	East Front Street/Sherwood Drive/Market Street	Signal	16.6	B	32.7	C
52	East Market Street/East Front Street	Signal	10	B	12.5	B
53	South Davis Road/Blanco Road	Signal	39.1	D	46.9	D
54	Monterey Street/Monterey Street/East Market Street	Signal	22.6	C	29.3	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**95**	**F**	**62.7**	**E**
56	South Main Street/West Blanco Road/East Blanco Road	Signal	40.1	D	43.3	D

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Nine intersections were found to operate below local minimum service standards in either the morning or evening peak period. More intersections fail in the Existing plus Project and West Area Specific Plan Scenario due to the increased volumes of trips associated with the West Area Specific Plan.

5.4.2 EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN CONDITIONS FREEWAY CAPACITY ANALYSIS

Table 17 and **Table 18** document the findings of a capacity analysis focused on the US 101 study segments through Salinas in the Existing Plus Project and West Area Specific Plan Conditions scenario for the morning and evening peak periods, respectively.

TABLE 17: AM EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,319	19.4	C	2,334	19.6	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,383	20.0	C	2,322	19.5	C
San Miguel Canyon Road to SR 156	3,323	18.6	C	2,864	24.0	C
SR 156 to Sala Road	2,435	20.4	C	2,264	19.0	C
Sala Road to Boronda Road	2,713	15.2	B	2,101	11.8	B
Boronda Road to Laurel Drive	3,024	25.7	C	2,141	18.0	B
Laurel Drive to N. Main Street/SR 183	3,123	26.7	D	2,036	17.1	B
N. Main Street/SR 183 to E. Market Street	2,938	24.9	C	1,881	15.8	B
SR 68 John Street to S. Sanborn Road	2,014	16.9	B	1,578	13.2	B
S. Sanborn Road to Abbott Street	1,748	14.7	B	1,596	13.4	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 18: PM EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,094	26.4	D	2,558	21.6	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,748	23.1	C	2,578	21.6	C
San Miguel Canyon Road to SR 156	3,531	19.7	C	3,490	31.0	D
SR 156 to Sala Road	2,874	24.3	C	2,826	23.8	C
Sala Road to Boronda Road	2,602	14.6	B	3,404	19.0	C
Boronda Road to Laurel Drive	2,796	23.5	C	3,444	30.4	D
Laurel Drive to N. Main Street/SR 183	2,823	23.8	C	3,620	32.7	D
N. Main Street/SR 183 to E. Market Street	2,708	22.7	C	3,545	31.7	D
SR 68 John Street to S. Sanborn Road	2,109	17.7	B	2,450	20.6	C
S. Sanborn Road to Abbott Street	1,847	15.5	B	2,407	20.2	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

All study segments perform within the minimum standards set by the County CMP.

5.4.3 EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN FREEWAY RAMP JUNCTION CAPACITY ANALYSIS

Table 19 and **Table 20** document the findings of a capacity analysis for US 101 ramp junctions at two interchanges in Salinas under the Existing Plus Project and West Area Specific Plan scenario, during the morning and evening peak periods, respectively.

TABLE 19: AM EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	26.1	C	Loop On-Ramp	13	B
	On-Ramp	27.3	C	Off-Ramp	23.9	C
West Laurel Drive	Off-Ramp	32.1	D	On-Ramp	21.6	C
	On-Ramp	25.3	C	Loop On-Ramp	17.7	B
				Off-Ramp	17.4	B

Source: Fehr & Peers, 2019

TABLE 20: PM EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	23.2	C	Loop On-Ramp	20.1	C
	On-Ramp	25.2	C	**Off-Ramp**	**36.6**	**E**
West Laurel Drive	Off-Ramp	29.8	D	On-Ramp	33.1	D
	On-Ramp	21.8	C	Loop On-Ramp	29.2	D
				Off-Ramp	**37.0**	**E**

Source: Fehr & Peers, 2019

The Northbound Off-Ramps at East Boronda Road and East Laurel Street perform at LOS E, which is below the minimum standards set by the County CMP.

6.0 CUMULATIVE VOLUMES AND LEVEL OF SERVICE

The future effects of the Central Area Specific Plan and the West Area Specific Plan were evaluated against the projected volumes and operations of the transportation network assuming growth as a result of partial implementation of the adopted general plan as of the year 2045. The roadway network improvements included in the City's General Plan, including the eastside and westside bypasses, are reflected in the cumulative analyses. The following sections detail the forecasting methods and results of this analysis.

6.1 TRAVEL DEMAND FORECASTING METHODS AND ASSUMPTIONS

The Salinas Travel Demand model (the model) includes all of Monterey County, California, including the City of Salinas. It is a four-step model, using trip generation, trip distribution, mode choice and trip assignment as well as localized land use and roadway network attributes in order to create estimates for travel behavior and patterns.

The model was used to forecast travel to and from a specific area, or zone, based on the land use information for that zone. Land use information includes the number and size of households and the number and type of jobs.

6.1.1.1 Linear Interpolation of the Cumulative Horizon Year Forecast

The model was initially developed with a horizon year of 2063 in order to reflect the conditions anticipated to prevail with buildout of the City's General Plan. As such, it includes all of the land use changes and transportation network improvements included in the General Plan. The land use changes from the proposed Economic Development Element are also included.

By contrast, 2045 is the cumulative horizon year used in this Transportation Impact Analysis. In order to produce traffic forecasts based on changes in land use for 2045 (instead of 2063; General Plan transportation network changes are assumed to have occurred by 2045), land use conditions were interpolated by assuming growth in a linear manner between the base and horizon years. While actual land use growth may follow economic cycles and not an exact linear trend, this assumption is relatively consistent with recent and historical trends in the City.

6.1.1.2 Adjusting Model Outputs

Travel demand models such as the one used in this report provide volume outputs that need to be adjusted in order to develop volume forecasts for the scenario being tested. In principle, raw volume outputs from a travel demand model should rarely be applied directly in analysis, only being used after adjustments are made. Adjustments to forecasted volumes are usually based on the difference between or ratio of volumes observed in the field and the model's own prediction of existing volumes.

The rationale for adjusting raw model volume outputs is that observed travel behavior is the result of a highly complex mixture of variables, only some of which are included in any given travel demand model, and so an adjustment is needed to account for variables not captured by the model itself. The adjustment takes the form of changing the model outputs to correct for discrepancies between the base year field counts and the base year model volumes identified during the local calibration process, as it is assumed that the discrepancy will likely affect all scenarios in the same order of magnitude. This can be done several ways, as defined in the *National Cooperative Highway Research Program Report 255: Highway Traffic Data for Urbanized Area Project Planning and Design*, Transportation Research Board, December 1982[8]. The three most common industry-standard procedures for adjusting model traffic forecasts for both link and turning movement volumes are described below.

6.1.1.3 Difference Method

The difference between the base year field count and the base year model volume is added to the output model volume to develop the forecasted volume for the scenario being tested. For example, if the base year model volume for a roadway segment was 650 ADT while the field count was 700 ADT, then the difference method would suggest the output model volume on that roadway segment should be increased by 50 ADT to develop the forecasted volume for the scenario being tested. The difference method adjustment is summarized in the formula below.

Scenario Forecast = Output Model Volume + (Field Count – Base Year Model Volume)

6.1.1.4 Ratio Method

The ratio method is similar, except that it uses the ratio of the base year field count and the base year model volume to make the adjustment. For example, if the base year model volume for a roadway segment was 650 ADT while the field count was 700 ADT, then the ratio method would suggest the output model volume

[8] http://teachamerica.com/tih/PDF/nchrp255.pdf

should be increased by 7.7% (700 / 650 = 1.077) to develop the forecasted volume for the scenario being tested. The ratio method adjustment is summarized in the formula below.

*Scenario Forecast = Output Model Volume * (Field Count / Base Year Model Volume)*

6.1.1.5 Blended Method

The blended method takes the average of the ratio method and the difference method scenario forecasts. The blended method adjustment is summarized in the formula below.

Scenario Forecast = (Difference Method Scenario Forecast + Ratio Method Scenario Forecast) / 2

The most appropriate adjustment method is left to the judgment of the engineer for each project. However, there are guidelines that the Transportation Research Board[9] has published based on the difference between base year field counts and base year model volumes: use the ratio method if the difference is less than 50%, use the difference method if the difference is greater than 150%, otherwise use the blended method.

This methodology was followed for the production of forecasts. In cases where the model was unable to produce volume at a specific intersection or roadway, an annual growth rate of .75% (based on regional growth, industry standards and engineering judgement) was applied to the observed volumes to forecast the 2045 no project volume. In some locations, particularly around the project access points, some volumes were re-routed based on details of the internal circulation network of the project.

6.1.1.6 Roadway Cumulative Network Changes

The following roadway network changes were assumed as part of all cumulative scenarios and are included in the model (these changes are presented in **Figure 11**):

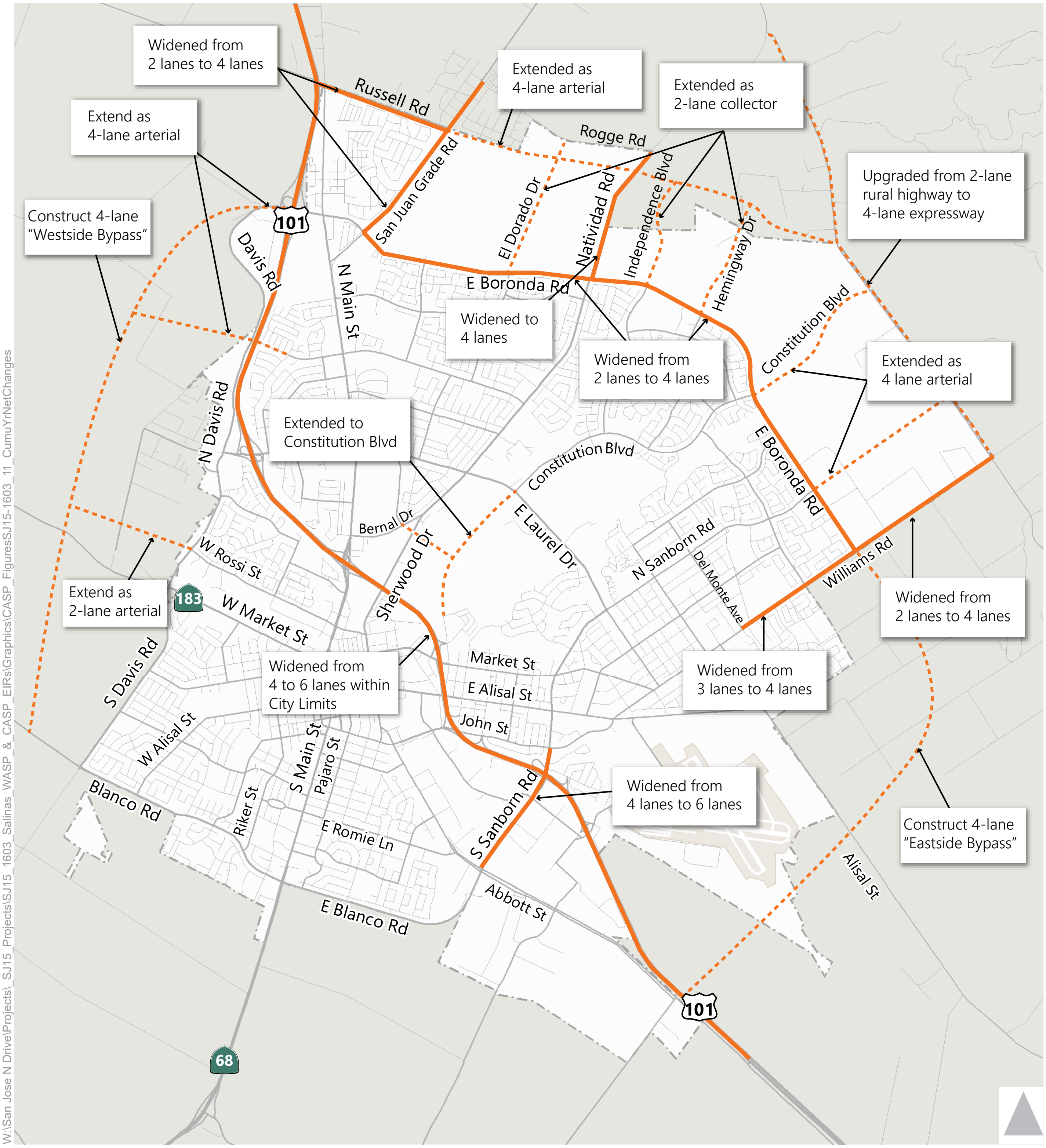
- Boronda Road was widened to 4 lanes from 2 lanes between Williams Road and San Juan Grade Road.
- As shown earlier in **Figure 2**, the internal circulation network for the Central Area Specific Plan was added to the model. The network is consistent with the plan document and includes access points on Natividad Road, Boronda, Old Stage Road, the planned extensions of Russell Road, Constitution Boulevard, Hemingway Drive and Independence Boulevard.
- When necessary, the West Area Specific Plan was added to the model network. The network is consistent with the plan document and includes access points on Boronda Road, Natividad Road,

[9] *National Cooperative Highway Research Program Report 255, Highway Traffic Data for Urban Area Project Planning and Design*, Transportation Research Board, N.J. Pederson and D.R. Samdahl

San Juan Grade, and Rogge Road. Extensions of Russell Road, El Dorado Drive and other internal roadway connections were added.

In the cumulative scenarios which include the General Plan roadway network the following roadway improvements have also been coded into the model (also reflected on **Figure 11**):

- 4-lane divided arterial extending "Western Bypass" south of SR 183 to the intersection of Blanco Road and Davis Road.
- 4-lane divided arterial "Eastside Bypass" from the Boronda Road/Williams Road intersection to Harris Road at US 101
- 4 lane arterial extension of Alvin Drive across US 101 to connect with the Western Bypass
- 2 lane arterial extension of West Rossi Street from North Davis Road to the Western Bypass
- Widening of Russell Road from 2 to 4 lanes from San Juan Grade Road to North Main Street
- Widening of San Juan Grade Road from 2 to 4 lanes from Boronda Road to Rogge Road
- Widening of Old Stage Road from 2 to 4 lanes from Williams Road to Natividad Road
- Widening of Williams Road to 4 lanes from Del Monte Avenue to Old Stage Road
- Widening of South Sanborn Road to 6 lanes from Abbott Street to John Street
- Southernly extension of Constitution Boulevard from East Laurel Drive to Kern Street
- Extension of Maryal Drive from Bernal Drive to the new extension of Constitution Boulevard



Source: City of Salinas

Roadway Widening
City Limits
New Roads

Figure 11
Cumulative Year Network Changes

6.2 CUMULATIVE WITH NO PROJECT CONDITIONS ANALYSIS

6.2.1.1 Cumulative with No Project Conditions Intersection Operation Analysis

The study intersections were evaluated under future growth assuming 2045 buildout of the general plan, as well as other changes detailed in the previous section. The results of this analysis are shown in **Table 21,** below. Intersections that perform below the minimum local performance standards are shown in bold.

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	7 (16.9)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.6 (12.6)	A (B)	**4.7 (43.7)**	**A (E)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	9.2	A	12.1	B
4	Harrison Road/Sala Road	Signal	9	A	10.2	B
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	10	A	**109.7**	**F**
6	Hebert Road/San Juan Grade Road	SSSC	6.6 (13.0)	A (B)	9.5 (33.9)	A (D)
7	Old Stage Road/Hebert Road	SSSC	5.2 (12.8)	A (B)	5.1 (19.7)	A (C)
8	North Main Street/Harrison Road/Russell Road	Signal	17.3	B	27.4	C
9	Van Buren Avenue/Russell Road	Signal	18.3	B	12.9	B
10	San Juan Grade Road/Rogge Road	AWSC	20.9	C	14.9	B
11	San Juan Grade Road/Russell Road	Signal	15.8	B	23.4	C
12	**Natividad Road/Rogge Road**	**SSSC**	6.1 (10.7)	A (B)	**15.2 (47.5)**	**B (E)**
13	**Natividad Road/Russell Road**	SSSC	6.5 (25.5)	A (D)	**7.7 (51.0)**	**A (F)**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.4 (22.8)	A (C)	4.3 (27.0)	A (D)
15	US 101 Southbound Ramps/Boronda Road	Signal	6.6	A	8.2	A
16	US 101 Northbound Ramps/Boronda Road	Signal	8.7	A	19.5	B
17	**North Main Street/Boronda Road**	**Signal**	49.7	D	**70.2**	**E**
18	North Main Street/San Juan Grade Road	Signal	12.9	B	35.5	D
19	San Juan Grade Road/Boronda Road	Signal	37.7	D	45.6	D
20	McKinnon Street/Boronda Road	Roundabout	5.6	A	5.4	A
21	El Dorado Drive/Boronda Road	Roundabout	6.0	A	6.4	A
22	Natividad Road/Boronda Road	Roundabout	4.5	A	5.6	A
23	Independence Boulevard/Boronda Road	Roundabout	4.4	A	4.7	A
24	Hemingway Drive/Boronda Road	Signal	12.4	B	5.8	A
25	Old Stage Road/Constitution Boulevard	AWSC	8.9	A	9.9	A
26	N Main Street/East Alvin Drive	Signal	42.4	D	41	D
27	Natividad Road/East Alvin Drive	Signal	21.2	C	14.7	B
28	Independence Boulevard/Constitution Boulevard	Signal	29.2	C	28.5	C
29	Boronda Road/Constitution Boulevard	Signal	8.4	A	9.7	A
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.3	B	17.4	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	8.9	A	16.2	B
32	**N Main Street/West Laurel Drive**	Signal	41.5	D	**161.8**	**F**
33	**Natividad Road/East Laurel Drive**	**Signal**	**73.9**	**E**	**85.1**	**F**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	54.5	D	**68.4**	**E**
35	North Sanborn Road/Boronda Road	Signal	12.5	B	28.2	C
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**56.7**	**E**	**68.6**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**72**	**F**	**122.3**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	23.9	C	29.3	C
40	Williams Road/East Boronda Road	Signal	18.9	B	39.3	D
41	Freedom Parkway/Williams Road	Signal	20.7	C	28.9	C
42	Bardin Road/Bardin Way/Williams Road	Signal	20.9	C	25.3	C
43	East Market Street/Williams Road	Signal	22.6	C	48	D
44	John Street/Williams Road/East Alisal Street	Signal	13.6	B	21.2	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	31.5	C	34.1	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	9.5	A	13.9	B
47	Skyway Boulevard/Airport Boulevard	SSSC	8.3 (9.8)	A (A)	17.7 (19.2)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	27.4	C	37.7	D
49	West Laurel Drive/Adams Street	Signal	19.4	B	21.7	C
50	North Davis Road/West Laurel Drive	Signal	36	D	54	D
51	East Front Street/Sherwood Drive/Market Street	Signal	18.2	B	31.9	C
52	East Market Street/East Front Street	Signal	9.4	A	11.5	B
53	**South Davis Road/Blanco Road**	**Signal**	**184.9**	**F**	**144.7**	**F**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
54	Monterey Street/Monterey Street/East Market Street	Signal	18.2	B	24.9	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	37.1	D	46.4	D
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	**48.5**	**D**	**67.4**	**E**

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service

Notes:

- *SSSC intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS). AWSC LOS is reported for the overall intersection, based on average delay per vehicle*

Fourteen intersections were found to function below the City thresholds for acceptable level of service (D or better) during the morning and/or evening peak period. Of these, seven operate at LOS F during one or both peak periods for the intersection as a whole: US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road, Crazy Horse Canyon Road/San Juan Grade Road, Old Stage Road/Williams Road, South Davis Road/Blanco Road, Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way, Natividad Road/East Laurel Drive and North Main Street/West Laurel Drive.

6.2.1.2 Cumulative with No Project Conditions Freeway Mainline Capacity Analysis

Ten segments of US 101 through Salinas were analyzed using methodology from the Highway Capacity Manual in the Cumulative Conditions scenario. This Cumulative scenario includes the roadway network changes described in Section 6.1.1.6. Results for the morning peak period are shown below in **Table 22** and evening results are shown in **Table 23**.

TABLE 22: AM CUMULATIVE WITH NO PROJECT CONDITIONS FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,060	26.1	D	3,530	31.5	D
Crazy Horse Canyon Road to San Miguel Canyon Road	2,630	22.1	C	2,920	24.7	C

San Miguel Canyon Road to SR 156	3,580	32.2	D	**3,880**	**36.6**	**E**
SR 156 to Sala Road	3,230	27.9	D	3,090	26.4	D
Sala Road to Boronda Road	3,290	18.4	C	3,020	16.9	B
Boronda Road to Laurel Drive	3,650	20.4	C	3,190	17.8	B
Laurel Drive to N. Main Street/SR 183	3,640	20.4	C	3,080	17.2	B
N. Main Street/SR 183 to E. Market Street	3,220	18.0	B	2,460	13.8	B
SR 68 John Street to S. Sanborn Road	2,300	12.9	B	2,010	11.2	B
S. Sanborn Road to Abbott Street	2,540	14.2	B	1,720	9.6	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 23: PM CUMULATIVE WITH NO PROJECT CONDITIONS FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Grade Road to Crazy Horse Canyon Road	**4,170**	**40.2**	**E**	3,470	30.7	D
Crazy Horse Canyon Road to San Miguel Canyon Road	3,310	28.8	D	3,110	26.6	D
San Miguel Canyon Road to SR 156	**4,770**	**58.4**	**F**	**4,230**	**43.2**	**E**
SR 156 to Sala Road	**4,290**	**44.6**	**E**	3,280	28.4	D
Sala Road to Boronda Road	4,230	23.7	C	3,330	18.6	B
Boronda Road to Laurel Drive	4,310	24.3	C	3,830	21.4	C
Laurel Drive to N. Main Street/SR 183	4,080	22.8	C	3,990	22.3	C
N. Main Street/SR 183 to E. Market Street	3,660	20.5	C	3,900	21.8	C
SR 68 John Street to S. Sanborn Road	2,970	16.6	B	2,650	14.8	B
S. Sanborn Road to Abbott Street	2,310	12.9	B	3,180	17.8	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

San Miguel Canyon Road to SR 156 was found to operate at LOS E in northbound direction during the AM peak period, LOS F in the evening peak hour in the southbound direction and LOS E in the evening peak in the northbound direction. San Juan Grade Road to Crazy Horse Canyon Road operates at LOS E and LOS D in the south and northbound directions during the evening peak period. SR 156 to Sala Road rated LOS E in the southbound direction during the evening peak hour.

6.2.1.3 Cumulative with No Project Conditions Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were prepared at two interchanges along US 101 in Salinas. The results of this analysis for the morning and evening peak period are shown in **Table 24** and **Table 25**, respectively.

TABLE 24: AM CUMULATIVE WITH NO PROJECT RAMP MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	21.8	C	Loop On-Ramp	14.1	B
	On-Ramp	20.2	C	Off-Ramp	25.1	C
West Laurel Drive	Off-Ramp	27.1	C	On-Ramp	21.3	C
	On-Ramp	20.5	C	Loop On-Ramp	17.4	B
				Off-Ramp	31.9	D

Source: Fehr & Peers, 2019

TABLE 25: PM CUMULATIVE WITH NO PROJECT RAMP MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	24.4	C	Loop On-Ramp	15.0	B
	On-Ramp	24.1	C	Off-Ramp	30.2	D
West Laurel Drive	Off-Ramp	30.9	D	On-Ramp	23.2	C
	On-Ramp	23.0	C	Loop On-Ramp	21.6	C
				Off-Ramp	29.9	D

Source: Fehr & Peers, 2019

All ramp junctions perform at or above the minimum standards set by the County CMP.

6.3 CUMULATIVE PLUS PROJECT CONDITIONS

6.3.1.1 Cumulative plus Project Conditions Intersection Operation Analysis

The Cumulative Conditions Plus Project scenario models the overall change in traffic volumes in Salinas as a result of forecast development, with the addition of the proposed project. The intent is to understand how the proposed project will influence travel behavior in light of future conditions, and to identify possible significant future impacts. The results of this analysis are shown in **Table 26** below.

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	7.5 (16.5)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.5 (11.4)	A (B)	**4.9 (37.5)**	**A (E)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	10.6	B	13.7	B
4	Harrison Road/Sala Road	Signal	9.6	A	11.1	B
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	10.4	B	**122.3**	**F**
6	**Hebert Road/San Juan Grade Road**	**SSSC**	6.9 (13.4)	A (B)	**10.1 (38)**	**B (E)**
7	Old Stage Road/Hebert Road	SSSC	5.1 (13.2)	A (B)	5.1 (20.7)	A (C)
8	North Main Street/Harrison Road/Russell Road	Signal	17.6	B	30.9	C
9	Van Buren Avenue/Russell Road	Signal	30.4	C	21.6	C
10	San Juan Grade Road/Rogge Road	AWSC	20.9	C	14.9	B
11	San Juan Grade Road/Russell Road	Signal	35.2	D	35	C
12	**Natividad Road/Rogge Road**	**SSSC**	6 (10.8)	A (B)	**15.2 (47.5)**	**C (E)**
13	**Natividad Road/Russell Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.4 (22.8)	A (C)	4.3 (27)	A (D)
15	US 101 Southbound Ramps/Boronda Road	Signal	6.8	A	8.6	A
16	US 101 Northbound Ramps/Boronda Road	Signal	9	A	21.5	C
17	**North Main Street/Boronda Road**	**Signal**	49.7	D	**79.1**	**E**
18	North Main Street/San Juan Grade Road	Signal	13.8	B	37.3	D
19	San Juan Grade Road/Boronda Road	Signal	38.9	D	41.1	D
20	McKinnon Street/Boronda Road	Roundabout	7.2	A	6.7	A
21	El Dorado Drive/Boronda Road	Roundabout	8.4	A	8.7	A
22	Natividad Road/Boronda Road	Roundabout	6.4	A	8.9	A
23	Independence Boulevard/Boronda Road	Roundabout	7.2	A	8.4	A
24	Hemingway Drive/Boronda Road	Signal	45.5	D	32.2	C
25	Old Stage Road/Constitution Boulevard	AWSC	11	B	12.6	B
26	N Main Street/East Alvin Drive	Signal	42.4	D	41	D
27	Natividad Road/East Alvin Drive	Signal	35.2	D	17.1	B
28	Independence Boulevard/Constitution Boulevard	Signal	52.4	D	40.9	D
29	Boronda Road/Constitution Boulevard	Signal	31.9	C	43.3	D
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.4	B	17.6	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	9.3	A	16.5	B

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
32	**N Main Street/West Laurel Drive**	**Signal**	43.2	D	**164.1**	**F**
33	**Natividad Road/East Laurel Drive**	**Signal**	**85.3**	**F**	**97.9**	**F**
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	**86.8**	**F**	**116.8**	**F**
35	North Sanborn Road/Boronda Road	Signal	19	B	53.5	D
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**57.8**	**E**	**69**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**75**	**E**	**136.4**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	30.3	C	33.7	C
40	**Williams Road/East Boronda Road**	Signal	26.6	C	**72.6**	**E**
41	Freedom Parkway/Williams Road	Signal	25.5	C	49.7	D
42	Bardin Road/Bardin Way/Williams Road	Signal	26	C	30.3	C
43	East Market Street/Williams Road	Signal	23.4	C	51.8	D
44	John Street/Williams Road/East Alisal Street	Signal	14.2	B	28.5	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	37.1	D	39	D
46	Bardin Road/East Alisal Street/Driveway	AWSC	10	A	15.2	C
47	Skyway Boulevard/Airport Boulevard	SSSC	7.6 (9.9)	A (A)	18.9 (20.8)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.1	C	46.6	D

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
49	West Laurel Drive/Adams Street	Signal	19.6	B	22.1	C
50	North Davis Road/West Laurel Drive	Signal	36.1	D	54.1	D
51	East Front Street/Sherwood Drive/Market Street	Signal	21.4	C	39.9	D
52	East Market Street/East Front Street	Signal	10	B	13.9	B
53	**South Davis Road/Blanco Road**	**Signal**	**186.9**	**F**	**145.4**	**F**
54	Monterey Street/Monterey Street/East Market Street	Signal	18.9	B	25.7	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	46.2	D	51.7	D
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	50.4	D	**69.3**	**E**

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, sixteen intersections were found to operate below the local minimum LOS threshold in the morning and/or evening peak period. Intersections that operate below the local threshold as a result of project-related traffic are considered project contributions to significant cumulative impacts. Mitigations are discussed further in the next section.

6.3.1.2 Cumulative plus Project Conditions Freeway Mainline Capacity Analysis

The Travel Demand Model was also used to forecast vehicle volumes on the ten study segments of US 101. This Cumulative scenario includes the roadway network changes described in Section 6.1.1.6. **Table 27** shows the morning peak period results, **Table 28** shows the evening results. LOS scores are compared to the minimum operating standards defined by the County CMP in the tables below.

TABLE 27: AM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,230	27.9	D	3,750	34.6	D
Crazy Horse Canyon Road to San Miguel Canyon Road	2,800	23.6	C	3,140	26.9	D
San Miguel Canyon Road to SR 156	3,750	34.6	D	**4,100**	**40.6**	**E**
SR 156 to Sala Road	3,400	29.9	D	3,290	28.6	D
Sala Road to Boronda Road	3,380	18.9	C	3,100	17.3	C
Boronda Road to Laurel Drive	3,810	21.3	C	3,270	18.3	C
Laurel Drive to N. Main Street/SR 183	3,680	20.6	C	3,110	17.4	B
N. Main Street/SR 183 to E. Market Street	3,260	18.2	C	2,490	13.9	B
SR 68 John Street to S. Sanborn Road	2,340	13.1	B	2,040	11.4	B
S. Sanborn Road to Abbott Street	2,580	14.4	B	1,750	9.8	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 28: PM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	**4,400**	**47.2**	**F**	3,640	33.0	D
Crazy Horse Canyon Road to San Miguel Canyon Road	3,540	31.6	D	3,280	28.4	D
San Miguel Canyon Road to SR 156	**5,000**	**68.0**	**F**	**4,400**	**47.2**	**F**
SR 156 to Sala Road	**4,520**	**50.3**	**F**	3,450	30.5	D
Sala Road to Boronda Road	4,350	24.5	C	3,430	19.2	B
Boronda Road to Laurel Drive	4,460	25.2	C	3,970	22.2	C
Laurel Drive to N. Main Street/SR 183	4,180	23.4	C	4,150	23.3	C

TABLE 28: PM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
N. Main Street/SR 183 to E. Market Street	3,690	20.6	C	3,940	22.0	C
SR 68 John Street to S. Sanborn Road	3,000	16.8	B	2,690	15.0	B
S. Sanborn Road to Abbott Street	2,340	13.1	B	3,220	18.0	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

Similar to the Cumulative Conditions results, San Juan Road to Crazy Horse Canyon Road, San Miguel Canyon Road to SR 156, and SR 156 to Sala Road all fall below the minimum LOS standards in the evening periods. In the morning period San Miguel Canyon Road to SR 156 falls below the LOS standard.

6.3.1.3 Cumulative plus Project Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were analyzed at two interchanges along US 101 in Salinas. The results of this analysis for Cumulative Plus Project scenario during the morning and evening peak period are shown in **Table 29** and **Table 30**, respectively**.**

TABLE 29: AM CUMULATIVE PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Broad	Loop On-Ramp	23.0	C	Loop On-Ramp	17.6	B
	On-Ramp	21.1	C	Off-Ramp	25.6	C
West Laurel Drive	Off-Ramp	28.0	D	On-Ramp	20.5	C
	On-Ramp	21.2	C	Loop On-Ramp	14.3	B
				Off-Ramp	23.4	C

Source: Fehr & Peers, 2019

TABLE 30: PM CUMULATIVE PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	25.4	C	Loop On-Ramp	15.4	B
	On-Ramp	24.9	C	Off-Ramp	31.1	D
West Laurel Drive	Off-Ramp	31.7	D	On-Ramp	24.0	C
	On-Ramp	23.6	C	Loop On-Ramp	22.1	C
				Off-Ramp	30.4	D

Source: Fehr & Peers, 2019

All ramp junctions perform at or above the minimum standards set by County CMP.

6.4 CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN CONDITIONS

6.4.1.1 Cumulative plus Project and West Area Specific Plan Conditions Intersection Operation Analysis

The results of the intersection operations analysis for the Cumulative Plus Project and West Area Specific Plan conditions are shown in **Table 31** below.

TABLE 31: CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	8.9 (19.8)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.3 (13.4)	A (B)	**5.3 (54.4)**	**A (F)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	12.6	B	16.6	C
4	Harrison Road/Sala Road/Driveway	Signal	14.4	B	19.7	B

TABLE 31: CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	**11.8**	**B**	**>150**	**F**
6	**Hebert Road/San Juan Grade Road**	**SSSC**	6.7 (14.6)	A (B)	**10.8 (45.7)**	**B (E)**
7	**Old Stage Road/Hebert Road**	**SSSC**	5.6 (15.0)	A (B)	**8.6 (36.3)**	**A (E)**
8	North Main Street/Harrison Road/Russell Road	Signal	18.3	B	32.3	C
9	Van Buren Avenue/Russell Road	Signal	45.6	D	29.8	C
10	San Juan Grade Road/Rogge Road	AWSC	23.1	C	17.3	C
11	San Juan Grade Road/Russell Road	Signal	47	D	47.8	D
12	**Natividad Road/Rogge Road**	**SSSC**	7.1 (13.4)	A (B)	**37.3 (125)**	**E (F)**
13	**Natividad Road/Russell Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**100.8 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	7.2	A	9.2	A
16	US 101 Northbound Ramps/Boronda Road	Signal	10.5	B	32.6	C
17	**North Main Street/Boronda Road**	**Signal**	52.8	D	**117.2**	**F**
18	North Main Street/San Juan Grade Road	Signal	16.3	B	45.1	D
19	San Juan Grade Road/Boronda Road	Signal	43.9	D	50.2	D
20	McKinnon Street/Boronda Road	Roundabout	17.1	C	12.0	B
21	El Dorado Drive/Boronda Road	Roundabout	21.2	C	23.1	C
22	**Natividad Road/Boronda Road**	**Roundabout**	22.4	C	**57.7**	**F**
23	Independence Boulevard/Boronda Road	Roundabout	23.3	C	11.9	B

TABLE 31: CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
24	Hemingway Drive/Boronda Road	Signal	53.3	D	25.1	C
25	Old Stage Road/Constitution Boulevard	AWSC	11.5	B	12.9	B
26	N Main Street/East Alvin Drive	Signal	43.3	D	44.7	D
27	Natividad Road/East Alvin Drive	Signal	34.5	D	17.4	B
28	Independence Boulevard/Constitution Boulevard	Signal	52.7	D	44.9	D
29	Boronda Road/Constitution Boulevard	Signal	35.3	D	46.3	D
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.5	B	17.7	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	9.4	A	16.8	B
32	**N Main Street/West Laurel Drive**	**Signal**	43.6	D	**161.3**	**F**
33	**Natividad Road/East Laurel Drive**	**Signal**	**118.7**	**F**	**116.8**	**F**
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	**82.8**	**F**	**114.2**	**F**
35	**North Sanborn Road/Boronda Road**	**Signal**	30.6	C	**83.1**	**F**
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**61**	**E**	**75.7**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**105**	**F**	**165.7**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	30.6	C	34.2	C
40	**Williams Road/East Boronda Road**	Signal	38	D	**108.2**	**F**
41	Freedom Parkway/Williams Road	Signal	27.9	C	54.5	D
42	Bardin Road/Bardin Way/Williams Road	Signal	26.5	C	31.3	C
43	East Market Street/Williams Road	Signal	23.7	C	53.4	D

TABLE 31: CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
44	John Street/Williams Road/East Alisal Street	Signal	14.2	B	28.1	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	37.3	D	39.5	D
46	Bardin Road/East Alisal Street/Driveway	AWSC	10.1	B	15.6	C
47	Skyway Boulevard/Airport Boulevard	SSSC	7.1 (10.2)	A (B)	20.6 (24.1)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.3	C	46.8	D
49	West Laurel Drive/Adams Street	Signal	19.6	B	22.6	C
50	North Davis Road/West Laurel Drive	Signal	36.3	D	54.3	D
51	**East Front Street/Sherwood Drive/Market Street**	**Signal**	28.7	C	**66.8**	**E**
52	East Market Street/East Front Street	Signal	11.3	B	21.1	C
53	**South Davis Road/Blanco Road**	**Signal**	**189.2**	**F**	**146.5**	**F**
54	Monterey Street/Monterey Street/East Market Street	Signal	24.2	C	32.4	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**98.3**	**F**	**102.3**	**F**
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	52.3	D	**71.8**	**E**

Source: Fehr & Peers, 2019
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, twenty-two intersections were found to operate below the local LOS thresholds set by the City.

6.4.1.2 Cumulative plus Project Conditions and West Area Specific Plan Freeway Mainline Capacity Analysis

The Travel Demand Model was used to forecast vehicle volumes on the ten study segments of US 101. **Table 32** shows the morning peak period results while **Table 33** shows the evening results. LOS scores are compared to the minimum operating standards defined by the County CMP.

TABLE 32: AM CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segments	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,430	29.9	D	**3,970**	**38.2**	**E**
Crazy Horse Canyon Road to San Miguel Canyon Road	3,000	25.5	C	3,360	29.4	D
San Miguel Canyon Road to SR 156	**3,950**	**37.8**	**E**	**4,320**	**45.2**	**F**
SR 156 to Sala Road	3,600	32.4	D	3,410	30.0	D
Sala Road to Boronda Road	3,490	19.5	C	3,160	17.7	B
Boronda Road to Laurel Drive	4,040	22.6	C	3,420	19.1	C
Laurel Drive to N. Main Street/SR 183	3,930	22.0	C	3,150	17.6	B
N. Main Street/SR 183 to E. Market Street	3,330	18.4	C	2,530	14.2	C
SR 68 John Street to S. Sanborn Road	2,380	13.3	B	2,080	11.6	B
S. Sanborn Road to Abbott Street	2,620	14.6	B	1,790	10.0	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

TABLE 33: PM CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN HIGHWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segments	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	**4,640**	**54.0**	**F**	**3,840**	**36.0**	**E**
Crazy Horse Canyon Road to San Miguel Canyon Road	**3,780**	**35.0**	**E**	3,480	30.8	D
San Miguel Canyon Road to SR 156	**5,240**	**81.9**	**F**	**4,600**	**52.7**	**F**
SR 156 to Sala Road	**4,760**	**58.0**	**F**	3,650	33.1	D
Sala Road to Boronda Road	4,470	25.3	C	3,480	19.5	C
Boronda Road to Laurel Drive	4,660	26.6	D	4,050	22.7	C
Laurel Drive to N. Main Street/SR 183	4,390	24.8	C	4,190	23.5	C
N. Main Street/SR 183 to E. Market Street	3,730	20.9	C	3,980	22.3	C
SR 68 John Street to S. Sanborn Road	3,040	17.0	B	2,730	15.3	B
S. Sanborn Road to Abbott Street	2,380	13.3	B	3,260	18.2	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2019

Two segments of US 101 were found to operate below the LOS standard in the AM peak period and four segments were found to function below the LOS standard during the evening peak period.

6.4.1.3 Cumulative plus Project and West Area Specific Plan Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were analyzed at two interchanges along US 101 in Salinas. The results of this analysis for Cumulative Plus Project and West Area Specific Plan scenario during the morning and evening peak period are shown in **Table 34** and **Table 35**, respectively.

TABLE 34: AM CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	24.8	C	Loop On-Ramp	14.2	B
	On-Ramp	22.3	C	Off-Ramp	26.8	C
West Laurel Drive	Off-Ramp	29.2	D	On-Ramp	21.3	C
	On-Ramp	25.5.	C	Loop On-Ramp	18.4	B
				Off-Ramp	24.3	C

Source: Fehr & Peers, 2019

TABLE 35: PM CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	27.0	C	Loop On-Ramp	14.8	B
	On-Ramp	26.0	C	Off-Ramp	32.0	D
West Laurel Drive	Off-Ramp	32.6	D	On-Ramp	24.4	C
	On-Ramp	24.7	C	Loop On-Ramp	22.5	C
				Off-Ramp	30.9	D

Source: Fehr & Peers, 2019

All ramp junctions perform at or above the minimum standards set by the County CMP.

6.5 VEHICLE MILES TRAVELLED

The consumption of roadway network capacity can also be measured with vehicle-miles travelled (VMT). Overall, VMT represents how often and how far people drive. Increases in VMT are often tied to new trips from new land development projects and/or changes in land use that result in increased development intensity and related increases in vehicle trips. In this analysis, the Salinas Travel Demand Model is used to evaluate VMT in the following scenarios:

1. Existing Conditions;
2. Existing with Project;
3. Existing with Project and West Area Specific Plan;
4. Cumulative without Project;
5. Cumulative with Project Conditions; and
6. Cumulative with Project and West Area Specific Plan.

The model does not have the ability to add households in the base year condition, so the Existing with Project, and Existing with Project and West Area Specific Plan scenarios could not be forecasted with that approach. Instead, VMT results for the existing scenarios were estimated by adding the incremental change in VMT from the cumulative year scenarios to the Existing Conditions VMT.

Table 36 and **Table 37** below summarize the change in VMT generated by both the Central Area Specific Plan and the West Area Specific Plan, as well as Salinas. In each case, the absolute VMT is shown. For the City and County, it is shown on a per-capita basis. For the Central Area Specific Plan and the West Area Specific Plan, VMT is shown on a per-trip basis as the project adds additional employment and employee trips cannot be isolated; using a per-capita number for the Central Area Specific Plan and the West Area Specific Plan would overstate the VMT generated due to increases in population. At each location, the VMT generated as a result of existing conditions and each forecast scenario is also presented.

Overall, the addition of the proposed project increases VMT in the existing and cumulative scenarios and the addition of the proposed project with West Area Specific Plan increases VMT to a similar extent on a per capita basis.

TABLE 36: CENTRAL AREA SPECIFIC PLAN AND WEST AREA SPECIFIC PLAN VMT

	Select Zone - West Area Specific Plan				Select Zone - Central Area Specific Plan			
	Daily	Daily/Trip	Annual	Annual/Trip	Daily	Daily/Trip	Annual	Annual/Trip
Existing	30,722	-	9,523,715	-	959	-	297,306	-
Existing Plus Project	34,799	0.67	10,787,711	207	184,767	-	57,277,698	-
Difference	4,077		1,263,996		183,808		56,980,392	
Existing Plus Project and West Area Specific Plan	286,169	5.49	88,712,454	1,703	184,542	3.54	57,208,006	1,098
Difference	255,448		79,188,739		183,583		56,910,700	
Cumulative (No Project)	38,909	-	12,061,764	-	2,504	-	776,312	-
Cumulative Plus Project	47,592	0.91	14,753,414	283	187,181	-	58,026,145	-
Difference	8,683		2,691,649		184,677		57,249,832	
Cumulative Plus Project and West Area Specific Plan	294,356	5.65	91,250,503	1,752	186,087	3.57	57,687,012	1,107
Difference	255,448		88,558,854		183,583		437,179	

Source: Fehr & Peers, 2019

TABLE 37: CITY-WIDE AND COUNTY-WIDE VMT

	City-wide				Entire Model			
	Daily	Daily/Capita	Annual	Annual/Capita	Daily	Daily/Capita	Annual	Annual/Capita
Existing	1,554,334	10.76	481,843,640	3,335	10,355,118	26.90	3,210,086,627	8,338
Existing Plus Project	1,629,797	11.28	505,237,050	3,312	10,450,653	27.14	3,239,702,462	8,415
Difference	75,463		23,393,410		95,535		29,615,836	
Existing Plus Project and West Area Specific Plan	1,714,506	11.87	531,496,733	3,484	10,554,161	27.41	3,271,789,922	8,498
Difference	160,171		49,653,093		199,043		61,703,296	
Cumulative (No Project)	2,171,481	14.51	673,159,092	4,498	12,541,672	29.67	3,887,918,445	9,196
Cumulative Plus Project	2,594,089	17.33	804,167,443	5,374	13,867,144	32.80	4,298,814,679	10,168
Difference	422,608		131,008,351		1,325,472		410,896,234	
Cumulative + Project and West Area Specific Plan	2,331,652	15.58	722,812,185	4,830	12,740,715	30.14	3,949,621,741	9,342
Difference	160,171		591,803,834		199,043		3,538,725,508	

Source: Fehr & Peers, 2019

7.0 IMPACTS AND MITIGATIONS

7.1 VEHICLE TRAFFIC OPERATIONS IMPACTS AND MITIGATIONS

Based on the model results and guiding policies from the City, several intersections were found to suffer from deteriorating LOS scores and/or delay as a result of traffic generated by the proposed project under the existing and cumulative with project conditions scenarios. Impacts are considered to be significant if the addition of project-related traffic reduces LOS scores to E or worse, or if the project adds additional traffic to an intersection already performing at E or worse. Intersections which operate below standards independent of project-related traffic are not considered a significant impact.

This section documents the impacts and proposed mitigations for the Existing plus Project Conditions and Cumulative plus Project Conditions scenarios. This section also discusses the fair-share contribution for each mitigation in the Cumulative plus Project Conditions scenario that the project proponent should be expected to contribute based on the ratio of project-related volume to non-project related volume and growth.

7.1.1 EXISTING PLUS PROJECT CONDITIONS IMPACTS AND MITIGATIONS

Impact E.1: North Main Street & Laurel Drive (32)

This intersection was found to experience worsened vehicle delay while operating at LOS E in the evening peak period with the addition of project traffic. Delays at the intersection would deteriorate from 56.7 seconds per vehicle under the Existing condition to 57.4 seconds per vehicle under the Existing plus Project condition in the evening peak hour, which is a significant adverse impact based on the City’s significance standards.

Mitigation E.1: Optimize existing signal timings. This mitigation was found to improve level of service to LOS D, with 48.6 seconds of delay during the evening peak hour. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.2: Natividad Road & East Laurel Drive (33)

This intersection was found to experience worsened delay as a result of project-related trips in the morning and evening peak period, from LOS D to LOS E for both peak periods. In the AM peak hour, delays at the intersection would deteriorate from 54.9 seconds per vehicle under the Existing condition to 65.0 seconds per vehicle under the Existing plus Project condition. In the PM peak hour, delays at the intersection would deteriorate from 48.9 seconds per vehicle under the Existing condition to 61.0 seconds per vehicle under the Existing plus Project condition. These deteriorations are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E.2: The proposed mitigation is to widen the intersection to add additional northbound and southbound through lanes. This mitigation was found to improve the level of service to D, with 52.3 seconds of delay and 51.5 seconds of delay in the morning and evening peak periods, respectively. This improvement is part of the City's Traffic Improvement Program (Project Number 61). Payment of the City of Salina's Traffic Impact Fees will mitigate the project's impact at this location. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.3: North Sanborn Road/Boronda Road (35)

This intersection was found to experience worsened delay and level of service as a result of the project trips in the existing scenarios. Under the Existing plus Project condition, this intersection's worst movement would operate with more than 150 seconds of delay in the AM and PM peak hours. The intersection would meet peak hour traffic signal warrants in the Existing plus Project scenario. These deteriorations are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E.3: Install a traffic signal. This mitigation was found to improve level of service to C in the morning peak hour and LOS B during the evening peak hour, with 34.4 seconds of delay and 15.5 seconds of delay, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. Alternatively, a roundabout that would reduce traffic to the same LOS (or better) is also acceptable. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.4: Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

With the addition of project traffic, this intersection was found to experience worsened delay in the morning and evening peak periods, from LOS D (41.9 seconds per vehicle) and LOS E (60 seconds per vehicle), respectively, to LOS E and LOS F (57.2 and 73.9 seconds per vehicle). These deteriorations are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E.4: Optimize existing signal timings and add an eastbound left turn pocket. The proposed mitigation is to add an eastbound left turn pocket and optimize the existing signal timing to better accommodate the expected changes in traffic distribution and volume in the with-project scenario. The proposed mitigation was found to improve LOS in the morning and evening peak periods to LOS B, with 15.7 seconds of delay and 15.3 seconds of delay, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.5: South Sanborn/North Sanborn/John Street (45)

The addition of traffic associated with the Central Area Specific Plan project would degrade the operation of this intersection from LOS D with 44.6 seconds per vehicle of delay to LOS E with 73.0 seconds per vehicle of delay during the morning peak hour. This degradation in service is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.5: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this uncoordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS C with 28.0 seconds of delay per vehicle during the morning peak hour. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.6: US 101 Ramp Junctions

With the addition of project trips, the following ramp junctions are expected to function below County CMP standards during the PM peak hour:

- US 101 Northbound Boronda Road Off-Ramp: LOS E (35.1 passenger cars per vehicle per lane).
- US 101 Northbound West Laurel Drive Off-Ramp: LOS E (35.6 passenger cars per vehicle per lane).

Mitigation E.6: Contribution to the TAMC RDIF Program and payment of the City of Salina's Traffic Impact Fees. The proposed mitigation for this impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City of Salina's Traffic Impact Fee (TIF) Program. These programs include improvements to US 101 that would improve mainline and ramp junction operations, which would mitigate this project impact.

7.1.2 EXISTING PLUS PROJECT AND WEST AREA SPECIFIC PLAN IMPACTS AND MITIGATIONS

Impacts observed in the Existing plus Project and West Area Specific Plan Conditions scenario are documented and mitigations proposed below.

Impact E.7: San Juan Grade Road & Van Buren Avenue (14)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS C in the morning peak hour and LOS D in the evening peak hour to LOS F during both peak hours of travel (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.7: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A for both peak periods, with 6.9 and 6.0 seconds of delay during the AM and PM peak hours, respectively. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.8: North Main Street & East Boronda Road (17)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS D (46.2 seconds per vehicle) to LOS E (62.9 seconds per vehicle) during the evening peak hour. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.8: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 50.3 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.9: San Juan Grade Road & Boronda Road (19)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS D (42.7 seconds per vehicle) to LOS F (88.8 seconds per vehicle) during the evening peak hour. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.9: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 42.1 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.10: North Main Street/West Laurel Drive (32)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS E with 56.7 seconds per vehicle of delay to LOS E with 72.1 seconds per vehicle of delay during the evening peak hour. This degradation in service is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.10: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 50.4 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.11: Natividad Road & East Laurel Drive (33)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS D (54.9 seconds per vehicle) to LOS F (106.7 seconds per vehicle) during the morning peak hour and from LOS D (48.9 seconds per vehicle) to LOS F (90.1 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E11: Add northbound through lane, southbound through lane and convert the eastbound right turn lane to a shared through-right turn lane. With this improvement, the operation of the intersection in this scenario would improve to LOS D (52.2 seconds per vehicle) in the morning peak hour and LOS D (52.5 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.12: North Sanborn Road/Boronda Road (35)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS F (123.6 seconds of delay per vehicle) in the morning peak hour and LOS E (38.4 seconds of delay per vehicle) in the evening peak hour to LOS F during both peak hours of travel (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.12: Install traffic signal and add eastbound right turn pocket. The addition of a traffic signal and eastbound right turn pocket will improve the intersection's LOS to D in the morning peak hour (40.6 seconds of delay per vehicle) and LOS C (21.8 seconds of delay per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.13: Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS D (41.9 seconds per vehicle) to LOS F (116.0 seconds per vehicle) during the morning peak hour and from LOS E (60.0 seconds per vehicle) to LOS F (93.0 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E13: Add eastbound left turn pocket and optimize traffic signal timings. With this improvement, the operation of the intersection in this scenario would improve to LOS C (21.8 seconds per vehicle) in the morning peak hour and LOS C (23.0 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.14: Williams Road & East Boronda Road (40)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS D (25.9 seconds of delay per vehicle) to LOS F during the PM peak hour (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.14: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A in the evening peak hour (7.1 seconds of delay per vehicle). With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.15: South Sanborn/North Sanborn/John Street (45)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS D with 44.6 seconds per vehicle of delay to LOS E with 73.5 seconds per vehicle of delay during the morning peak hour. This degradation in service is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.15: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this uncoordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS C with 33.1 seconds of delay per vehicle during the morning peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.16: Salinas Street/Main Street/Market Street (55)

The addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects would degrade the operation of this intersection from LOS C (28.4_seconds per vehicle) to LOS F (95.0 seconds per vehicle) during the morning peak hour and from LOS C (29.5 seconds per vehicle) to LOS E (62.7 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E19: Add southbound left turn pocket and optimize traffic signal timings. With this improvement, the operation of the intersection in this scenario would improve to LOS D (54.0 seconds per vehicle) in the morning peak hour and LOS D (37.8 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.17: US 101 Ramp Junctions

With the addition of traffic associated with both the Central Area Specific Plan and West Area Specific Plan projects, the following ramp junctions are expected to function below County CMP standards during the PM peak hour:

- US 101 Northbound Boronda Road Off-Ramp: LOS E (36.6 passenger cars per vehicle per lane).
- US 101 Northbound West Laurel Drive Off-Ramp: LOS E (37.0 passenger cars per vehicle per lane).

Mitigation E17: Contribution to the TAMC RDIF Program and payment of the City of Salina's Traffic Impact Fees. The proposed mitigation for this impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City of Salina's Traffic Impact Fee (TIF) Program. These programs include improvements to US 101 that would improve mainline and ramp junction operations, which would mitigate this project impact.

7.1.3 CUMULATIVE PLUS PROJECT IMPACTS AND MITIGATIONS

Impacts observed in the Cumulative plus Project Conditions scenario are documented and mitigations proposed below.

Impact C.1: US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road (1)

The addition of Project generated traffic to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.1: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 16.0 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.2: US 101 Northbound Ramps/Crazy Horse Canyon Road (2)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement while operating in LOS E during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.2: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.6 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and *completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.*

Impact C.3: Crazy Horse Canyon Road & San Juan Grade Road (5)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this all-way stop controlled intersection from LOS F with 109.7 seconds of delay per vehicle to LOS F with 122.3 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.3: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.8 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.4: Natividad Road & Rogge Road (12)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement while operating in LOS E during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.4: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 10.6 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.5: Natividad Road & Russell Road (13)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 51.0 seconds of delay per vehicle to LOS F with greater than 150 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.5: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.8 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. This intersection is to be constructed as part of the Project, and the project should fully fund the installation of a traffic signal at this location. With this mitigation, the Project's contribution to this significant adverse cumulative impact will be fully mitigated.

Impact C.6: North Main Street & East Boronda Road (17)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 70.2 seconds of delay per vehicle to LOS E with 79.1 seconds of delay per vehicle during the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.6: Install southbound left turn lane and westbound right turn lane. The addition of additional southbound and westbound turn lanes at this location will improve the intersection's LOS to E with 73.0 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. The project should make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact. As the City has been collecting funds from other development projects to improve this intersection, this contribution would mitigate the Project's contribution to the significant adverse cumulative impact at this location.

Impact C.7: North Main Street & West Laurel Drive (32)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 161.4 seconds of delay to LOS F with 164.1 seconds of delay per vehicle during the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.7: Install northbound right turn overlap phase. The addition of a northbound right turn overlap phase at this location will improve the intersection's LOS to F with 150.3 seconds of delay per vehicle during the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.8: Natividad Road & East Laurel Drive (33)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 73.9 seconds of delay to LOS F with 85.3 seconds of delay per vehicle during the morning peak hour and from LOS F with 85.1 seconds of delay to LOS F with 97.9 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.8: Install northbound and southbound through lanes. The addition of northbound and southbound through lanes at this location will improve the intersection's LOS to E with 72.3 seconds of delay per vehicle during the morning peak hour and LOS F with 83.0 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. This improvement is part of the City's Traffic Improvement Program (Project Number 61). Payment of the City of Salina's Traffic Impact Fees will mitigate the project's contribution to the cumulative impact at this location.

Impact C.9: Constitution Boulevard & East Laurel Drive (34)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 54.5 seconds of delay per vehicle to LOS F with 86.8 seconds of delay in the AM peak hour and from LOS E with 68.4 seconds of delay per vehicle to LOS F with 116.8 seconds of delay per vehicle during the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.9: Install southbound left turn lane. The addition of a southbound left turn lane at this location will improve the intersection's LOS to E with 57.4 seconds of delay per vehicle during the morning peak hour and LOS F with 88.4 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable

Impact C.10: Old Stage Road & Williams Road (36)

The addition of Project generated traffic to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.10: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 12.5 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.11: North Main Street & East Bernal Drive (37)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 56.7 seconds of delay to LOS E with 57.8 seconds of delay per vehicle during the morning peak hour and from LOS E with 68.6 seconds of delay to LOS E with 69.0 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.11: Install northbound through lane, add in northbound right turn overlap phase and convert westbound through lane to westbound shared through-left turn lane. The addition of these improvements at this location will improve the intersection's LOS to D with 47.1 seconds of delay per vehicle during the morning peak hour and LOS E with 60.4 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.12: Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 72.0 seconds of delay to LOS E with 75.0 seconds of delay per vehicle during the morning peak hour and from LOS F with 122.3 seconds of delay to LOS F with 136.4 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.12: Install northbound and southbound through lanes. The addition of these improvements at this location will improve the intersection's LOS to E with 56.4 seconds of delay per vehicle during the morning peak hour and LOS E with 57.1 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.13: Williams Road/East Boronda Road (40)

The addition of traffic generated by the Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 39.3 seconds of delay per vehicle to LOS E with 72.6 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.13: Install eastbound left turn lane. The addition of this improvement will improve the intersection's LOS to C with 33.0 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Project condition. This improvement is part of the City's Traffic Improvement Program (Project Number 54). Payment of the City of Salina's Traffic Impact Fees will mitigate the project's contribution to the cumulative impact at this location.

Impact C.14: South Davis Road & Blanco Road (53)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 184.3 seconds of delay to LOS F with 186.7 seconds of delay per vehicle during the morning peak hour and from LOS F with 144.7 seconds of delay to LOS F with 145.4 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.14: Install westbound left turn lane. The addition of a westbound left turn lane at this location will improve the intersection's LOS to F with 152.5 seconds of delay per vehicle during the morning peak hour and LOS F with 119.0 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. This improvement is part of the City's Traffic Improvement Program (Project Number 73). Payment of the City of Salina's Traffic Impact Fees will mitigate the project's contribution to the cumulative impact at this location.

Impact C.15: Main Street/Blanco Road (56)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 69.6 seconds of delay to LOS E with 69.8 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.15: Install northbound left turn lane. The addition of a northbound left turn lane at this location will improve the intersection's LOS to D with 47.7 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. This improvement is part of the City's Traffic Improvement Program (Project Number 59). Payment of the City of Salina's Traffic Impact Fees will mitigate the project's contribution to the cumulative impact at this location.

Impact C.16: US 101 Mainline Segments

With the addition of project trips, the following segments of US 101 are expected to function below County CMP standards:

- AM US 101 Northbound between San Miguel Canyon Road and SR 156: LOS is E with a density of 40.6
- PM US 101 Southbound between San Juan Road and Crazy Horse Canyon Road; LOS is F with a density of 47.2
- PM US 101 Southbound and Northbound between San Miguel Canyon Road and SR 156: The forecasted LOS is F with a density of 68.0 southbound; northbound is LOS F with a density of 47.2
- PM US 101 Southbound between SR 156 and Sala Road: the forecasted LOS is F with a density of 50.3 southbound

Mitigation C.16: Contribution to the TAMC RDIF Program and City's TIF Program: The proposed mitigation for this cumulative impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City's Traffic Impact Fee Program (TIF).

7.1.4 CUMULATIVE PLUS PROJECT AND WEST AREA SPECIFIC PLAN CONDITIONS IMPACTS AND MITIGATIONS

Impacts observed in the Cumulative plus Project and West Area Specific Plan Conditions scenario are documented and mitigations proposed below.

Impact C.17: US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road (1)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.17: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 17.8 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.18: US 101 Northbound Ramps/Crazy Horse Canyon Road (2)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E with 43.7 seconds of delay per vehicle to LOS F with 54.4 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.18: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.6 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.19: Crazy Horse Canyon Road/San Juan Grade Road (5)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 109.7 seconds of delay per vehicle to LOS F with greater than 150 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.19: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 10.0 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.20: Old Stage Road/Hebert Road (7)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS C with 19.7 seconds of delay per vehicle to LOS E with 36.3 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.20: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 5.3 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.21: Natividad Road/Rogge Road (12)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E with 47.5 seconds of delay per vehicle to LOS F with 125.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.21: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 13.3 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and Wet Area Specific Plan condition during the evening peak hour.

Impact C.22: Natividad Road/Russell Road (13)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 51.0 seconds of delay per vehicle to LOS F with greater than 150.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.22: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 10.4 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.24: San Juan Grade Road/Van Buren Avenue (14)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS D with 27.0 seconds of delay per vehicle to LOS F with greater than 150.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.24: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 6.7 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.25: North Main Street/Boronda Road (14)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 70.2 seconds of delay per vehicle to LOS F with 117.2 seconds of delay per vehicle during the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.25: Install southbound left turn lane and westbound right turn lane. The addition of these improvements will improve the intersection's LOS to E with 68.5 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition during the evening peak hour.

Impact C.26: Natividad Road/Boronda Road (22)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS A with 5.6 seconds of delay per vehicle to LOS F with 57.7 seconds of delay per vehicle during the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.26: No further physical improvements are possible at this location. The intersection would be built-out as a three-lane roundabout, and further widening would not be possible, thus, this impact is considered to be significant and unavoidable.

Impact C.27: Natividad Road/East Laurel Drive (33)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 73.9 seconds of delay per vehicle to LOS F with 118.7 seconds of delay per vehicle during the morning peak hour and from LOS F with 85.1 seconds of delay per vehicle to LOS F with 116.8 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.27: Install northbound and southbound through lanes and convert the existing eastbound right turn lane to a shared through-right turn lane. The addition of these improvements will improve *the intersection's LOS to E with 70.5 seconds of delay per vehicle during the morning peak hour and to LOS E with 72.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.*

Impact C.28: Constitution Boulevard/East Laurel Drive (34)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 54.4 seconds of delay per vehicle to LOS F with 82.8 seconds of delay per vehicle during the morning peak hour and from LOS E with 68.4 seconds of delay per vehicle to LOS F with 114.2 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.28: Install eastbound and southbound left turn lanes. The addition of a third eastbound left turn lane would necessitate the construction of a third northbound receiving lane on Constitution Boulevard for several hundred feet north of the intersection. The addition of these improvements will improve the intersection's LOS to D with 42.9 seconds of delay per vehicle during the morning peak hour and to LOS E with 57.4 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.29: North Sanborn Road/Boronda Road (35)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS C with 28.2 seconds of delay per vehicle to LOS F with 83.1 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.29: Install westbound left turn lane. The addition of this improvement will improve the intersection's LOS to C with 34.5 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.30: Old Stage Road/Williams Road/Private Road (36)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement while operating at LOS F with greater than 150 seconds of delay in both the morning and evening peak hours. Traffic levels under the Cumulative plus Central Area Specific Plan and West Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.30: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 5.9 seconds of delay per vehicle during the morning peak hour and to LOS B with 11.8 seconds of delay per vehicle under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.31: North Main Street/East Bernal Drive (37)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 56.7 seconds of delay per vehicle to LOS F with 61.0 seconds of delay per vehicle during the morning peak hour and from LOS F with 68.6 seconds of delay per vehicle to LOS F with 75.7 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.31: Install a northbound through lane, northbound right turn overlap phase and convert an existing westbound through turn lane to a shared through-left turn lane. The addition of these improvements will improve the intersection's LOS to E with 55.6 seconds of delay per vehicle during the morning peak hour and to LOS E with 65.4 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.32: Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way (38)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 72.0 seconds of delay per vehicle to LOS F with 105.0 seconds of delay per vehicle during the morning peak hour and from LOS F with 122.3 seconds of delay per vehicle to LOS F with 165.7 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.32: Install northbound and southbound through lanes. The addition of these improvements will improve the intersection's LOS to E with 59.9 seconds of delay per vehicle during the morning peak hour and to LOS E with 63.0 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.33: Williams Road/East Boronda Road (40)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 39.3 seconds of delay per vehicle to LOS F with 108.2 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.33: Install eastbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 37.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition. This improvement is part of the City's Traffic Improvement Program (Project Number 54).

Impact C.34: East Front Street/Sherwood Drive/Market Street (51)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS C with 31.9 seconds of delay per vehicle to LOS E with 66.8 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.34: Install southbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 46.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.35: South Davis Road/Blanco Road (53)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 184.9 seconds of delay per vehicle to LOS F with 189.2 seconds of delay per vehicle during the morning peak hour and from LOS F with 144.7 seconds of delay per vehicle to LOS F with 146.5 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.35: Install a westbound left turn lane. The addition of this improvement will improve the intersection's LOS to F with 154.6 seconds of delay per vehicle during the morning peak hour and to LOS F with 120.0 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition. This improvement is part of the City's Traffic Improvement Program (Project Number 73).

Impact C.36: Salinas Street/North Main Street/West Market Street/East Market Street (55)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 37.1 seconds of delay per vehicle to LOS F with 98.3 seconds of delay per vehicle during the morning peak hour and from LOS D with 46.4 seconds of delay per vehicle to LOS F with 102.3 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.36: Install an eastbound through lane and southbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 44.6 seconds of delay per vehicle during the morning peak hour and to LOS D with 38.6 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition.

Impact C.37: South Main Street/Blanco Road (56)

The addition of traffic generated by the Central Area Specific Plan and West Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 67.4 seconds of delay per vehicle to LOS E with 71.8 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.37: Install northbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 49.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus Central Area Specific Plan and West Area Specific Plan condition. This improvement is part of the City's Traffic Improvement Program (Project Number 59).

Impact C.38: US 101 Mainline Segments

With the addition of project trips and trip associated with the West Area Specific Plan, the following segments of US 101 are expected to function below County CMP standards:

- AM US 101 Northbound between San Juan Road and Crazy Horse Canyon Road; LOS is E with a density of 38.2.
- AM US 101 Northbound and Southbound between San Miguel Canyon Road and SR 156: LOS is F, with a density of 45.2 northbound; southbound is LOS E with a density of 37.8.
- PM US 101 Southbound and Northbound between San Juan Road and Crazy Horse Canyon Road; LOS is F with a density of 54.0 southbound; LOS is E with a density of 36.0 northbound.
- PM US 101 Southbound between Crazy Horse Canyon Road and San Miguel Canyon Road; LOS is E with a density of 35.0.
- PM US 101 Southbound and Northbound between San Miguel Canyon Road and SR 156: The forecasted LOS is F with a density of 81.9 southbound; northbound is LOS F with a density of 52.7.
- PM US 101 Southbound between SR 156 and Sala Road: the forecasted LOS is F with a density of 58.0 southbound.

Mitigation C.38: Contribution to the TAMC RDIF Program and City's TIF Program: The proposed mitigation for this cumulative impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City's Traffic Impact Fee Program (TIF).

7.1.5 TRANSPORTATION DEMAND MANAGEMENT (TDM)

As shown, the proposed project will have many significant impacts on the transportation network. Therefore, the City should consider implementing a transportation demand management (TDM) program as part of the Central Area Specific Plan entitlement process. In conjunction with roadway capacity expansions, a TDM program could potentially alleviate the traffic impacts of continued population and employment growth over time by encouraging and/or incentivizing employees to take transit, ride bicycles, walk, vanpool, or carpool to work. Typically, the goal of a TDM program is to reduce the number of people driving alone who work at a location in the plan's scope.

Transportation Demand Management programs can take many forms and are typically comprised of individual measures which employ different strategies for reducing commute trips. Most applicable to the proposed project would be a TDM plan that encompasses any or all of the following measures that are referred to as Commute Trip Reduction (CTR) measures. These are enumerated at length in the 2010 report prepared by the California Air Pollution Control Officers' Association (CAPCOA), *Quantifying Greenhouse*

Gas Mitigation Measures. Potential TDM strategies from the CAPCOA document that could be implemented within the EDE areas include the following:

- *Transit fare subsidy*: Employers provide employees with a subsidized (in part or in full) transit fare and/or transfer. In some cases, the Internal Revenue Service (IRS) may consider this cost as a pre-tax deduction for the employer.
- *Employee parking cash-out:* Employees who are provided a free parking space at the employer's expense may instead elect for a cash payment from the employer equivalent to the cost of the parking space in exchange for foregoing it.
- *Workplace parking pricing:* Instead of providing a free parking space at the employer's expense, employees are required to instead pay for a parking space on their own.
- *Alternative work schedules and telecommute programs:* When feasible, employers allow their employees to work remotely from home, or hold flex hours which allow for commute travel outside of typical commute hours.
- *Commute trip reduction marketing program:* Employers distribute educational literature to their employees about alternative transportation options, usually in conjunction with other CTR measures.
- *Employer-sponsored Vanpool/Shuttle:* When feasible, employers may provide or charter private shuttles or van-pools for their employees.
- *Ride-share program:* A variety of strategies may be undertaken by the employer to encourage employees to carpool to work. Typically, these include reserving a certain number of parking spaces for carpools only, designating loading and unloading areas for ride-sharing vehicles, and providing a website or message board for coordinating rides.
- *Unbundling of Residential Parking Costs*: Encouraging landlords to separate the cost of parking from rent can help to both lower overall rents while dis-incentivizing car ownership or multiple-car households. This may also help concurrent programs that encourage alternative commute modes.
- *Carshare Programs*: Car share companies, such as ZipCar, offer by-the-hour rental business models, can help households who have one or no cars to make necessary trips via automobile on a per-trip rate.

There are many options to implement TDM programs. In some cases, a local jurisdiction may require new development to adopt, monitor, and show proof of a TDM plan as a part of the entitlement process. In other instances, TDM elements may be incorporated into a General Plan or other policy document in the form of requirements for new businesses to include safe bicycle parking; Policy C-4.3 of the existing 2002 City of Salinas General Plan encourages existing and requires new businesses to provide bicycle parking. Other cities may formally codify these policies into their municipal ordinance.

In order to ameliorate the significant and unavoidable impacts that result from the proposed project, the City should implement a TDM program that is related to the Central Area Specific Plan.

7.2 TRANSIT IMPACTS

According to Policy C-3.1 and Policy C-3.2 of the existing 2002 Salinas General Plan, the City shall support Monterey-Salinas Transit (MST) in developing frequent and effective public transportation service, including to new development areas. The Central Area Specific Plan is estimated to generate approximately 800 new transit trips on a daily basis, as well as 130 trips in the morning peak hour and 140 trips in the evening peak hour. These new transit trips alone are not expected to overburden existing transit service in the area. Additionally, this project does not conflict with an existing transit-related policy or plan in the City. As such, this project will have **no significant impacts** on public transit service.

The Specific Plan also proposes a Public Transit Plan which was developed based on input from MST. The transit plan is subject to change and the final routing and siting of bus shelters and stops will be subject to the approval of MST and the City of Salinas. It is recommended that City work with Monterey-Salinas Transit to implement service within and throughout the Specific Plan Area.

7.3 BICYCLE AND PEDESTRIAN IMPACTS

Overall, existing plans and policies are supportive of bicycling and walking in Salinas. City policies related to biking and walking are defined in the existing General Plan Circulation Element through Goal C-4 and Goal C-5. Together, these goals set citywide policies that provide for safe and accessible bicycle and pedestrian facilities. Additionally, the 2002 Salinas Bikeways Plan and 2004 Salinas Pedestrian Plan provide prioritized lists of projects and programs in service of the above goals. In accordance with the standards of significance, the proposed project would not have significant impacts on the bicycle and pedestrian network because the Specific Plan does not interfere with existing plans or policies related to biking and/or walking.

The proposed project is expected to generate approximately 1,900 daily walking and biking trips; 280 of which are anticipated in the morning peak hour and 240 of which are anticipated in the evening peak hour. The proposed project includes specifications to include new bicycle and pedestrian facilities that will provide access to the site. Therefore, there will be **no significant impacts** to bicycle or pedestrian facilities.

7.3.1 BICYCLE IMPACTS

Safe and adequate bicycle facilities are proposed throughout the Specific Plan area. Therefore, there are **no significant impacts** as a result of the proposed project.

7.3.2 PEDESTRIAN IMPACTS

East Boronda Road has a sidewalk on its southern portion for the road's entire extent. It does not have a sidewalk on the northern portion. According to the Central Area Specific Plan document, the proposed project will install continuous sidewalks along the northern side of East Boronda Road and throughout the Specific Plan area.

Safe and adequate pedestrian facilities are proposed throughout the Specific Plan area. Therefore, there are **no significant impacts** as a result of the proposed project.

APPENDIX A: CENTRAL AREA SPECIFIC PLAN TRIP GENERATION RATE ASSUMPTIONS

ITE Trip Generation land use category (520) - Elementary School (Adj. Streets, 4-6P)
Daily: T = 1.29(X)
AM Peak Hour: T = 0.45(X) (55% in, 45% out)
PM Peak Hour: T = 0.15(X) (49% in, 51% out)

ITE Trip Generation land use category (522) - Middle School/Junior High School (Adj Streets, 4-6P)
Daily: T = 1.62(X)
AM Peak Hour: T = 0.54(X) (55% in, 45% out)
PM Peak Hour: T = 0.16(X) (49% in, 51% out)

ITE Trip Generation land use category (530) - High School (Adj Streets, 4-6P)
Daily: T = 1.71(X),
AM Peak Hour: T = 0.43(X) (68% in, 32% out)
PM Peak Hour: T = 0.13(X) (47% in, 53% out)

ITE Trip Generation land use category (710) - General Office Building (Pk Hr, AM & PM)
Daily: T = 11.03(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 1.57 (88% in, 12% out)
PM Peak Hour: T = 1.12(X) + 78.45 (17% in, 83% out)

ITE Trip Generation land use category (850) - Supermarket (Adj Streets, 7-9A, 4-6P)
Daily: T = 102.24(X)
AM Peak Hour: T = 3.40(X) (62% in, 38% out)
PM Peak Hour: T = 9.48(X) (51% in, 49% out)

ITE Trip Generation land use category (820) - Shopping Center (Adj Streets, 7-9A, 4-6P)
Daily: T = 42.70(X)
AM Peak Hour: T = 0.96(X) (62% in, 38% out)
PM Peak Hour: T = 3.71(X) (48% in, 52% out)

ITE Trip Generation land use category (210) - Single-Family Detached Housing (Adj Streets, 7-9A, 4-6P)
Daily: T = 9.52(X)
AM Peak Hour: T = 0.70(X) + 9.74 (25% in, 75% out)
PM Peak Hour: T = 1.00(X) (63% in, 37% out)

ITE Trip Generation land use category (230) - Residential Condominium/Townhouse (Pk Adj Streets, 7-9A, 4-6P)
Daily: T = 5.81(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 0.26 (17% in, 83% out)
PM Peak Hour: Ln(T) = 0.82 * ln(X) + 0.32 (67% in, 33% out)

ITE Trip Generation land use category (220) - Apartment (Adj Streets, 7-9A, 4-6P)
Daily: T = 6.65(X)
AM Peak Hour: T = 0.51(X) (20% in, 80% out)
PM Peak Hour: T = 0.55(X) + 17.65 (65% in, 35% out)

ITE Trip Generation land use category (590) - Library (Adj Streets, 7-9A, 4-6P)
Daily: T = 56.24(X)
AM Peak Hour: T = 1.04(X) (71% in, 29% out)
PM Peak Hour: T = 7.30(X) (48% in, 52% out)

ITE Trip Generation land use category (411) - City Park (Adj Streets, 7-9A, 4-6P)
Daily: T = 1.89(X)
AM Peak Hour: T = 4.50(X) (56% in, 44% out)
PM Peak Hour: T = 3.50(X) (57% in, 43% out)

ITE Trip Generation land use category (170) - Utilities (Adj Streets, 7-9A, 4-6P)
Daily: T = 0.00(X)
AM Peak Hour: T = 2.49(X) (63% in, 37% out)
PM Peak Hour: T = 1.32(X) (45% in, 55% out)

Reductions based on application of MXD+ model:
Total Reductions: Daily = 10.7%, AM Peak Hour = 20.8%, PM Peak Hour = 22.1%
Internal Capture: Daily = 8.6%, AM Peak Hour = 17.2%, PM Peak Hour = 18.6%
External Walk, Bike, and Transit: Daily = 2.1%, AM Peak Hour = 3.6%, PM Peak Hour = 3.5%

Sources: ITE Trip Generation Manual, 9th Edition. Fehr and Peers, 2017

APPENDIX B: WEST AREA SPECIFIC PLAN TRIP GENERATION RATE ASSUMPTIONS

ITE Trip Generation land use category (520) - Elementary School (Adj. Streets, 4-6P)
Daily: T = 1.29(X)
AM Peak Hour: T = 0.45(X) (55% in, 45% out)
PM Peak Hour: T = 0.15(X) (49% in, 51% out)

ITE Trip Generation land use category (522) - Middle School/Junior High School (Adj Streets, 4-6P)
Daily: T = 1.62(X)
AM Peak Hour: T = 0.54(X) (55% in, 45% out)
PM Peak Hour: T = 0.16(X) (49% in, 51% out)

ITE Trip Generation land use category (530) - High School (Adj Streets, 4-6P)
Daily: T = 1.71(X),
AM Peak Hour: T = 0.43(X) (68% in, 32% out)
PM Peak Hour: T = 0.13(X) (47% in, 53% out)

ITE Trip Generation land use category (710) - General Office Building (Pk Hr, AM & PM)
Daily: T = 11.03(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 1.57 (88% in, 12% out)
PM Peak Hour: T = 1.12(X) + 78.45 (17% in, 83% out)

ITE Trip Generation land use category (850) - Supermarket (Adj Streets, 7-9A, 4-6P)
Daily: T = 102.24(X)
AM Peak Hour: T = 3.40(X) (62% in, 38% out)
PM Peak Hour: T = 9.48(X) (51% in, 49% out)

ITE Trip Generation land use category (820) - Shopping Center (Adj Streets, 7-9A, 4-6P)
Daily: T = 42.70(X)
AM Peak Hour: T = 0.96(X) (62% in, 38% out)
PM Peak Hour: T = 3.71(X) (48% in, 52% out)

ITE Trip Generation land use category (210) - Single-Family Detached Housing (Adj Streets, 7-9A, 4-6P)
Daily: T = 9.52(X)
AM Peak Hour: T = 0.70(X) + 9.74 (25% in, 75% out)
PM Peak Hour: T = 1.00(X) (63% in, 37%

ITE Trip Generation land use category (230) - Residential Condominium/Townhouse(Pk Adj Streets, 7-9A, 4-6P)
Daily: T = 5.81(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 0.26 (17% in, 83% out)
PM Peak Hour: Ln(T) = 0.82 * ln(X) + 0.32 (67% in, 33% out)

ITE Trip Generation land use category (220) - Apartment (Adj Streets, 7-9A, 4-6P)

Daily: T = 6.65(X)
AM Peak Hour: T = 0.51(X) (20% in, 80% out)
PM Peak Hour: T = 0.55(X) + 17.65 (65% in, 35% out)

ITE Trip Generation land use category (411) - City Park (Adj Streets, 7-9A, 4-6P)
Daily: T = 1.89(X)
AM Peak Hour: T = 4.50(X) (56% in, 44% out)
PM Peak Hour: T = 3.50(X) (57% in, 43% out)

ITE Trip Generation land use category (170) - Utilities (Adj Streets, 7-9A, 4-6P)
Daily: T = 0.00(X)
AM Peak Hour: T = 2.49(X) (63% in, 37% out)
PM Peak Hour: T = 1.32(X) (45% in, 55% out)

Reductions based on application of MXD+ model:
Total Reductions: Daily = 13.1%, AM Peak Hour = 21.4%, PM Peak Hour = 25.2%
Internal Capture: Daily = 9.1%, AM Peak Hour = 15.4%, PM Peak Hour = 20.3%
External Walk, Bike, and Transit: Daily = 4.0%, AM Peak Hour = 6.0%, PM Peak Hour = 4.9%

Sources: ITE Trip Generation Manual, 9th Edition. Fehr and Peers, 2017

APPENDIX C: TRAFFIC VOLUME COUNT SHEETS

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File Name : 1AM FINAL
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Start Date : 11/19/2015
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Groups Printed- Vehicles

	US-101 SB OFF-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 SB ON-RAMP Northbound					ECHO VALLEY RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	21	0	23	0	6	35	0	41	0	0	0	0	0	7	11	0	0	18	82
07:15 AM	1	1	36	0	38	0	4	36	0	40	0	0	0	0	0	18	11	0	0	29	107
07:30 AM	2	0	34	0	36	0	4	48	0	52	0	0	0	0	0	24	16	0	0	40	128
07:45 AM	2	1	26	0	29	0	6	32	0	38	0	0	0	0	0	16	14	0	0	30	97
Total	7	2	117	0	126	0	20	151	0	171	0	0	0	0	0	65	52	0	0	117	414
08:00 AM	2	1	16	0	19	0	5	31	0	36	0	0	0	0	0	10	13	0	0	23	78
08:15 AM	7	0	18	0	25	0	10	30	0	40	0	0	0	0	0	6	10	0	0	16	81
08:30 AM	1	1	13	1	16	0	6	20	0	26	0	0	0	0	0	5	11	0	0	16	58
08:45 AM	0	0	17	0	17	0	7	17	0	24	0	0	0	0	0	4	7	0	0	11	52
Total	10	2	64	1	77	0	28	98	0	126	0	0	0	0	0	25	41	0	0	66	269
Grand Total	17	4	181	1	203	0	48	249	0	297	0	0	0	0	0	90	93	0	0	183	683
Apprch %	8.4	2	89.2	0.5		0	16.2	83.8	0		0	0	0	0		49.2	50.8	0	0		
Total %	2.5	0.6	26.5	0.1	29.7	0	7	36.5	0	43.5	0	0	0	0	0	13.2	13.6	0	0	26.8	

	US-101 SB OFF-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 SB ON-RAMP Northbound				ECHO VALLEY RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**2**	0	21	23	0	**6**	35	41	0	0	0	0	7	11	0	18	82
07:15 AM	1	**1**	**36**	**38**	0	4	36	40	0	0	0	0	18	11	0	29	107
07:30 AM	2	0	34	36	0	4	**48**	**52**	0	0	0	0	**24**	**16**	0	**40**	**128**
07:45 AM	2	1	26	29	0	6	32	38	0	0	0	0	16	14	0	30	97
Total Volume	7	2	117	126	0	20	151	171	0	0	0	0	65	52	0	117	414
% App. Total	5.6	1.6	92.9		0	11.7	88.3		0	0	0		55.6	44.4	0		
PHF	.875	.500	.813	.829	.000	.833	.786	.822	.000	.000	.000	.000	.677	.813	.000	.731	.809

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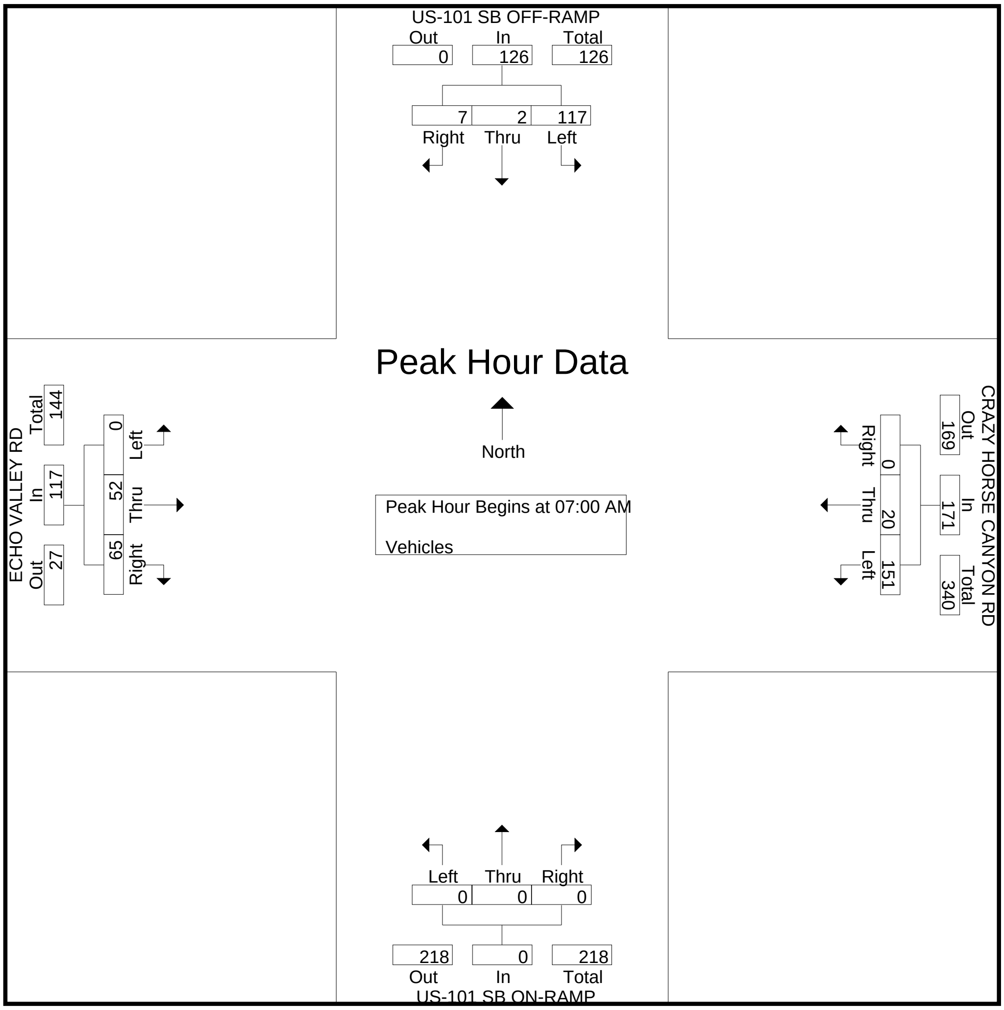

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Groups Printed- Vehicles

	US-101 NB ON-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 NB OFF-RAMP Northbound					CRAZY HORSE CANYON RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	50	19	0	0	69	5	1	21	0	27	0	27	10	0	37	133
07:15 AM	0	0	0	0	0	51	17	0	0	68	9	0	22	0	31	0	38	8	0	46	145
07:30 AM	0	0	0	0	0	59	27	0	0	86	12	0	27	0	39	0	41	12	0	53	178
07:45 AM	0	0	0	0	0	40	13	0	0	53	15	0	23	0	38	0	28	11	0	39	130
Total	0	0	0	0	0	200	76	0	0	276	41	1	93	0	135	0	134	41	0	175	586
08:00 AM	0	0	0	0	0	38	21	0	0	59	21	1	16	0	38	0	20	8	0	28	125
08:15 AM	0	0	0	0	0	38	22	0	0	60	8	0	19	0	27	0	18	10	0	28	115
08:30 AM	0	0	0	1	1	34	11	0	0	45	6	0	13	0	19	0	22	3	0	25	90
08:45 AM	0	0	0	0	0	29	10	0	0	39	4	2	14	0	20	0	18	5	0	23	82
Total	0	0	0	1	1	139	64	0	0	203	39	3	62	0	104	0	78	26	0	104	412
Grand Total	0	0	0	1	1	339	140	0	0	479	80	4	155	0	239	0	212	67	0	279	998
Apprch %	0	0	0	100		70.8	29.2	0	0		33.5	1.7	64.9	0		0	76	24	0		
Total %	0	0	0	0.1	0.1	34	14	0	0	48	8	0.4	15.5	0	23.9	0	21.2	6.7	0	28	

	US-101 NB ON-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 NB OFF-RAMP Northbound				CRAZY HORSE CANYON RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	50	19	0	69	5	**1**	21	27	0	27	10	37	133
07:15 AM	0	0	0	0	51	17	0	68	9	0	22	31	0	38	8	46	145
07:30 AM	0	0	0	0	**59**	**27**	0	**86**	12	0	**27**	**39**	0	**41**	**12**	**53**	**178**
07:45 AM	0	0	0	0	40	13	0	53	**15**	0	23	38	0	28	11	39	130
Total Volume	0	0	0	0	200	76	0	276	41	1	93	135	0	134	41	175	586
% App. Total	0	0	0		72.5	27.5	0		30.4	0.7	68.9		0	76.6	23.4		
PHF	.000	.000	.000	.000	.847	.704	.000	.802	.683	.250	.861	.865	.000	.817	.854	.825	.823

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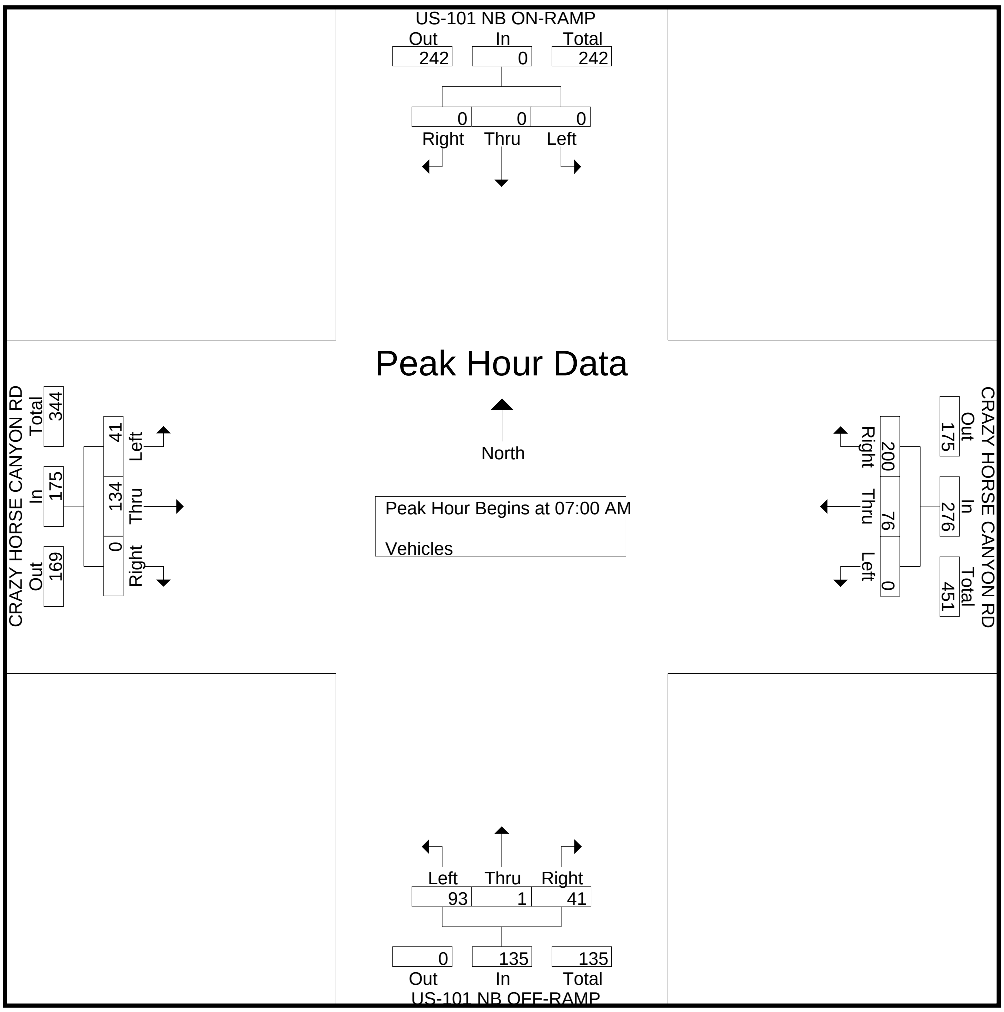

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Groups Printed- Vehicles

	US-101 NB ON-RAMP Southbound					SALA RD Westbound					US-101 NB OFF-RAMP Northbound					US-101 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	47	34	0	0	81	24	1	2	0	27	0	9	4	0	13	121
07:15 AM	0	0	0	0	0	38	30	0	0	68	25	0	1	0	26	0	15	0	0	15	109
07:30 AM	0	0	0	0	0	47	43	0	0	90	24	0	0	0	24	0	28	1	0	29	143
07:45 AM	0	0	0	0	0	43	44	0	0	87	34	0	0	0	34	0	25	0	0	25	146
Total	0	0	0	0	0	175	151	0	0	326	107	1	3	0	111	0	77	5	0	82	519
08:00 AM	0	0	0	0	0	44	34	0	0	78	31	1	1	0	33	0	18	2	0	20	131
08:15 AM	0	0	0	0	0	27	26	0	0	53	20	0	1	0	21	0	22	1	0	23	97
08:30 AM	0	0	0	0	0	30	20	0	0	50	25	1	0	0	26	0	10	2	0	12	88
08:45 AM	0	0	0	0	0	26	18	0	0	44	16	1	0	0	17	0	20	0	0	20	81
Total	0	0	0	0	0	127	98	0	0	225	92	3	2	0	97	0	70	5	0	75	397
Grand Total	0	0	0	0	0	302	249	0	0	551	199	4	5	0	208	0	147	10	0	157	916
Apprch %	0	0	0	0		54.8	45.2	0	0		95.7	1.9	2.4	0		0	93.6	6.4	0		
Total %	0	0	0	0	0	33	27.2	0	0	60.2	21.7	0.4	0.5	0	22.7	0	16	1.1	0	17.1	

	US-101 NB ON-RAMP Southbound				SALA RD Westbound				US-101 NB OFF-RAMP Northbound				US-101 SB RAMPS Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	38	30	0	68	25	0	**1**	26	0	15	0	15	109
07:30 AM	0	0	0	0	**47**	43	0	**90**	24	0	0	24	0	**28**	1	**29**	143
07:45 AM	0	0	0	0	43	**44**	0	87	**34**	0	0	**34**	0	25	0	25	**146**
08:00 AM	0	0	0	0	44	34	0	78	31	**1**	1	33	0	18	**2**	20	131
Total Volume	0	0	0	0	172	151	0	323	114	1	2	117	0	86	3	89	529
% App. Total	0	0	0		53.3	46.7	0		97.4	0.9	1.7		0	96.6	3.4		
PHF	.000	.000	.000	.000	.915	.858	.000	.897	.838	.250	.500	.860	.000	.768	.375	.767	.906

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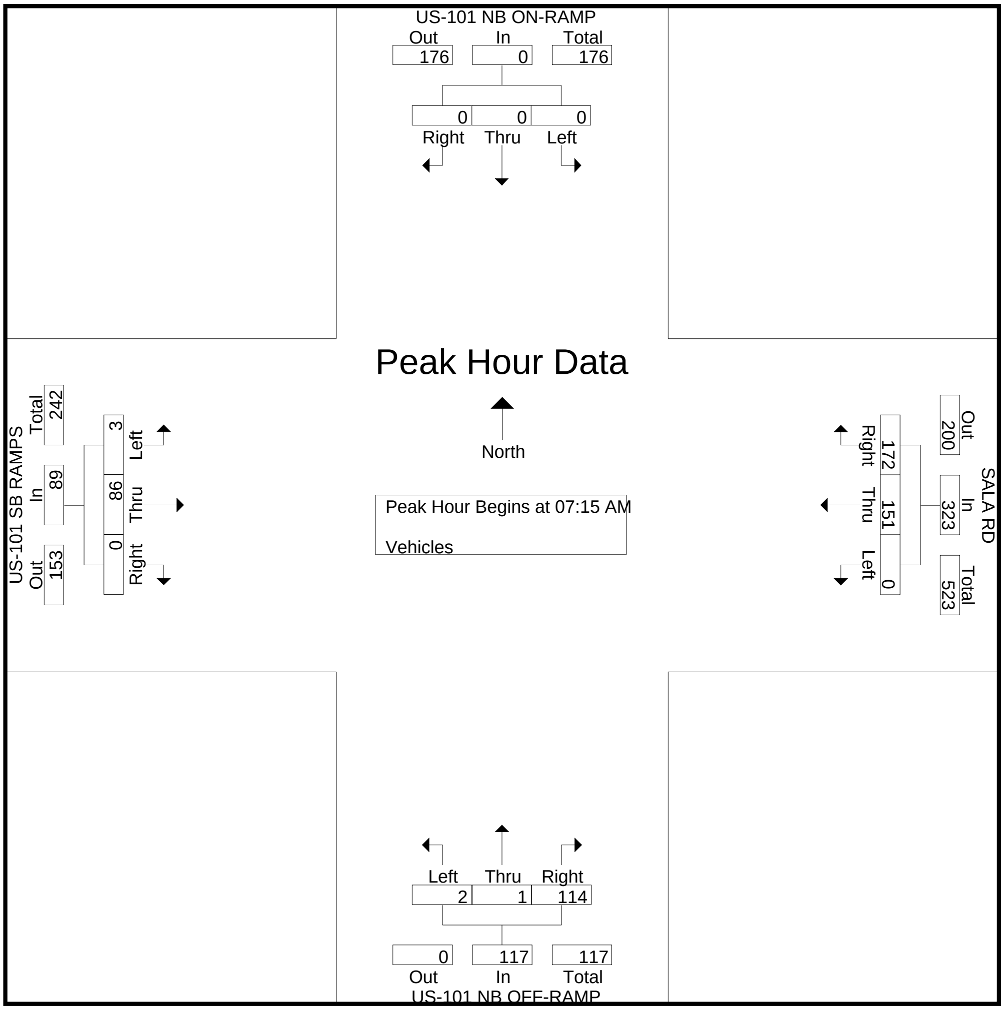

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File Name : 4AM FINAL
Site Code : 00000004
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	HARRISON RD Southbound					Westbound					HARRISON RD Northbound					SALA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	12	9	0	1	22	0	0	0	0	0	0	10	70	0	80	18	0	17	0	35	137
07:15 AM	11	14	0	0	25	0	0	0	0	0	0	8	57	0	65	29	0	6	0	35	125
07:30 AM	15	17	0	0	32	0	0	0	0	0	0	9	74	0	83	47	0	6	0	53	168
07:45 AM	23	19	0	0	42	0	0	0	0	0	0	11	65	0	76	50	0	8	0	58	176
Total	61	59	0	1	121	0	0	0	0	0	0	38	266	0	304	144	0	37	0	181	606
08:00 AM	14	21	0	0	35	0	0	0	0	0	0	11	63	0	74	44	0	8	0	52	161
08:15 AM	14	19	0	0	33	0	0	0	0	0	0	12	40	0	52	30	0	12	1	43	128
08:30 AM	11	10	0	0	21	0	0	0	0	0	0	13	39	0	52	29	0	6	0	35	108
08:45 AM	8	19	0	0	27	0	0	0	0	0	0	6	37	0	43	33	0	2	0	35	105
Total	47	69	0	0	116	0	0	0	0	0	0	42	179	0	221	136	0	28	1	165	502
Grand Total	108	128	0	1	237	0	0	0	0	0	0	80	445	0	525	280	0	65	1	346	1108
Apprch %	45.6	54	0	0.4		0	0	0	0		0	15.2	84.8	0		80.9	0	18.8	0.3		
Total %	9.7	11.6	0	0.1	21.4	0	0	0	0	0	0	7.2	40.2	0	47.4	25.3	0	5.9	0.1	31.2	

	HARRISON RD Southbound				Westbound				HARRISON RD Northbound				SALA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	15	17	0	32	0	0	0	0	0	9	**74**	**83**	47	0	6	53	168
07:45 AM	**23**	19	0	**42**	0	0	0	0	0	11	65	76	**50**	0	8	**58**	**176**
08:00 AM	14	**21**	0	35	0	0	0	0	0	11	63	74	44	0	8	52	161
08:15 AM	14	19	0	33	0	0	0	0	0	**12**	40	52	30	0	**12**	42	127
Total Volume	66	76	0	142	0	0	0	0	0	43	242	285	171	0	34	205	632
% App. Total	46.5	53.5	0		0	0	0		0	15.1	84.9		83.4	0	16.6		
PHF	.717	.905	.000	.845	.000	.000	.000	.000	.000	.896	.818	.858	.855	.000	.708	.884	.898

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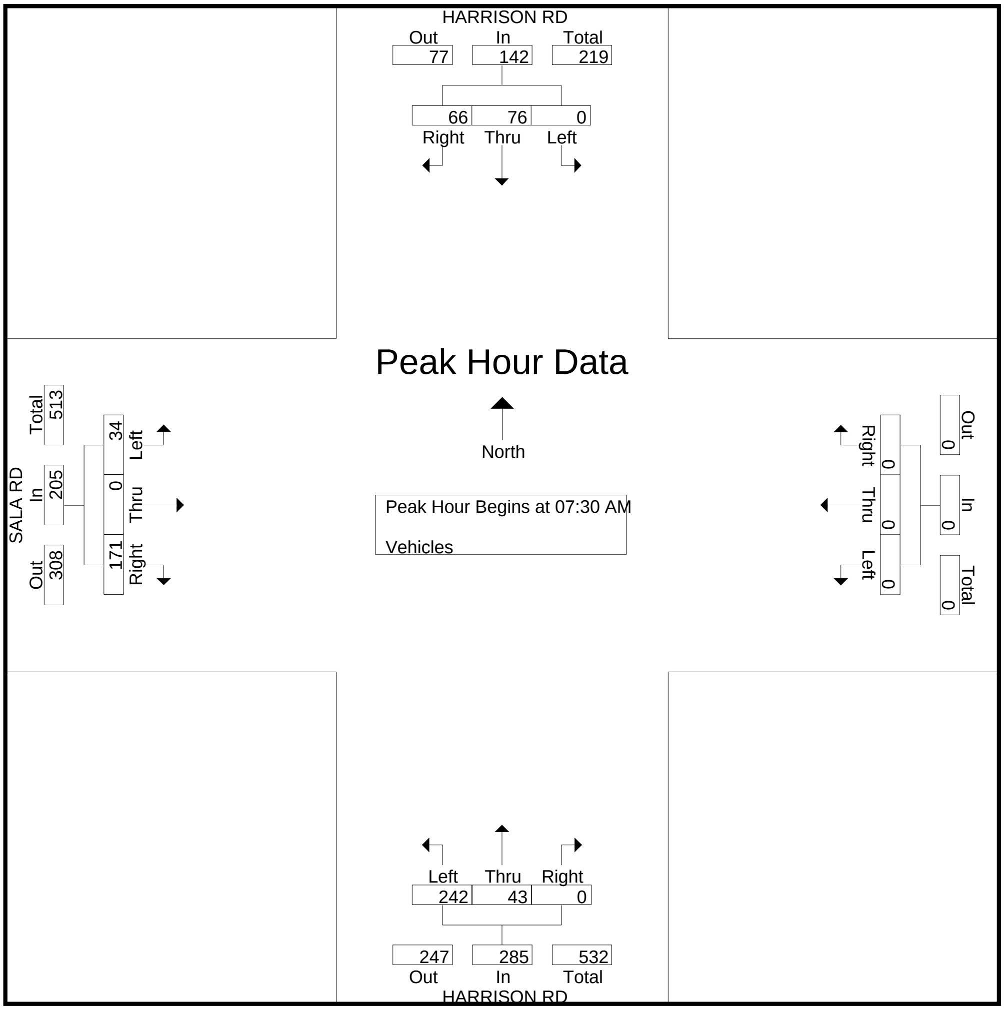

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File Name : 5AM FINAL
Site Code : 00000005
Start Date : 11/19/2015

Groups Printed- Vehicles

	CRAZY HORSE CANYON RD Southbound					SAN JUAN GRADE RD Westbound					CRAZY HORSE CANYON RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	27	3	0	0	30	0	0	1	0	1	0	3	2	0	5	0	1	45	0	46	82
07:15 AM	35	1	1	0	37	0	0	0	0	0	0	8	2	0	10	0	0	54	0	54	101
07:30 AM	51	3	0	0	54	0	0	0	0	0	1	6	2	0	9	0	1	66	0	67	130
07:45 AM	36	3	4	0	43	1	2	0	0	3	0	4	1	0	5	0	1	43	0	44	95
Total	149	10	5	0	164	1	2	1	0	4	1	21	7	0	29	0	3	208	0	211	408
08:00 AM	35	2	0	0	37	1	4	1	0	6	0	3	2	0	5	0	1	41	0	42	90
08:15 AM	28	1	0	0	29	0	2	0	0	2	0	2	3	0	5	0	3	49	0	52	88
08:30 AM	24	1	0	0	25	0	1	1	0	2	1	2	0	0	3	0	3	38	0	41	71
08:45 AM	20	3	0	0	23	0	0	0	0	0	0	1	1	0	2	0	0	23	0	23	48
Total	107	7	0	0	114	1	7	2	0	10	1	8	6	0	15	0	7	151	0	158	297
Grand Total	256	17	5	0	278	2	9	3	0	14	2	29	13	0	44	0	10	359	0	369	705
Apprch %	92.1	6.1	1.8	0		14.3	64.3	21.4	0		4.5	65.9	29.5	0		0	2.7	97.3	0		
Total %	36.3	2.4	0.7	0	39.4	0.3	1.3	0.4	0	2	0.3	4.1	1.8	0	6.2	0	1.4	50.9	0	52.3	

	CRAZY HORSE CANYON RD Southbound				SAN JUAN GRADE RD Westbound				CRAZY HORSE CANYON RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	35	1	1	37	0	0	0	0	0	**8**	**2**	**10**	0	0	54	54	101
07:30 AM	**51**	**3**	0	**54**	0	0	0	0	**1**	6	2	9	0	**1**	**66**	**67**	**130**
07:45 AM	36	3	**4**	43	**1**	2	0	3	0	4	1	5	0	1	43	44	95
08:00 AM	35	2	0	37	1	**4**	**1**	**6**	0	3	2	5	0	1	41	42	90
Total Volume	157	9	5	171	2	6	1	9	1	21	7	29	0	3	204	207	416
% App. Total	91.8	5.3	2.9		22.2	66.7	11.1		3.4	72.4	24.1		0	1.4	98.6		
PHF	.770	.750	.313	.792	.500	.375	.250	.375	.250	.656	.875	.725	.000	.750	.773	.772	.800

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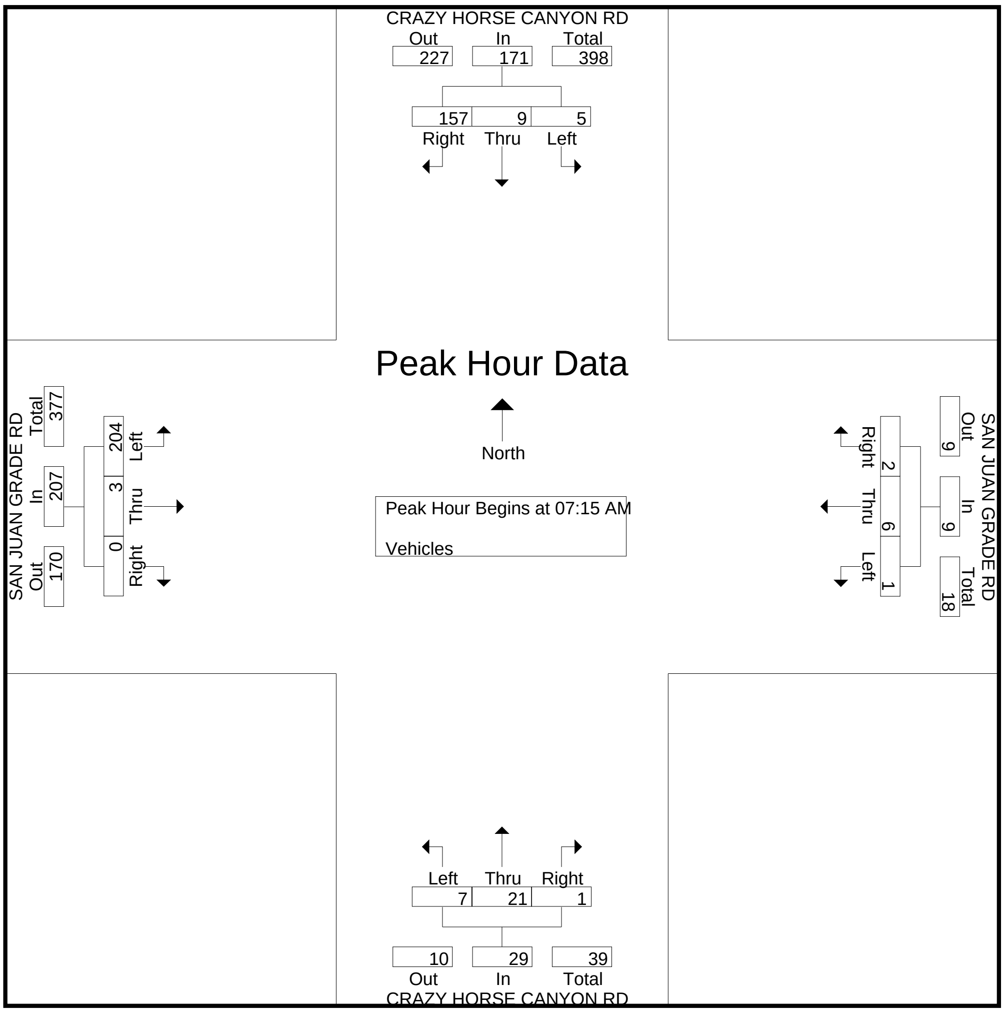

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File Name : 6AM FINAL
Site Code : 00000006
Start Date : 11/17/2015
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Groups Printed- Vehicles

	HERBERT RD Southbound					SAN JUAN GRADE RD Westbound					HERBERT RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	5	10	27	0	42	42	5	4	0	51	11	12	6	0	29	123
07:15 AM	2	0	0	0	2	0	20	28	0	48	57	8	3	0	68	5	13	2	0	20	138
07:30 AM	0	0	2	0	2	0	24	36	0	60	58	1	4	0	63	7	27	2	0	36	161
07:45 AM	1	1	1	0	3	1	22	35	0	58	43	1	6	0	50	1	26	1	0	28	139
Total	4	1	3	0	8	6	76	126	0	208	200	15	17	0	232	24	78	11	0	113	561
08:00 AM	0	0	0	0	0	5	28	25	0	58	27	0	4	0	31	4	23	2	0	29	118
08:15 AM	1	0	0	0	1	1	17	23	0	41	25	0	6	0	31	6	16	0	0	22	95
08:30 AM	4	0	0	0	4	1	13	19	0	33	25	0	3	0	28	3	9	0	0	12	77
08:45 AM	1	1	0	0	2	0	11	11	0	22	22	1	1	0	24	3	5	1	0	9	57
Total	6	1	0	0	7	7	69	78	0	154	99	1	14	0	114	16	53	3	0	72	347
Grand Total	10	2	3	0	15	13	145	204	0	362	299	16	31	0	346	40	131	14	0	185	908
Apprch %	66.7	13.3	20	0		3.6	40.1	56.4	0		86.4	4.6	9	0		21.6	70.8	7.6	0		
Total %	1.1	0.2	0.3	0	1.7	1.4	16	22.5	0	39.9	32.9	1.8	3.4	0	38.1	4.4	14.4	1.5	0	20.4	

	HERBERT RD Southbound				SAN JUAN GRADE RD Westbound				HERBERT RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	0	0	1	**5**	10	27	42	42	5	4	51	**11**	12	**6**	29	123
07:15 AM	**2**	0	0	2	0	20	28	48	57	**8**	3	**68**	5	13	2	20	138
07:30 AM	0	0	**2**	2	0	**24**	**36**	**60**	**58**	1	4	63	7	**27**	2	**36**	**161**
07:45 AM	1	**1**	1	**3**	1	22	35	58	43	1	**6**	50	1	26	1	28	139
Total Volume	4	1	3	8	6	76	126	208	200	15	17	232	24	78	11	113	561
% App. Total	50	12.5	37.5		2.9	36.5	60.6		86.2	6.5	7.3		21.2	69	9.7		
PHF	.500	.250	.375	.667	.300	.792	.875	.867	.862	.469	.708	.853	.545	.722	.458	.785	.871

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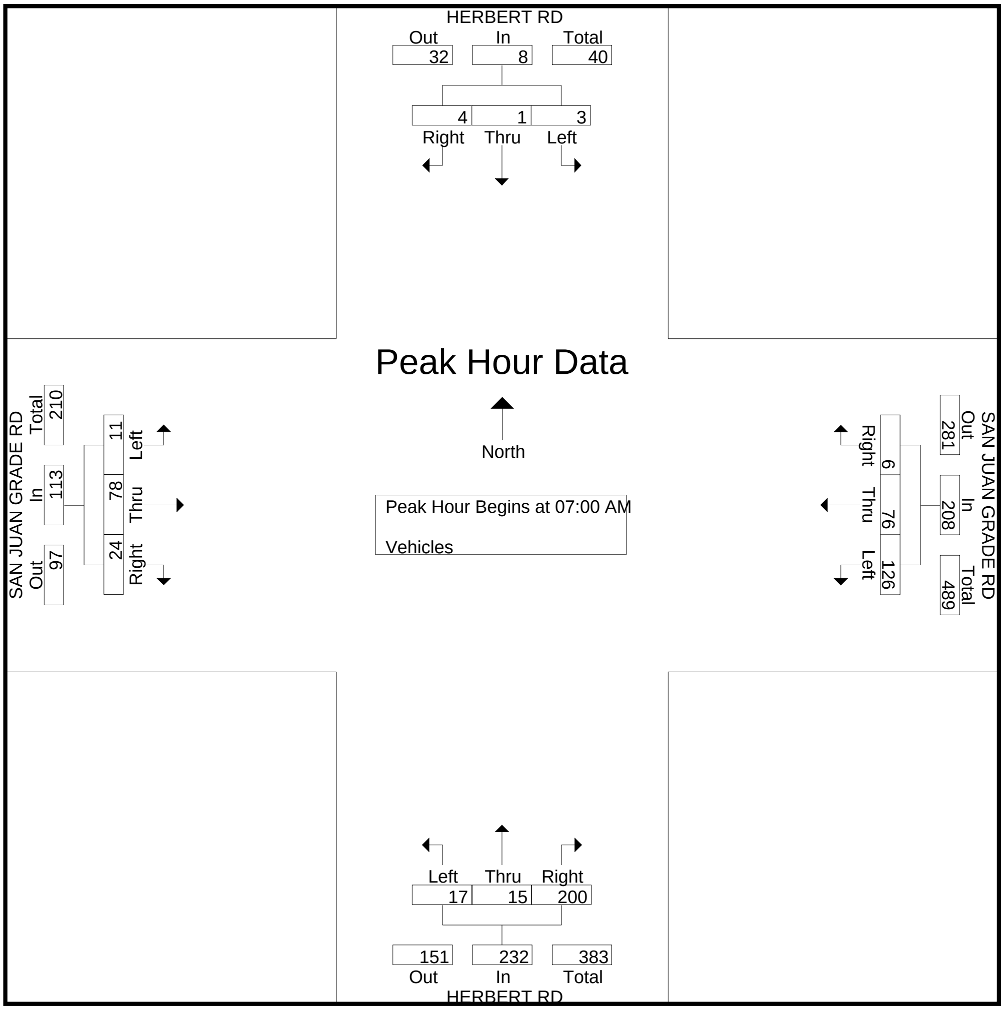

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File Name : 7AM FINAL
Site Code : 00000007
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	HERBERT RD Southbound					OLD STAGE RD Westbound					OLD STAGE RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	22	0	0	22	0	0	1	0	1	6	66	0	0	72	0	0	0	0	0	95
07:15 AM	0	40	3	0	43	1	0	4	0	5	3	76	0	0	79	0	0	0	0	0	127
07:30 AM	0	47	0	0	47	0	0	7	0	7	7	64	0	0	71	0	0	0	0	0	125
07:45 AM	0	46	0	0	46	0	0	6	0	6	6	46	0	0	52	0	0	0	0	0	104
Total	0	155	3	0	158	1	0	18	0	19	22	252	0	0	274	0	0	0	0	0	451
08:00 AM	0	31	0	0	31	0	0	5	0	5	5	28	0	0	33	0	0	0	0	0	69
08:15 AM	0	30	0	0	30	0	0	1	0	1	3	26	0	0	29	0	0	0	0	0	60
08:30 AM	0	23	0	0	23	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	48
08:45 AM	0	26	0	0	26	0	0	3	0	3	2	23	0	0	25	0	0	0	0	0	54
Total	0	110	0	0	110	0	0	9	0	9	10	102	0	0	112	0	0	0	0	0	231
Grand Total	0	265	3	0	268	1	0	27	0	28	32	354	0	0	386	0	0	0	0	0	682
Apprch %	0	98.9	1.1	0		3.6	0	96.4	0		8.3	91.7	0	0		0	0	0	0		
Total %	0	38.9	0.4	0	39.3	0.1	0	4	0	4.1	4.7	51.9	0	0	56.6	0	0	0	0	0	

	HERBERT RD Southbound				OLD STAGE RD Westbound				OLD STAGE RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	22	0	22	0	0	1	1	6	66	0	72	0	0	0	0	95
07:15 AM	0	40	**3**	43	**1**	0	4	5	3	**76**	0	**79**	0	0	0	0	**127**
07:30 AM	0	**47**	0	**47**	0	0	**7**	**7**	**7**	64	0	71	0	0	0	0	125
07:45 AM	0	46	0	46	0	0	6	6	6	46	0	52	0	0	0	0	104
Total Volume	0	155	3	158	1	0	18	19	22	252	0	274	0	0	0	0	451
% App. Total	0	98.1	1.9		5.3	0	94.7		8	92	0		0	0	0		
PHF	.000	.824	.250	.840	.250	.000	.643	.679	.786	.829	.000	.867	.000	.000	.000	.000	.888

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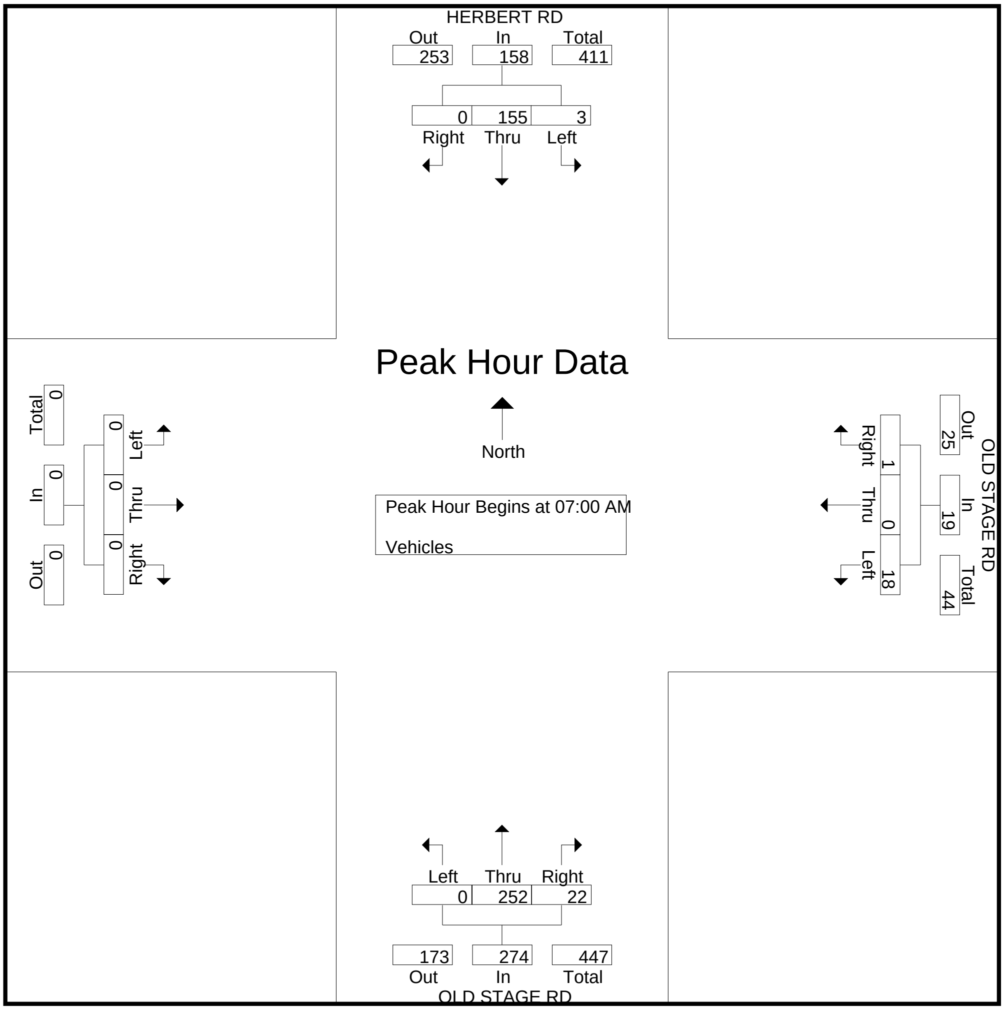

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File Name : 8AM FINAL
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Groups Printed- Vehicles

	HARRISON RD Southbound					RUSSELL RD Westbound					N MAIN ST Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	8	6	8	0	22	48	59	8	0	115	15	24	71	0	110	17	13	4	0	34	281
07:15 AM	18	11	15	0	44	43	44	19	0	106	18	23	47	1	89	40	16	5	0	61	300
07:30 AM	15	15	25	0	55	64	31	26	0	121	26	13	43	0	82	41	25	2	0	68	326
07:45 AM	24	13	35	0	72	43	54	43	0	140	42	24	53	0	119	54	16	7	0	77	408
Total	65	45	83	0	193	198	188	96	0	482	101	84	214	1	400	152	70	18	0	240	1315
08:00 AM	28	14	28	0	70	47	36	47	0	130	45	19	45	0	109	35	17	9	0	61	370
08:15 AM	9	15	23	0	47	29	38	31	0	98	20	12	40	0	72	35	13	6	0	54	271
08:30 AM	18	10	12	0	40	30	29	10	0	69	13	11	36	0	60	37	19	9	1	66	235
08:45 AM	16	11	13	0	40	26	17	16	1	60	17	15	27	0	59	34	9	7	0	50	209
Total	71	50	76	0	197	132	120	104	1	357	95	57	148	0	300	141	58	31	1	231	1085
Grand Total	136	95	159	0	390	330	308	200	1	839	196	141	362	1	700	293	128	49	1	471	2400
Apprch %	34.9	24.4	40.8	0		39.3	36.7	23.8	0.1		28	20.1	51.7	0.1		62.2	27.2	10.4	0.2		
Total %	5.7	4	6.6	0	16.2	13.8	12.8	8.3	0	35	8.2	5.9	15.1	0	29.2	12.2	5.3	2	0	19.6	

	HARRISON RD Southbound				RUSSELL RD Westbound				N MAIN ST Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	18	11	15	44	43	44	19	106	18	23	47	88	40	16	5	61	299
07:30 AM	15	**15**	25	55	**64**	31	26	121	26	13	43	82	41	**25**	2	68	326
07:45 AM	24	13	**35**	**72**	43	**54**	43	**140**	42	**24**	**53**	**119**	**54**	16	7	**77**	**408**
08:00 AM	**28**	14	28	70	47	36	**47**	130	**45**	19	45	109	35	17	**9**	61	370
Total Volume	85	53	103	241	197	165	135	497	131	79	188	398	170	74	23	267	1403
% App. Total	35.3	22	42.7		39.6	33.2	27.2		32.9	19.8	47.2		63.7	27.7	8.6		
PHF	.759	.883	.736	.837	.770	.764	.718	.888	.728	.823	.887	.836	.787	.740	.639	.867	.860

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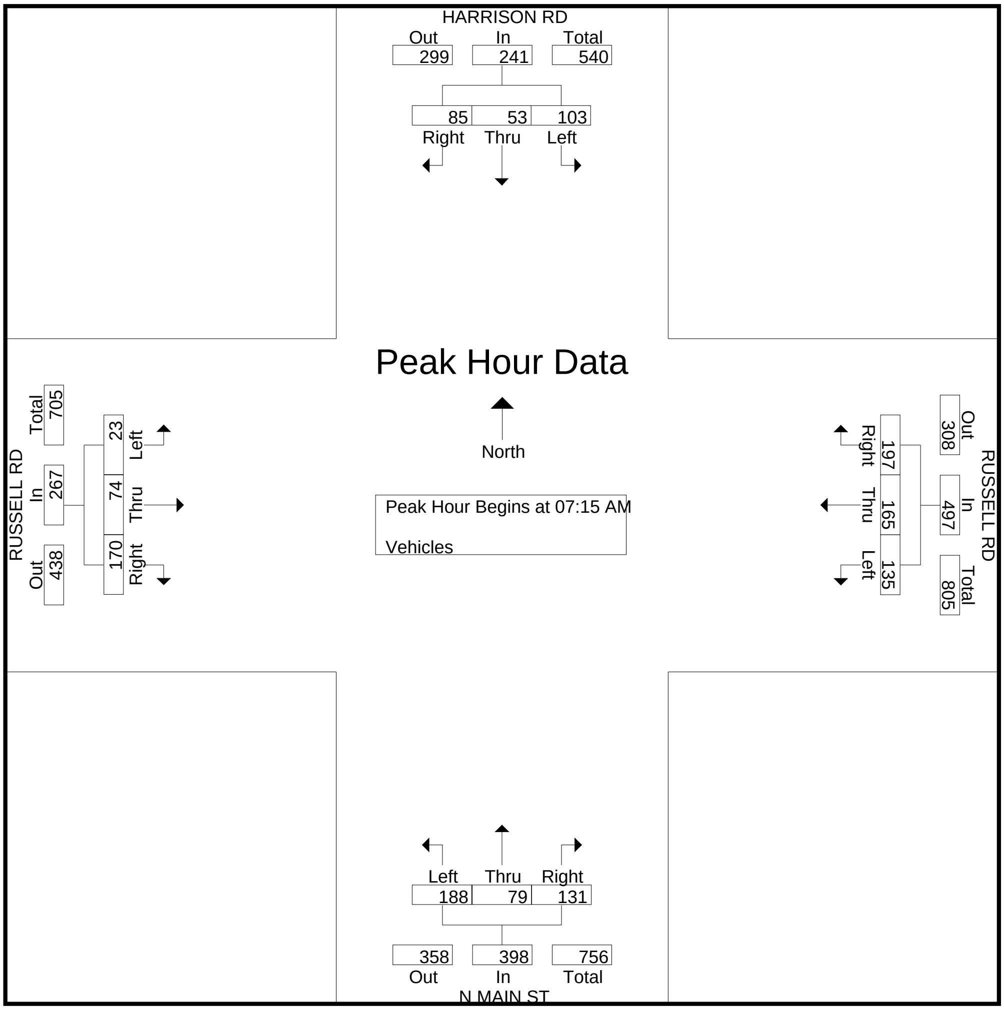

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File Name : 9AM FINAL
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Start Date : 11/17/2015
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Groups Printed- Vehicles

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	1	1	0	3	3	86	1	0	90	2	1	19	0	22	6	29	0	0	35	150
07:15 AM	1	3	2	0	6	7	69	1	0	77	5	4	26	1	36	9	37	0	3	49	168
07:30 AM	2	20	11	0	33	29	69	5	0	103	12	25	20	1	58	6	62	2	15	85	279
07:45 AM	3	35	30	1	69	42	77	6	0	125	16	42	16	2	76	15	81	5	33	134	404
Total	7	59	44	1	111	81	301	13	0	395	35	72	81	4	192	36	209	7	51	303	1001
08:00 AM	12	40	11	0	63	20	85	4	0	109	9	41	16	15	81	14	84	4	22	124	377
08:15 AM	0	3	3	0	6	0	79	8	0	87	8	2	12	4	26	14	50	1	0	65	184
08:30 AM	1	0	0	0	1	0	51	5	0	56	3	0	10	1	14	6	37	0	2	45	116
08:45 AM	0	0	3	0	3	0	38	1	0	39	3	1	8	0	12	5	28	0	0	33	87
Total	13	43	17	0	73	20	253	18	0	291	23	44	46	20	133	39	199	5	24	267	764
Grand Total	20	102	61	1	184	101	554	31	0	686	58	116	127	24	325	75	408	12	75	570	1765
Apprch %	10.9	55.4	33.2	0.5		14.7	80.8	4.5	0		17.8	35.7	39.1	7.4		13.2	71.6	2.1	13.2		
Total %	1.1	5.8	3.5	0.1	10.4	5.7	31.4	1.8	0	38.9	3.3	6.6	7.2	1.4	18.4	4.2	23.1	0.7	4.2	32.3	

	VAN BUREN AVE Southbound				RUSSELL RD Westbound				VAN BUREN AVE Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	2	20	11	33	29	69	5	103	12	25	**20**	57	6	62	2	70	263
07:45 AM	3	35	**30**	**68**	**42**	77	6	**125**	**16**	**42**	16	**74**	**15**	81	**5**	101	**368**
08:00 AM	**12**	**40**	11	63	20	**85**	4	109	9	41	16	66	14	**84**	4	**102**	340
08:15 AM	0	3	3	6	0	79	**8**	87	8	2	12	22	14	50	1	65	180
Total Volume	17	98	55	170	91	310	23	424	45	110	64	219	49	277	12	338	1151
% App. Total	10	57.6	32.4		21.5	73.1	5.4		20.5	50.2	29.2		14.5	82	3.6		
PHF	.354	.613	.458	.625	.542	.912	.719	.848	.703	.655	.800	.740	.817	.824	.600	.828	.782

Traffic Data Service

Campbell, CA

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File Name : 9AM FINAL
Site Code : 00000009
Start Date : 11/17/2015
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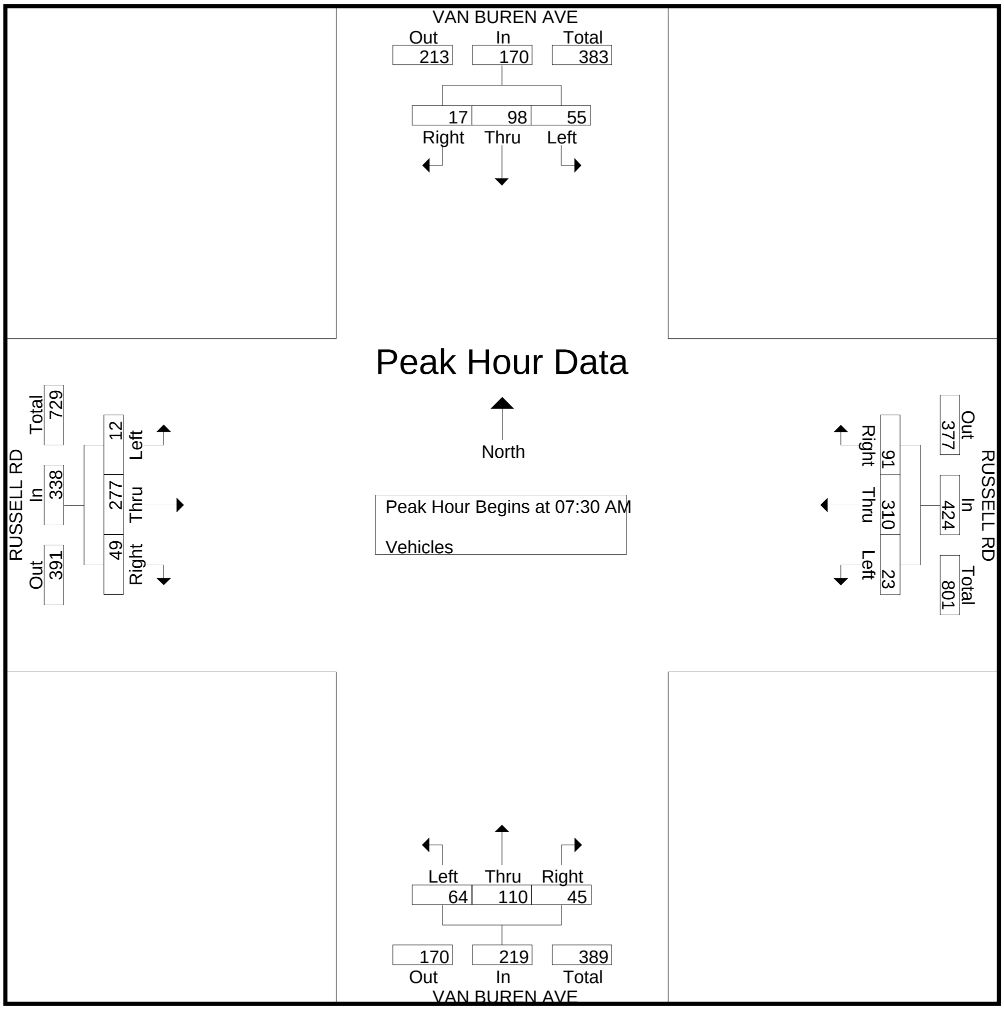

Traffic Data Service

Campbell, CA

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File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					ROGGE RD Westbound					SAN JUAN GRADE RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	39	4	0	43	9	0	25	0	34	19	29	0	0	48	0	0	5	0	5	130
07:15 AM	0	45	5	0	50	6	1	26	0	33	31	31	0	0	62	1	2	1	0	4	149
07:30 AM	0	58	10	0	68	7	0	55	0	62	67	30	0	0	97	3	2	2	0	7	234
07:45 AM	0	38	18	0	56	17	0	71	0	88	96	28	0	5	129	0	5	9	4	18	291
Total	0	180	37	0	217	39	1	177	0	217	213	118	0	5	336	4	9	17	4	34	804
08:00 AM	2	56	22	0	80	11	3	87	1	102	79	37	2	5	123	0	13	7	1	21	326
08:15 AM	2	38	14	0	54	13	0	50	0	63	50	27	1	1	79	0	4	1	0	5	201
08:30 AM	0	46	7	0	53	10	0	27	0	37	33	25	0	1	59	1	2	1	0	4	153
08:45 AM	0	33	6	0	39	6	0	19	0	25	31	17	0	0	48	0	2	1	0	3	115
Total	4	173	49	0	226	40	3	183	1	227	193	106	3	7	309	1	21	10	1	33	795
Grand Total	4	353	86	0	443	79	4	360	1	444	406	224	3	12	645	5	30	27	5	67	1599
Apprch %	0.9	79.7	19.4	0		17.8	0.9	81.1	0.2		62.9	34.7	0.5	1.9		7.5	44.8	40.3	7.5		
Total %	0.3	22.1	5.4	0	27.7	4.9	0.3	22.5	0.1	27.8	25.4	14	0.2	0.8	40.3	0.3	1.9	1.7	0.3	4.2	

	SAN JUAN GRADE RD Southbound				ROGGE RD Westbound				SAN JUAN GRADE RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**58**	10	68	7	0	55	62	67	30	0	97	**3**	2	2	7	234
07:45 AM	0	38	18	56	**17**	0	71	88	**96**	28	0	**124**	0	5	**9**	14	282
08:00 AM	**2**	56	**22**	**80**	11	**3**	**87**	**101**	79	**37**	**2**	118	0	**13**	7	**20**	**319**
08:15 AM	2	38	14	54	13	0	50	63	50	27	1	78	0	4	1	5	200
Total Volume	4	190	64	258	48	3	263	314	292	122	3	417	3	24	19	46	1035
% App. Total	1.6	73.6	24.8		15.3	1	83.8		70	29.3	0.7		6.5	52.2	41.3		
PHF	.500	.819	.727	.806	.706	.250	.756	.777	.760	.824	.375	.841	.250	.462	.528	.575	.811

Traffic Data Service

Campbell, CA
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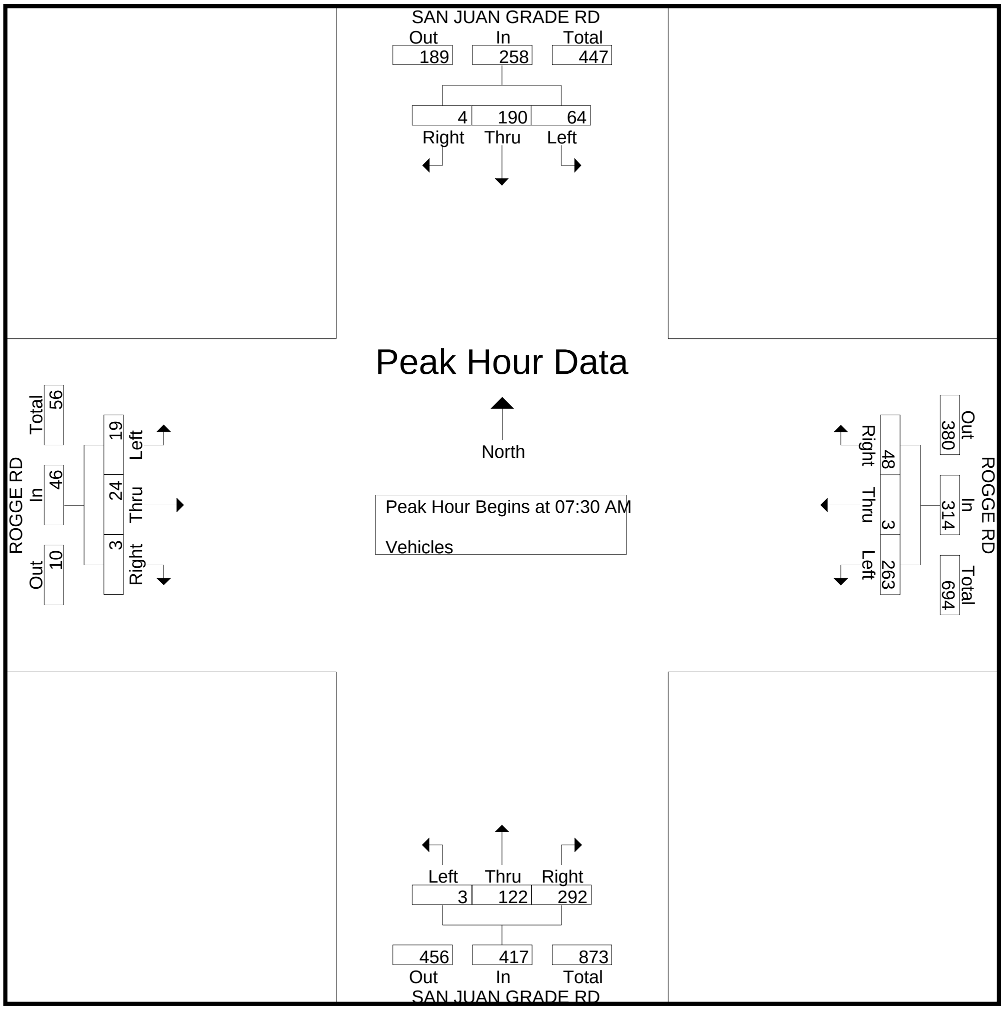
File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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tdsbay@cs.com

File Name : 11AM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	43	52	0	0	95	0	0	0	0	0	0	26	22	0	48	9	0	24	0	33	176
07:15 AM	37	54	0	0	91	0	0	0	0	0	0	46	26	0	72	22	0	26	0	48	211
07:30 AM	52	116	0	0	168	0	0	0	0	0	0	73	42	3	118	35	0	53	0	88	374
07:45 AM	59	101	1	0	161	0	0	0	0	0	0	94	65	1	160	62	0	75	0	137	458
Total	191	323	1	0	515	0	0	0	0	0	0	239	155	4	398	128	0	178	0	306	1219
08:00 AM	59	144	0	0	203	0	0	0	0	0	0	83	43	0	126	33	0	88	0	121	450
08:15 AM	82	91	0	0	173	0	0	0	0	0	0	52	17	0	69	29	0	47	0	76	318
08:30 AM	30	68	0	0	98	0	0	0	0	0	0	42	21	0	63	25	0	24	0	49	210
08:45 AM	29	59	0	0	88	0	0	0	0	0	0	32	9	0	41	19	0	24	0	43	172
Total	200	362	0	0	562	0	0	0	0	0	0	209	90	0	299	106	0	183	0	289	1150
Grand Total	391	685	1	0	1077	0	0	0	0	0	0	448	245	4	697	234	0	361	0	595	2369
Apprch %	36.3	63.6	0.1	0		0	0	0	0		0	64.3	35.2	0.6		39.3	0	60.7	0		
Total %	16.5	28.9	0	0	45.5	0	0	0	0	0	0	18.9	10.3	0.2	29.4	9.9	0	15.2	0	25.1	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	52	116	0	168	0	0	0	0	0	73	42	115	35	0	53	88	371
07:45 AM	59	101	**1**	161	0	0	0	0	0	**94**	**65**	**159**	**62**	0	75	**137**	**457**
08:00 AM	59	**144**	0	**203**	0	0	0	0	0	83	43	126	33	0	**88**	121	450
08:15 AM	**82**	91	0	173	0	0	0	0	0	52	17	69	29	0	47	76	318
Total Volume	252	452	1	705	0	0	0	0	0	302	167	469	159	0	263	422	1596
% App. Total	35.7	64.1	0.1		0	0	0		0	64.4	35.6		37.7	0	62.3		
PHF	.768	.785	.250	.868	.000	.000	.000	.000	.000	.803	.642	.737	.641	.000	.747	.770	.873

Traffic Data Service

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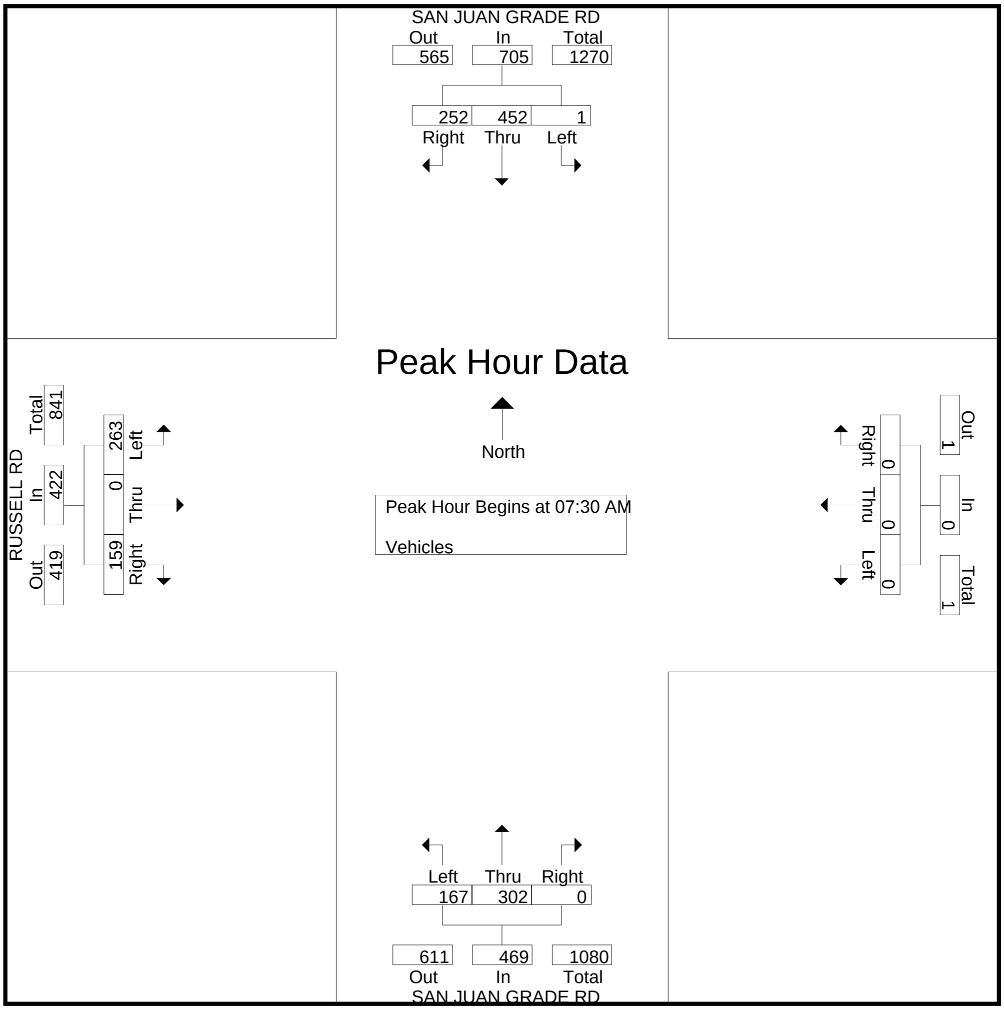
File Name : 11AM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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File Name : 12AM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	21	0	0	23	0	0	0	0	0	0	63	22	0	85	9	0	4	0	13	121
07:15 AM	9	38	0	0	47	0	0	0	0	0	0	62	26	0	88	16	0	6	0	22	157
07:30 AM	3	43	0	0	46	0	0	0	0	0	0	60	48	0	108	46	0	13	0	59	213
07:45 AM	12	48	0	0	60	0	0	0	0	0	0	49	93	0	142	74	0	12	0	86	288
Total	26	150	0	0	176	0	0	0	0	0	0	234	189	0	423	145	0	35	0	180	779
08:00 AM	15	27	0	0	42	0	0	0	0	0	0	48	70	0	118	59	0	12	0	71	231
08:15 AM	6	27	0	0	33	0	0	0	0	0	0	30	32	0	62	45	0	14	1	60	155
08:30 AM	8	39	0	0	47	0	0	0	0	0	0	26	23	0	49	42	0	4	1	47	143
08:45 AM	3	32	0	0	35	0	0	0	0	0	0	37	23	0	60	39	0	17	0	56	151
Total	32	125	0	0	157	0	0	0	0	0	0	141	148	0	289	185	0	47	2	234	680
Grand Total	58	275	0	0	333	0	0	0	0	0	0	375	337	0	712	330	0	82	2	414	1459
Apprch %	17.4	82.6	0	0		0	0	0	0		0	52.7	47.3	0		79.7	0	19.8	0.5		
Total %	4	18.8	0	0	22.8	0	0	0	0	0	0	25.7	23.1	0	48.8	22.6	0	5.6	0.1	28.4	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	9	38	0	47	0	0	0	0	0	**62**	26	88	16	0	6	22	157
07:30 AM	3	43	0	46	0	0	0	0	0	60	48	108	46	0	**13**	59	213
07:45 AM	12	**48**	0	**60**	0	0	0	0	0	49	**93**	**142**	**74**	0	12	**86**	**288**
08:00 AM	**15**	27	0	42	0	0	0	0	0	48	70	118	59	0	12	71	231
Total Volume	39	156	0	195	0	0	0	0	0	219	237	456	195	0	43	238	889
% App. Total	20	80	0		0	0	0		0	48	52		81.9	0	18.1		
PHF	.650	.813	.000	.813	.000	.000	.000	.000	.000	.883	.637	.803	.659	.000	.827	.692	.772

Traffic Data Service

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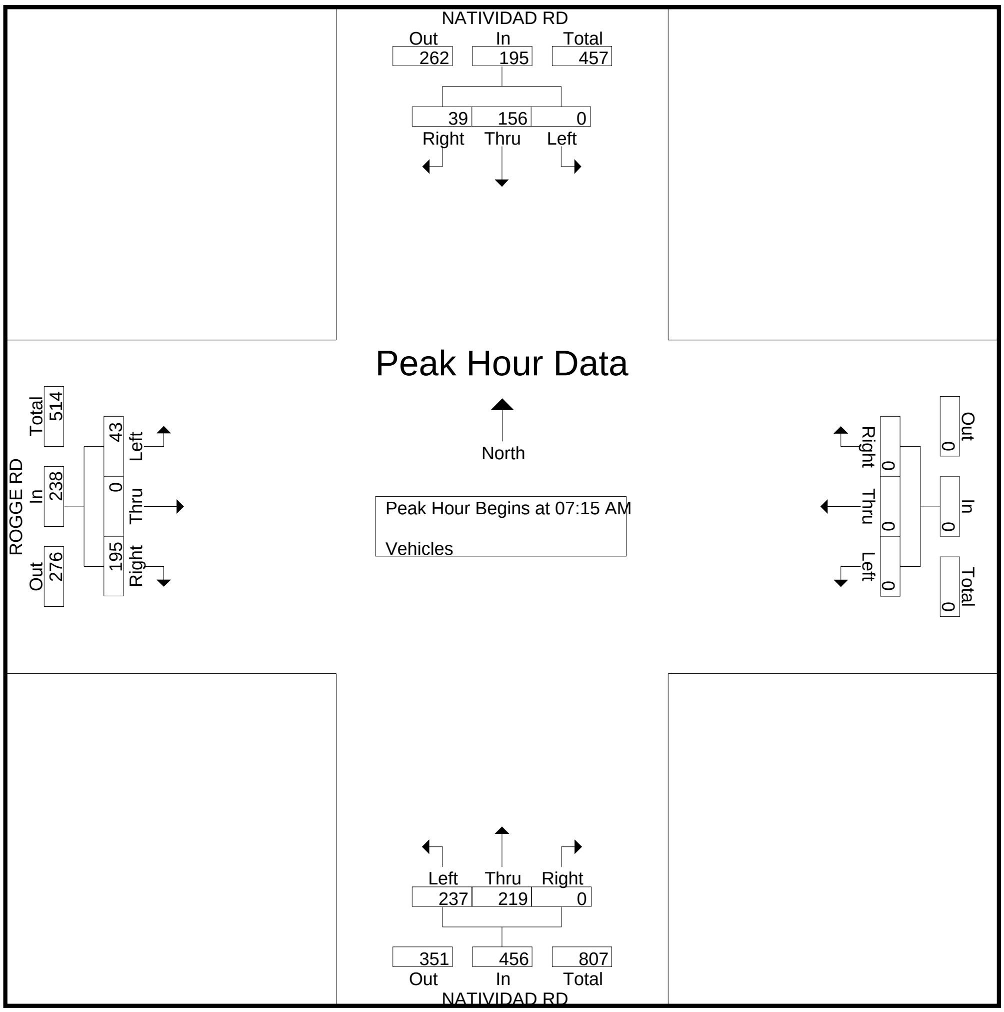
File Name : 12AM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/18/2015

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	68	0	0	68	0	0	0	0	0	0	42	7	0	49	17	0	2	0	19	136
07:15 AM	3	79	0	0	82	0	0	0	0	0	0	50	4	0	54	23	0	1	0	24	160
07:30 AM	1	141	0	0	142	0	0	0	0	0	0	117	11	0	128	53	0	2	0	55	325
07:45 AM	5	168	0	0	173	0	0	0	0	0	0	144	27	0	171	61	0	2	0	63	407
Total	9	456	0	0	465	0	0	0	0	0	0	353	49	0	402	154	0	7	0	161	1028
08:00 AM	5	164	0	0	169	0	0	0	0	0	0	142	20	0	162	31	0	4	0	35	366
08:15 AM	0	147	0	0	147	0	0	0	0	0	0	56	12	0	68	28	0	1	0	29	244
08:30 AM	1	83	0	0	84	0	0	0	0	0	0	75	25	0	100	20	0	1	0	21	205
08:45 AM	1	69	0	0	70	0	0	0	0	0	0	52	10	0	62	18	0	0	0	18	150
Total	7	463	0	0	470	0	0	0	0	0	0	325	67	0	392	97	0	6	0	103	965
Grand Total	16	919	0	0	935	0	0	0	0	0	0	678	116	0	794	251	0	13	0	264	1993
Apprch %	1.7	98.3	0	0		0	0	0	0		0	85.4	14.6	0		95.1	0	4.9	0		
Total %	0.8	46.1	0	0	46.9	0	0	0	0	0	0	34	5.8	0	39.8	12.6	0	0.7	0	13.2	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				VAN BUREN AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	141	0	142	0	0	0	0	0	117	11	128	53	0	2	55	325
07:45 AM	**5**	**168**	0	**173**	0	0	0	0	0	**144**	**27**	**171**	**61**	0	2	**63**	**407**
08:00 AM	5	164	0	169	0	0	0	0	0	142	20	162	31	0	**4**	35	366
08:15 AM	0	147	0	147	0	0	0	0	0	56	12	68	28	0	1	29	244
Total Volume	11	620	0	631	0	0	0	0	0	459	70	529	173	0	9	182	1342
% App. Total	1.7	98.3	0		0	0	0		0	86.8	13.2		95.1	0	4.9		
PHF	.550	.923	.000	.912	.000	.000	.000	.000	.000	.797	.648	.773	.709	.000	.563	.722	.824

Traffic Data Service

Campbell, CA

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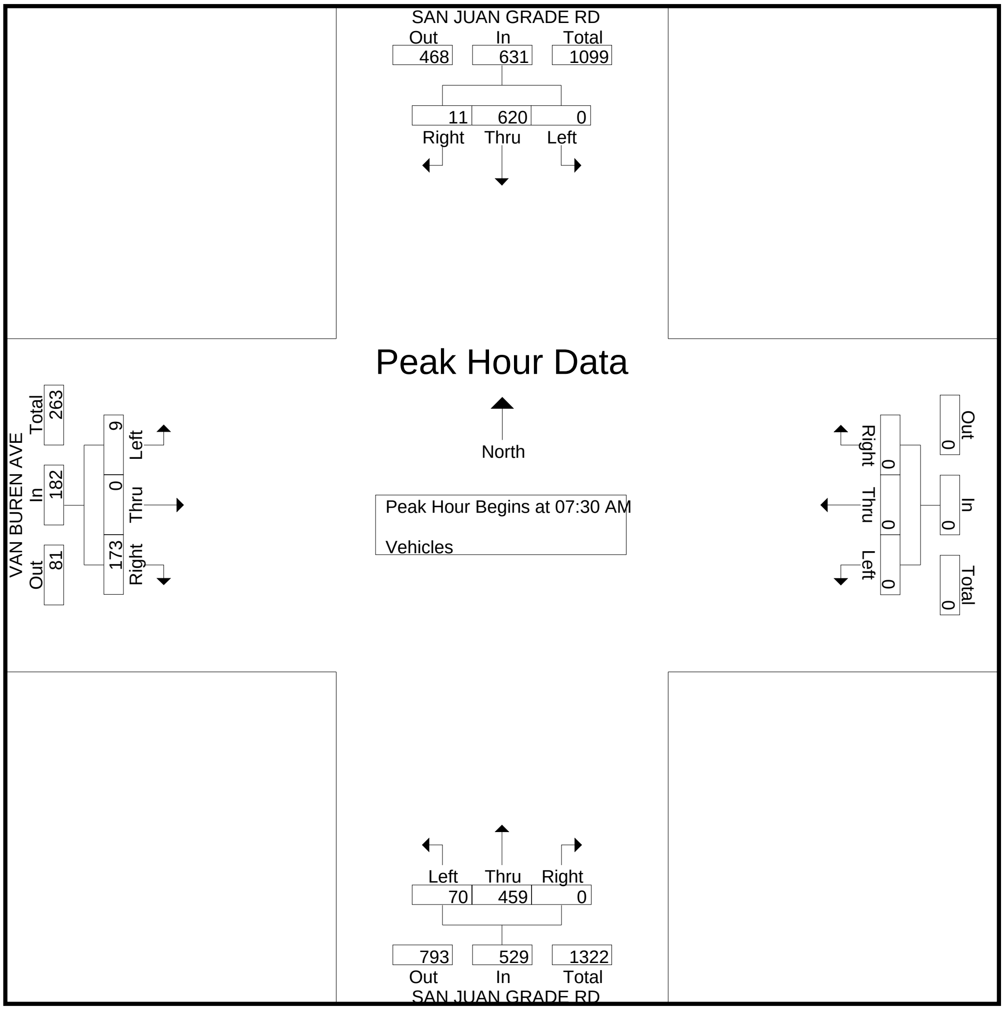
File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 15AM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					US-101 SB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	19	1	47	0	67	84	68	0	0	152	0	0	0	0	0	7	27	0	0	34	253
07:15 AM	24	2	65	0	91	136	76	0	0	212	0	0	0	0	0	11	33	0	0	44	347
07:30 AM	31	0	90	0	121	166	114	0	0	280	0	0	0	0	0	17	51	0	0	68	469
07:45 AM	43	0	95	0	138	199	125	0	0	324	0	0	0	1	1	19	42	0	0	61	524
Total	117	3	297	0	417	585	383	0	0	968	0	0	0	1	1	54	153	0	0	207	1593
08:00 AM	32	2	67	3	104	163	121	0	0	284	0	0	0	0	0	25	41	0	0	66	454
08:15 AM	30	0	68	0	98	139	145	0	0	284	0	0	0	0	0	21	65	0	0	86	468
08:30 AM	37	0	55	0	92	116	115	0	0	231	0	0	0	0	0	17	71	0	0	88	411
08:45 AM	34	0	58	0	92	115	115	0	0	230	0	0	0	0	0	21	80	0	0	101	423
Total	133	2	248	3	386	533	496	0	0	1029	0	0	0	0	0	84	257	0	0	341	1756
Grand Total	250	5	545	3	803	1118	879	0	0	1997	0	0	0	1	1	138	410	0	0	548	3349
Apprch %	31.1	0.6	67.9	0.4		56	44	0	0		0	0	0	100		25.2	74.8	0	0		
Total %	7.5	0.1	16.3	0.1	24	33.4	26.2	0	0	59.6	0	0	0	0	0	4.1	12.2	0	0	16.4	

	US-101 SB RAMPS Southbound				BORONDA RD Westbound				US-101 SB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	31	0	90	121	166	114	0	280	0	0	0	0	17	51	0	68	469
07:45 AM	**43**	0	**95**	**138**	**199**	125	0	**324**	0	0	0	0	19	42	0	61	**523**
08:00 AM	32	**2**	67	101	163	121	0	284	0	0	0	0	**25**	41	0	66	451
08:15 AM	30	0	68	98	139	**145**	0	284	0	0	0	0	21	**65**	0	**86**	468
Total Volume	136	2	320	458	667	505	0	1172	0	0	0	0	82	199	0	281	1911
% App. Total	29.7	0.4	69.9		56.9	43.1	0		0	0	0		29.2	70.8	0		
PHF	.791	.250	.842	.830	.838	.871	.000	.904	.000	.000	.000	.000	.820	.765	.000	.817	.913

Traffic Data Service

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File Name : 15AM FINAL
Site Code : 00000015
Start Date : 1/14/2016
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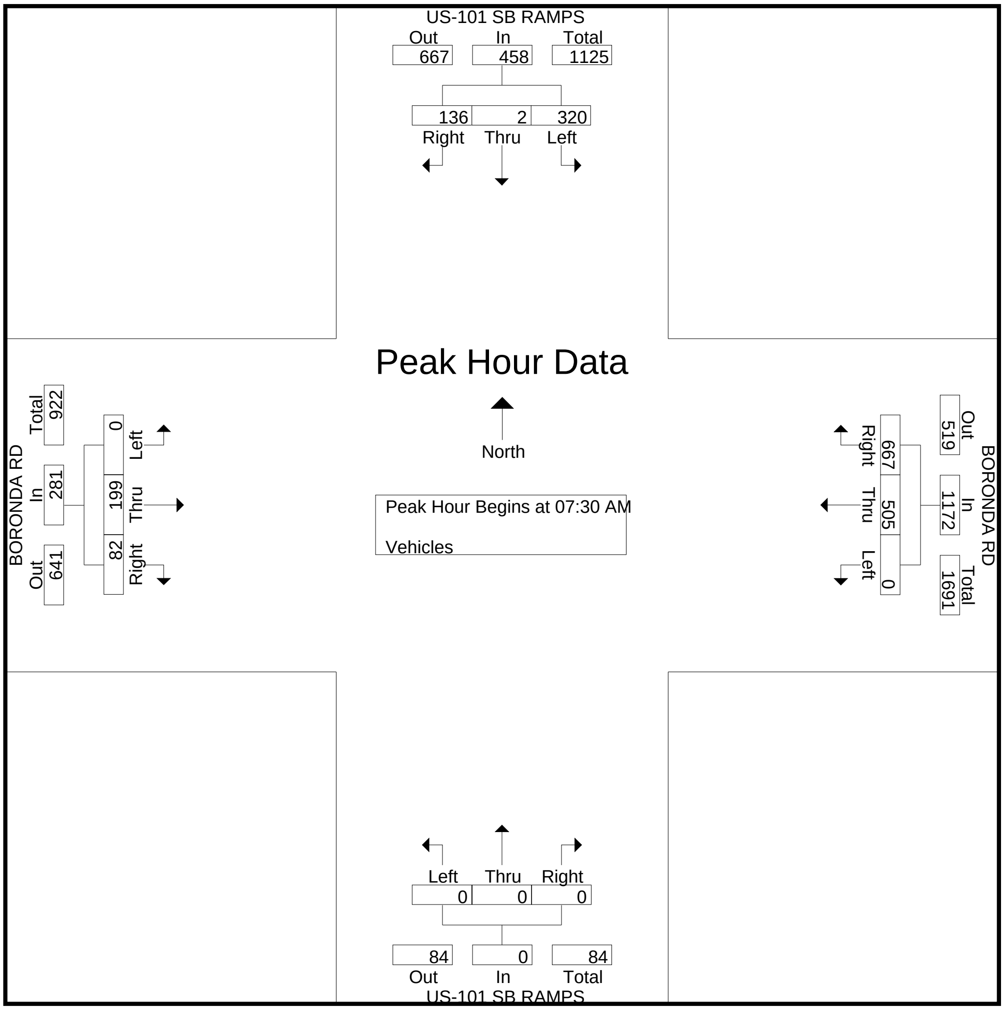

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 16AM FINAL
Site Code : 00000016
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	US-101 NB RAMPS Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	125	145	0	0	270	62	0	11	0	73	9	63	0	0	72	415
07:15 AM	0	0	0	0	0	98	207	0	0	305	77	0	14	1	92	13	91	0	0	104	501
07:30 AM	0	0	0	0	0	97	271	0	0	368	78	0	29	0	107	9	119	0	0	128	603
07:45 AM	0	0	0	0	0	104	293	0	0	397	138	0	33	0	171	9	120	0	0	129	697
Total	0	0	0	0	0	424	916	0	0	1340	355	0	87	1	443	40	393	0	0	433	2216
08:00 AM	0	0	0	0	0	72	259	0	0	331	115	0	25	0	140	10	98	0	0	108	579
08:15 AM	0	0	0	3	3	84	231	0	0	315	85	0	37	3	125	14	122	0	0	136	579
08:30 AM	0	0	0	0	0	89	212	0	2	303	97	0	31	0	128	18	123	0	0	141	572
08:45 AM	0	0	0	0	0	62	195	0	0	257	109	0	25	0	134	22	106	0	0	128	519
Total	0	0	0	3	3	307	897	0	2	1206	406	0	118	3	527	64	449	0	0	513	2249
Grand Total	0	0	0	3	3	731	1813	0	2	2546	761	0	205	4	970	104	842	0	0	946	4465
Apprch %	0	0	0	100		28.7	71.2	0	0.1		78.5	0	21.1	0.4		11	89	0	0		
Total %	0	0	0	0.1	0.1	16.4	40.6	0	0	57	17	0	4.6	0.1	21.7	2.3	18.9	0	0	21.2	

	US-101 NB RAMPS Southbound				BORONDA RD Westbound				US-101 NB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	97	271	0	368	78	0	29	107	9	119	0	128	603
07:45 AM	0	0	0	0	**104**	**293**	0	**397**	**138**	0	33	**171**	9	120	0	129	**697**
08:00 AM	0	0	0	0	72	259	0	331	115	0	25	140	10	98	0	108	579
08:15 AM	0	0	0	0	84	231	0	315	85	0	**37**	122	**14**	**122**	0	**136**	573
Total Volume	0	0	0	0	357	1054	0	1411	416	0	124	540	42	459	0	501	2452
% App. Total	0	0	0		25.3	74.7	0		77	0	23		8.4	91.6	0		
PHF	.000	.000	.000	.000	.858	.899	.000	.889	.754	.000	.838	.789	.750	.941	.000	.921	.879

Traffic Data Service

Campbell, CA

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File Name : 16AM FINAL
Site Code : 00000016
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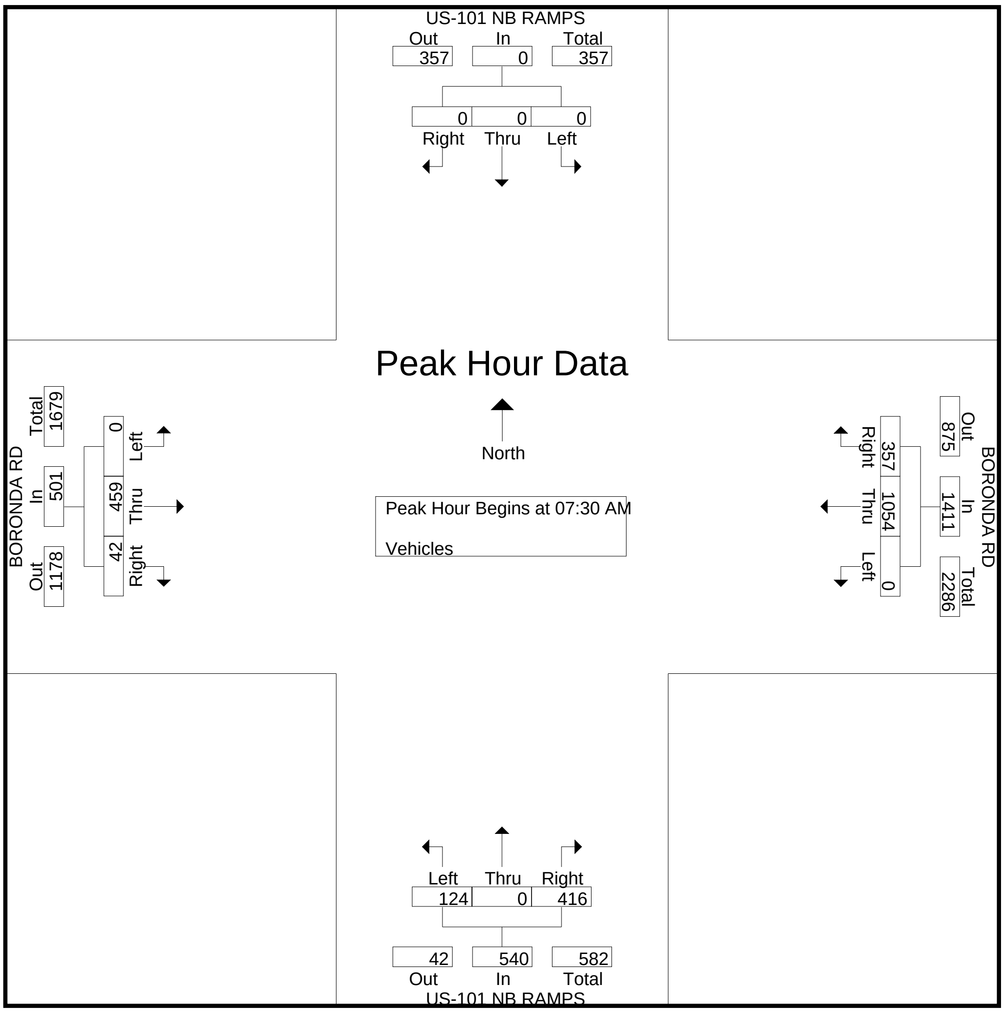

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(408) 377-2988
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File Name : 17AM FINAL
Site Code : 00000017
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E BORONDA RD Westbound					N MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	67	25	11	0	103	35	135	3	0	173	2	30	53	1	86	16	61	48	0	125	487
07:15 AM	102	29	19	0	150	32	142	3	0	177	6	29	48	0	83	22	93	44	2	161	571
07:30 AM	110	47	40	0	197	33	202	3	1	239	1	27	54	0	82	38	121	46	1	206	724
07:45 AM	108	55	34	1	198	42	192	4	1	239	5	52	63	0	120	53	121	64	2	240	797
Total	387	156	104	1	648	142	671	13	2	828	14	138	218	1	371	129	396	202	5	732	2579
08:00 AM	108	61	31	0	200	40	148	2	2	192	4	43	50	0	97	42	96	66	0	204	693
08:15 AM	93	44	27	2	166	49	155	11	2	217	5	42	53	0	100	50	87	49	1	187	670
08:30 AM	79	46	13	0	138	46	150	11	5	212	3	34	50	0	87	45	94	64	0	203	640
08:45 AM	84	33	29	0	146	18	101	10	0	129	7	37	51	0	95	47	94	53	1	195	565
Total	364	184	100	2	650	153	554	34	9	750	19	156	204	0	379	184	371	232	2	789	2568
Grand Total	751	340	204	3	1298	295	1225	47	11	1578	33	294	422	1	750	313	767	434	7	1521	5147
Apprch %	57.9	26.2	15.7	0.2		18.7	77.6	3	0.7		4.4	39.2	56.3	0.1		20.6	50.4	28.5	0.5		
Total %	14.6	6.6	4	0.1	25.2	5.7	23.8	0.9	0.2	30.7	0.6	5.7	8.2	0	14.6	6.1	14.9	8.4	0.1	29.6	

	N MAIN ST Southbound				E BORONDA RD Westbound				N MAIN ST Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**110**	47	**40**	197	33	**202**	3	**238**	1	27	54	82	38	**121**	46	205	722
07:45 AM	108	55	34	197	42	192	4	238	**5**	**52**	**63**	**120**	**53**	121	64	**238**	**793**
08:00 AM	108	**61**	31	**200**	40	148	2	190	4	43	50	97	42	96	**66**	204	691
08:15 AM	93	44	27	164	**49**	155	**11**	215	5	42	53	100	50	87	49	186	665
Total Volume	419	207	132	758	164	697	20	881	15	164	220	399	183	425	225	833	2871
% App. Total	55.3	27.3	17.4		18.6	79.1	2.3		3.8	41.1	55.1		22	51	27		
PHF	.952	.848	.825	.948	.837	.863	.455	.925	.750	.788	.873	.831	.863	.878	.852	.875	.905

Traffic Data Service

Campbell, CA

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File Name : 17AM FINAL
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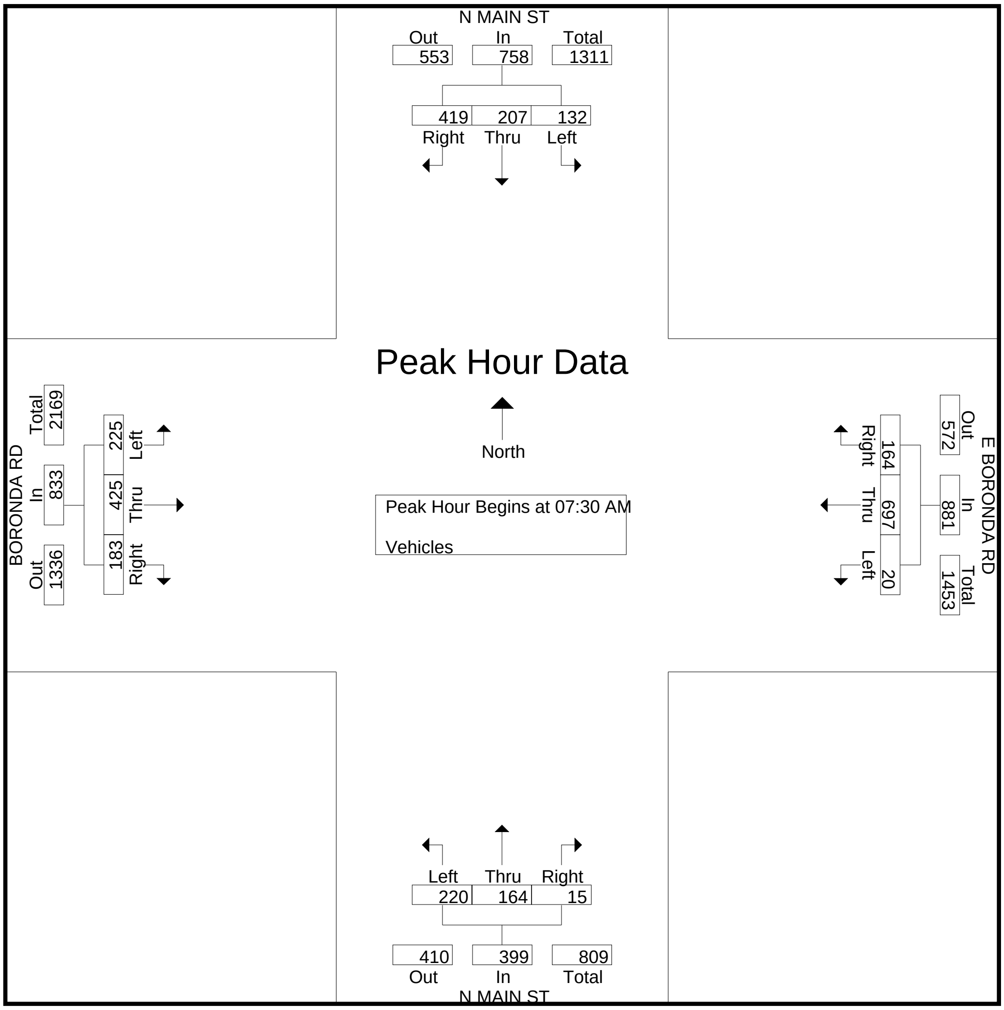
Page No : 2



Traffic Data Service

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File Name : 18AM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					SAN JUAN GRADE RD Westbound					N MAIN ST Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	46	1	0	49	2	1	15	0	18	15	75	1	0	91	0	1	4	0	5	163
07:15 AM	0	48	1	0	49	0	0	20	0	20	30	80	2	0	112	0	1	4	0	5	186
07:30 AM	0	72	6	0	78	5	4	31	1	41	39	82	6	0	127	0	4	4	1	9	255
07:45 AM	2	85	3	1	91	6	3	54	0	63	70	118	3	0	191	1	1	2	2	6	351
Total	4	251	11	1	267	13	8	120	1	142	154	355	12	0	521	1	7	14	3	25	955
08:00 AM	4	84	4	1	93	3	2	53	1	59	58	91	1	1	151	5	0	2	1	8	311
08:15 AM	4	82	1	0	87	4	5	51	2	62	44	121	2	0	167	2	3	6	0	11	327
08:30 AM	3	56	3	1	63	6	5	32	0	43	28	101	1	1	131	4	4	4	3	15	252
08:45 AM	4	67	6	1	78	14	5	39	2	60	34	71	2	0	107	4	2	1	0	7	252
Total	15	289	14	3	321	27	17	175	5	224	164	384	6	2	556	15	9	13	4	41	1142
Grand Total	19	540	25	4	588	40	25	295	6	366	318	739	18	2	1077	16	16	27	7	66	2097
Apprch %	3.2	91.8	4.3	0.7		10.9	6.8	80.6	1.6		29.5	68.6	1.7	0.2		24.2	24.2	40.9	10.6		
Total %	0.9	25.8	1.2	0.2	28	1.9	1.2	14.1	0.3	17.5	15.2	35.2	0.9	0.1	51.4	0.8	0.8	1.3	0.3	3.1	

	N MAIN ST Southbound				SAN JUAN GRADE RD Westbound				N MAIN ST Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	72	**6**	78	5	4	31	40	39	82	**6**	127	0	**4**	4	8	253
07:45 AM	2	**85**	3	90	**6**	3	**54**	**63**	**70**	118	3	**191**	1	1	2	4	**348**
08:00 AM	**4**	84	4	**92**	3	2	53	58	58	91	1	150	**5**	0	2	7	307
08:15 AM	4	82	1	87	4	**5**	51	60	44	**121**	2	167	2	3	**6**	**11**	325
Total Volume	10	323	14	347	18	14	189	221	211	412	12	635	8	8	14	30	1233
% App. Total	2.9	93.1	4		8.1	6.3	85.5		33.2	64.9	1.9		26.7	26.7	46.7		
PHF	.625	.950	.583	.943	.750	.700	.875	.877	.754	.851	.500	.831	.400	.500	.583	.682	.886

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File Name : 18AM FINAL
Site Code : 00000018
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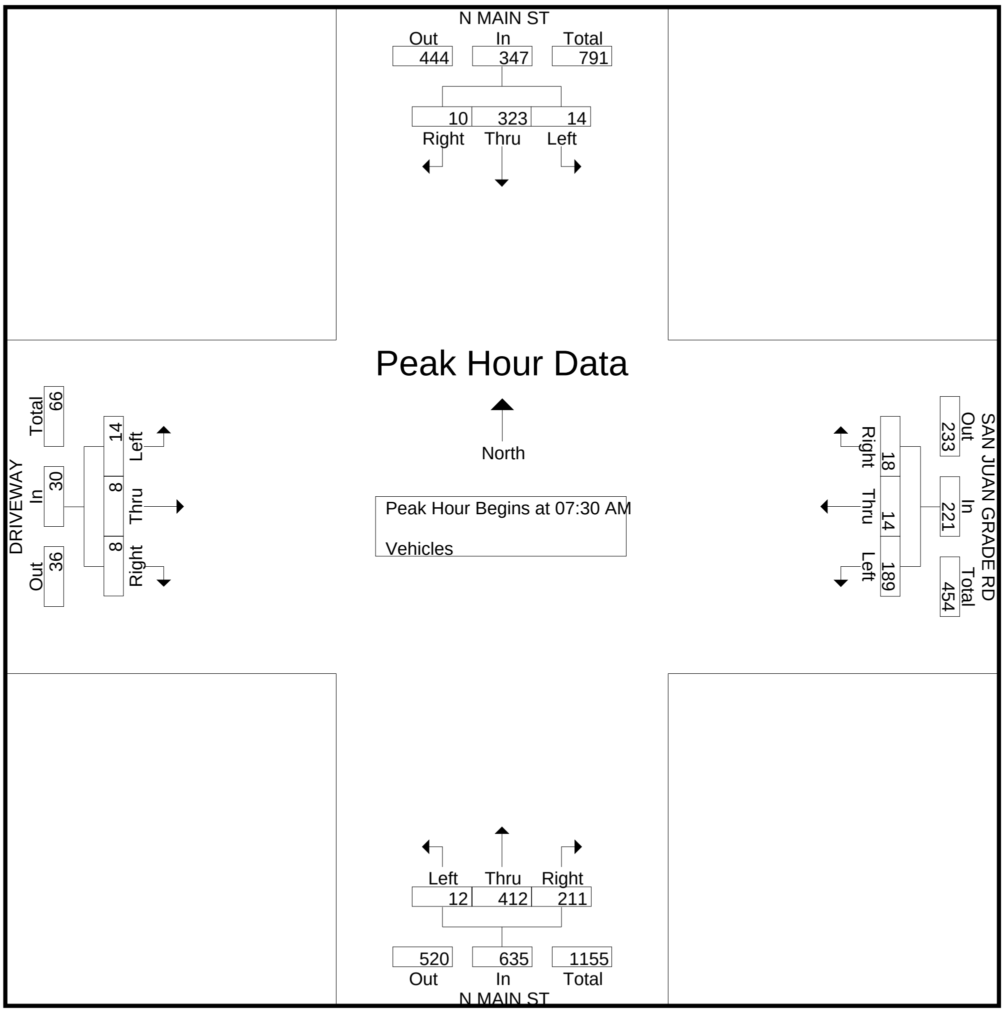

Traffic Data Service

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File Name : 19AM FINAL
Site Code : 00000019
Start Date : 11/18/2015

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					E BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	52	18	24	1	95	22	123	3	1	149	2	19	18	0	39	4	62	13	0	79	362
07:15 AM	56	14	35	1	106	38	130	0	3	171	2	19	13	0	34	4	103	16	0	123	434
07:30 AM	90	36	92	1	219	84	166	7	2	259	8	42	14	3	67	8	121	25	2	156	701
07:45 AM	87	55	122	0	264	104	123	9	1	237	8	53	10	0	71	9	124	32	1	166	738
Total	285	123	273	3	684	248	542	19	7	816	20	133	55	3	211	25	410	86	3	524	2235
08:00 AM	63	51	85	1	200	86	118	9	1	214	8	58	13	2	81	8	101	25	1	135	630
08:15 AM	64	58	79	0	201	37	130	14	0	181	3	29	18	0	50	14	92	28	1	135	567
08:30 AM	48	33	30	0	111	49	154	18	0	221	8	34	15	1	58	10	80	17	1	108	498
08:45 AM	38	35	39	0	112	22	98	10	1	131	4	29	23	3	59	12	80	22	1	115	417
Total	213	177	233	1	624	194	500	51	2	747	23	150	69	6	248	44	353	92	4	493	2112
Grand Total	498	300	506	4	1308	442	1042	70	9	1563	43	283	124	9	459	69	763	178	7	1017	4347
Apprch %	38.1	22.9	38.7	0.3		28.3	66.7	4.5	0.6		9.4	61.7	27	2		6.8	75	17.5	0.7		
Total %	11.5	6.9	11.6	0.1	30.1	10.2	24	1.6	0.2	36	1	6.5	2.9	0.2	10.6	1.6	17.6	4.1	0.2	23.4	

	SAN JUAN GRADE RD Southbound				E BORONDA RD Westbound				SAN JUAN GRADE RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**90**	36	92	218	84	**166**	7	**257**	**8**	42	14	64	8	121	25	154	693
07:45 AM	87	55	**122**	**264**	**104**	123	9	236	8	53	10	71	9	**124**	**32**	**165**	**736**
08:00 AM	63	51	85	199	86	118	9	213	8	**58**	13	**79**	8	101	25	134	625
08:15 AM	64	**58**	79	201	37	130	**14**	181	3	29	**18**	50	**14**	92	28	134	566
Total Volume	304	200	378	882	311	537	39	887	27	182	55	264	39	438	110	587	2620
% App. Total	34.5	22.7	42.9		35.1	60.5	4.4		10.2	68.9	20.8		6.6	74.6	18.7		
PHF	.844	.862	.775	.835	.748	.809	.696	.863	.844	.784	.764	.835	.696	.883	.859	.889	.890

Traffic Data Service

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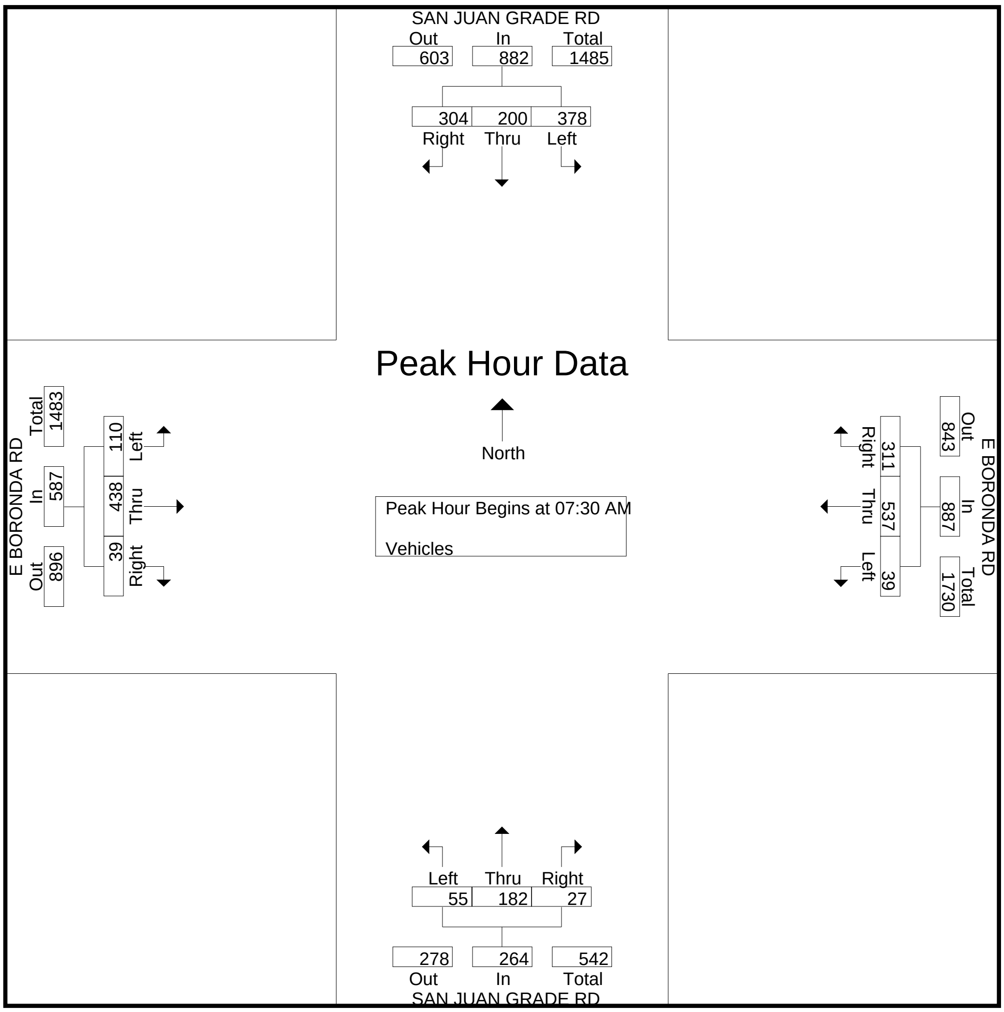
File Name : 19AM FINAL
Site Code : 00000019
Start Date : 11/18/2015
Page No : 2



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File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	MCKINNON ST Southbound					E BORONDA RD Westbound					MCKINNON ST Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	122	6	0	128	8	1	40	3	52	16	63	4	0	83	264
07:15 AM	4	2	0	0	6	1	163	13	5	182	12	1	41	6	60	29	101	8	0	138	386
07:30 AM	16	11	3	0	30	4	187	13	5	209	13	21	68	1	103	49	163	17	0	229	571
07:45 AM	17	7	7	0	31	7	178	15	11	211	18	19	59	6	102	63	162	36	0	261	605
Total	37	21	10	0	68	12	650	47	21	730	51	42	208	16	317	157	489	65	0	711	1826
08:00 AM	17	20	5	0	42	12	191	16	12	231	4	30	38	7	79	51	99	43	0	193	545
08:15 AM	43	59	19	0	121	22	138	15	32	207	7	47	25	18	97	33	83	59	0	175	600
08:30 AM	25	11	8	0	44	5	195	22	5	227	3	2	35	5	45	33	78	8	0	119	435
08:45 AM	2	2	3	0	7	2	124	28	1	155	12	2	24	2	40	20	93	2	0	115	317
Total	87	92	35	0	214	41	648	81	50	820	26	81	122	32	261	137	353	112	0	602	1897
Grand Total	124	113	45	0	282	53	1298	128	71	1550	77	123	330	48	578	294	842	177	0	1313	3723
Apprch %	44	40.1	16	0		3.4	83.7	8.3	4.6		13.3	21.3	57.1	8.3		22.4	64.1	13.5	0		
Total %	3.3	3	1.2	0	7.6	1.4	34.9	3.4	1.9	41.6	2.1	3.3	8.9	1.3	15.5	7.9	22.6	4.8	0	35.3	

	MCKINNON ST Southbound				E BORONDA RD Westbound				MCKINNON ST Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	16	11	3	30	4	187	13	204	13	21	**68**	**102**	49	**163**	17	229	565
07:45 AM	17	7	7	31	7	178	15	200	**18**	19	59	96	**63**	162	36	**261**	**588**
08:00 AM	17	20	5	42	12	**191**	**16**	**219**	4	30	38	72	51	99	43	193	526
08:15 AM	**43**	**59**	**19**	**121**	**22**	138	15	175	7	**47**	25	79	33	83	**59**	175	550
Total Volume	93	97	34	224	45	694	59	798	42	117	190	349	196	507	155	858	2229
% App. Total	41.5	43.3	15.2		5.6	87	7.4		12	33.5	54.4		22.8	59.1	18.1		
PHF	.541	.411	.447	.463	.511	.908	.922	.911	.583	.622	.699	.855	.778	.778	.657	.822	.948

Traffic Data Service

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File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/18/2015
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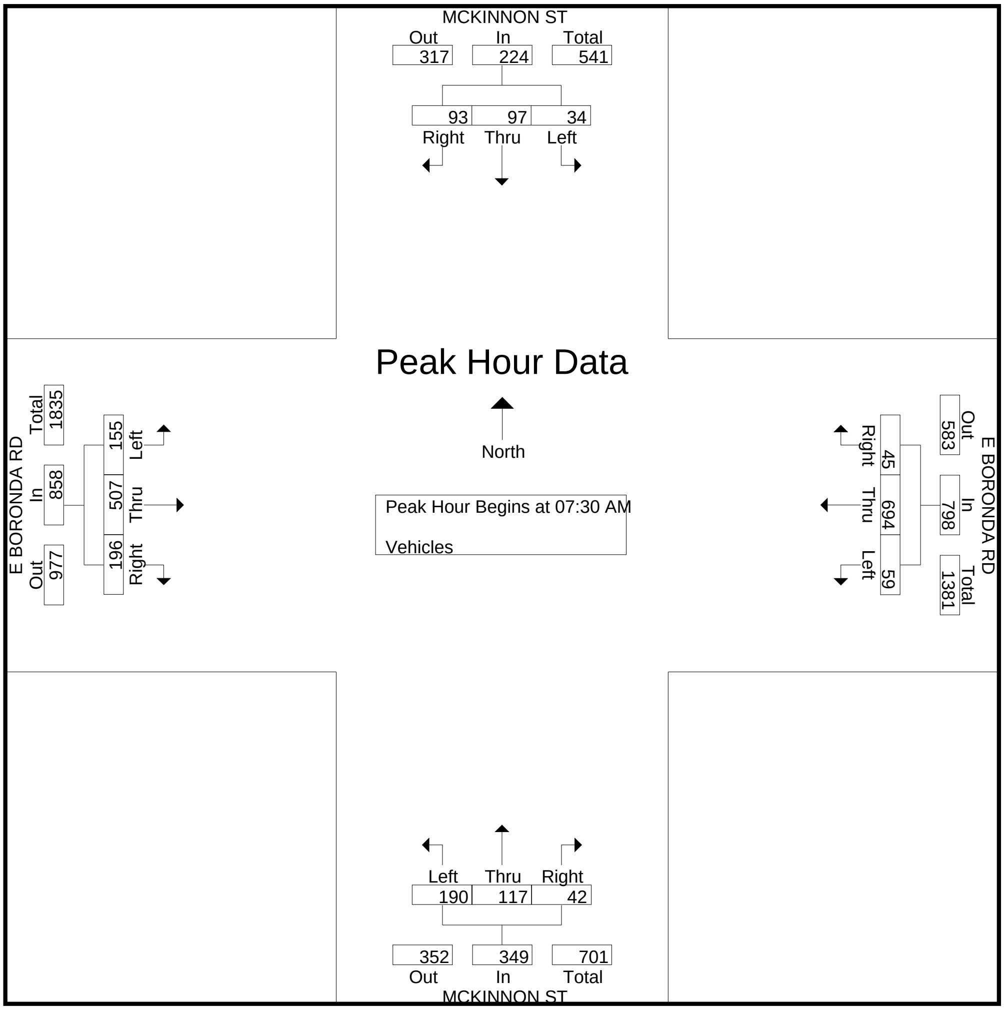

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 21AM FINAL
Site Code : 00000021
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					EL DORADO DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	111	3	0	114	8	0	25	0	33	9	65	0	0	74	221
07:15 AM	0	0	0	0	0	0	136	5	0	141	21	0	33	2	56	14	84	0	0	98	295
07:30 AM	0	0	0	0	0	0	173	2	0	175	30	0	44	1	75	25	143	0	0	168	418
07:45 AM	0	0	0	0	0	0	186	16	0	202	35	0	41	0	76	15	208	0	0	223	501
Total	0	0	0	0	0	0	606	26	0	632	94	0	143	3	240	63	500	0	0	563	1435
08:00 AM	0	0	0	0	0	0	171	24	0	195	33	0	49	5	87	22	96	0	0	118	400
08:15 AM	0	0	0	0	0	0	181	36	0	217	6	0	18	3	27	23	95	0	0	118	362
08:30 AM	0	0	0	0	0	0	154	37	0	191	13	0	14	1	28	14	86	0	0	100	319
08:45 AM	0	0	0	0	0	0	127	8	0	135	13	0	23	0	36	12	95	0	0	107	278
Total	0	0	0	0	0	0	633	105	0	738	65	0	104	9	178	71	372	0	0	443	1359
Grand Total	0	0	0	0	0	0	1239	131	0	1370	159	0	247	12	418	134	872	0	0	1006	2794
Apprch %	0	0	0	0		0	90.4	9.6	0		38	0	59.1	2.9		13.3	86.7	0	0		
Total %	0	0	0	0	0	0	44.3	4.7	0	49	5.7	0	8.8	0.4	15	4.8	31.2	0	0	36	

	Southbound				E BORONDA RD Westbound				EL DORADO DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	173	2	175	30	0	44	74	**25**	143	0	168	417
07:45 AM	0	0	0	0	0	**186**	16	202	**35**	0	41	76	15	**208**	0	**223**	**501**
08:00 AM	0	0	0	0	0	171	24	195	33	0	**49**	**82**	22	96	0	118	395
08:15 AM	0	0	0	0	0	181	**36**	**217**	6	0	18	24	23	95	0	118	359
Total Volume	0	0	0	0	0	711	78	789	104	0	152	256	85	542	0	627	1672
% App. Total	0	0	0		0	90.1	9.9		40.6	0	59.4		13.6	86.4	0		
PHF	.000	.000	.000	.000	.000	.956	.542	.909	.743	.000	.776	.780	.850	.651	.000	.703	.834

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File Name : 21AM FINAL
Site Code : 00000021
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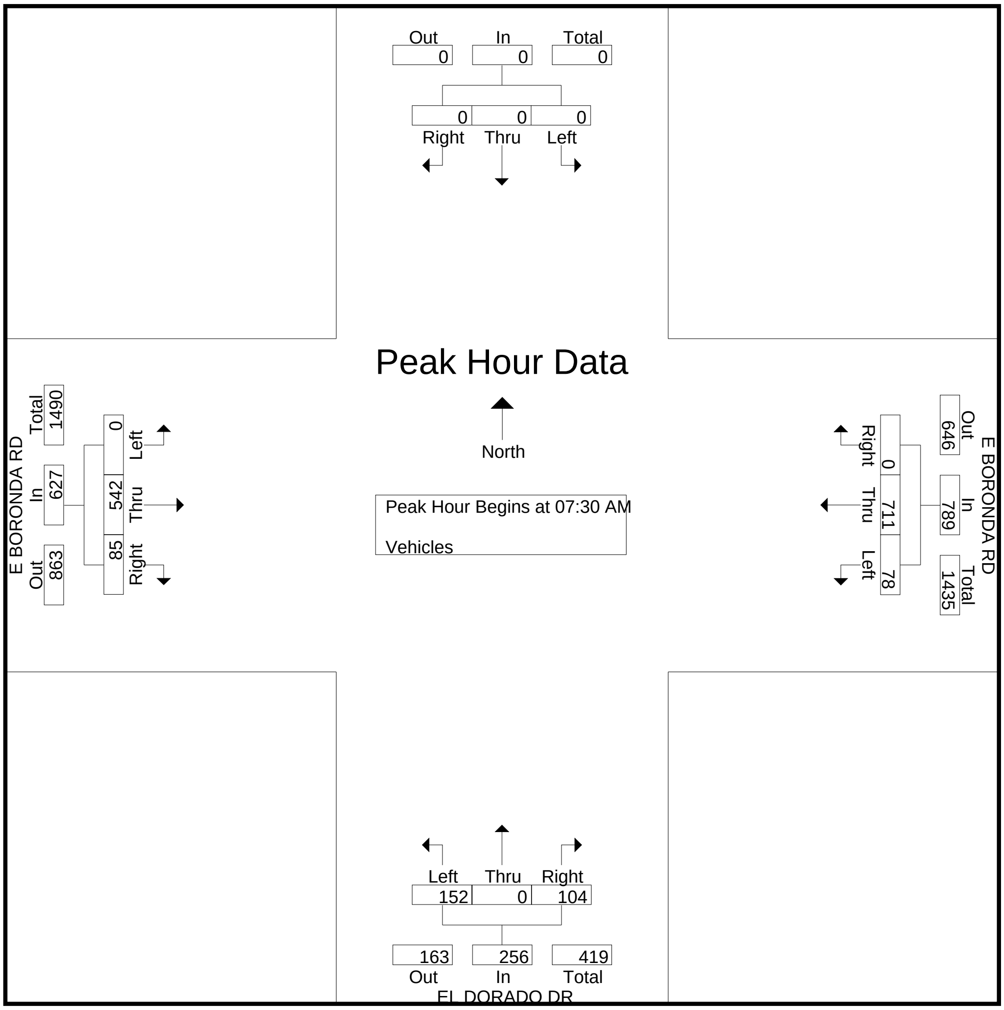

Traffic Data Service

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File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					E BORONDA RD Westbound					NATIVIDAD RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	16	8	0	27	21	94	17	0	132	28	26	15	0	69	14	65	10	0	89	317
07:15 AM	4	32	16	0	52	45	116	29	0	190	42	30	28	0	100	5	79	7	0	91	433
07:30 AM	4	54	28	0	86	71	127	61	0	259	69	38	15	0	122	23	92	17	0	132	599
07:45 AM	6	54	64	0	124	62	112	53	0	227	79	67	36	0	182	31	130	17	0	178	711
Total	17	156	116	0	289	199	449	160	0	808	218	161	94	0	473	73	366	51	0	490	2060
08:00 AM	8	51	32	0	91	40	127	42	0	209	73	32	24	1	130	18	102	19	1	140	570
08:15 AM	7	30	26	0	63	32	182	67	0	281	44	16	18	5	83	16	93	9	0	118	545
08:30 AM	11	30	42	0	83	28	132	63	0	223	75	22	16	0	113	31	138	2	0	171	590
08:45 AM	7	20	39	0	66	34	175	77	0	286	96	20	23	3	142	22	114	6	1	143	637
Total	33	131	139	0	303	134	616	249	0	999	288	90	81	9	468	87	447	36	2	572	2342
Grand Total	50	287	255	0	592	333	1065	409	0	1807	506	251	175	9	941	160	813	87	2	1062	4402
Apprch %	8.4	48.5	43.1	0		18.4	58.9	22.6	0		53.8	26.7	18.6	1		15.1	76.6	8.2	0.2		
Total %	1.1	6.5	5.8	0	13.4	7.6	24.2	9.3	0	41	11.5	5.7	4	0.2	21.4	3.6	18.5	2	0	24.1	

	NATIVIDAD RD Southbound				E BORONDA RD Westbound				NATIVIDAD RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	**54**	28	86	**71**	127	61	259	69	38	15	122	23	92	17	132	599
07:45 AM	6	54	**64**	**124**	62	112	53	227	**79**	**67**	**36**	**182**	**31**	**130**	17	**178**	**711**
08:00 AM	**8**	51	32	91	40	127	42	209	73	32	24	129	18	102	**19**	139	568
08:15 AM	7	30	26	63	32	**182**	**67**	**281**	44	16	18	78	16	93	9	118	540
Total Volume	25	189	150	364	205	548	223	976	265	153	93	511	88	417	62	567	2418
% App. Total	6.9	51.9	41.2		21	56.1	22.8		51.9	29.9	18.2		15.5	73.5	10.9		
PHF	.781	.875	.586	.734	.722	.753	.832	.868	.839	.571	.646	.702	.710	.802	.816	.796	.850

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File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/17/2015
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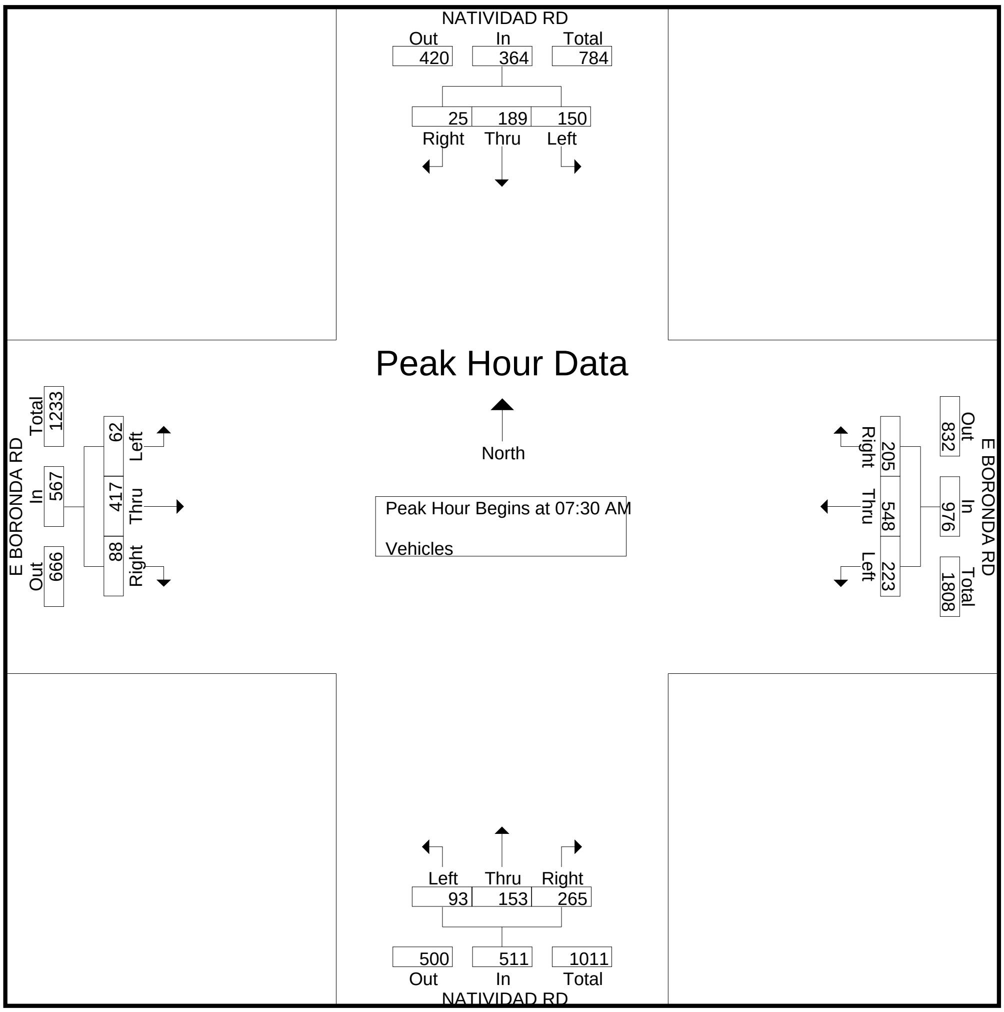

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File Name : 23AM FINAL
Site Code : 00000023
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					INDEPENDENCE BLVD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	117	2	0	119	1	0	51	1	53	26	79	0	0	105	277
07:15 AM	0	0	0	0	0	0	153	2	0	155	5	0	37	1	43	45	76	0	0	121	319
07:30 AM	0	0	0	0	0	0	183	4	0	187	2	0	89	0	91	49	115	0	0	164	442
07:45 AM	0	0	0	0	0	0	174	1	0	175	6	0	56	3	65	106	181	0	0	287	527
Total	0	0	0	0	0	0	627	9	0	636	14	0	233	5	252	226	451	0	0	677	1565
08:00 AM	0	0	0	0	0	0	143	6	0	149	4	0	69	0	73	89	132	0	0	221	443
08:15 AM	0	0	0	0	0	0	194	6	0	200	11	0	86	1	98	72	83	0	0	155	453
08:30 AM	0	0	0	0	0	0	106	18	0	124	18	0	108	3	129	143	90	0	0	233	486
08:45 AM	0	0	0	0	0	0	172	34	0	206	76	0	108	1	185	199	78	0	0	277	668
Total	0	0	0	0	0	0	615	64	0	679	109	0	371	5	485	503	383	0	0	886	2050
Grand Total	0	0	0	0	0	0	1242	73	0	1315	123	0	604	10	737	729	834	0	0	1563	3615
Apprch %	0	0	0	0		0	94.4	5.6	0		16.7	0	82	1.4		46.6	53.4	0	0		
Total %	0	0	0	0	0	0	34.4	2	0	36.4	3.4	0	16.7	0.3	20.4	20.2	23.1	0	0	43.2	

	Southbound				E BORONDA RD Westbound				INDEPENDENCE BLVD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	143	6	149	4	0	69	73	89	**132**	0	221	443
08:15 AM	0	0	0	0	0	**194**	6	200	11	0	86	97	72	83	0	155	452
08:30 AM	0	0	0	0	0	106	18	124	18	0	**108**	126	143	90	0	233	483
08:45 AM	0	0	0	0	0	172	**34**	**206**	**76**	0	108	**184**	**199**	78	0	**277**	**667**
Total Volume	0	0	0	0	0	615	64	679	109	0	371	480	503	383	0	886	2045
% App. Total	0	0	0		0	90.6	9.4		22.7	0	77.3		56.8	43.2	0		
PHF	.000	.000	.000	.000	.000	.793	.471	.824	.359	.000	.859	.652	.632	.725	.000	.800	.766

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File Name : 23AM FINAL
Site Code : 00000023
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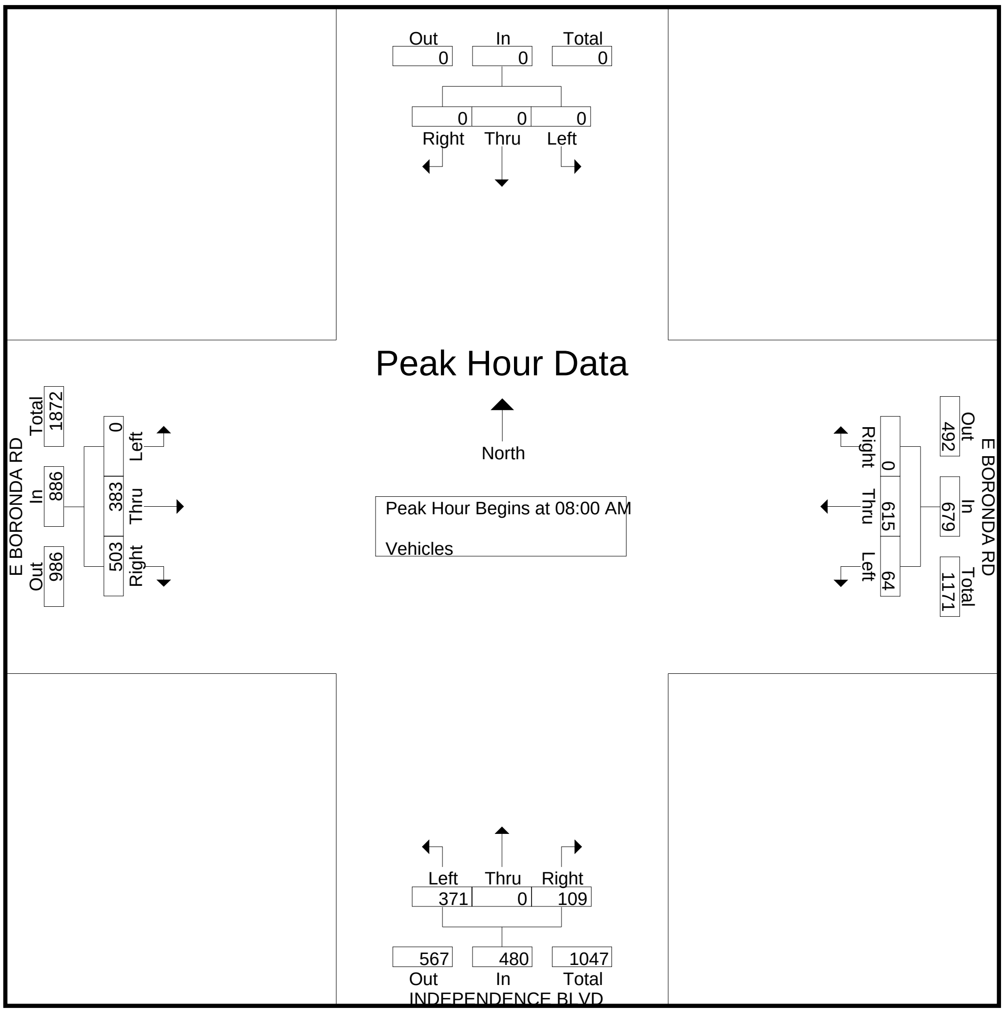

Traffic Data Service

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File Name : 24AM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

			Southbound					E BORONDA RD Westbound					HEMINGWAY DR Northbound					E BORONDA RD Eastbound		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	100	0	0	100	4	0	23	1	28	12	65	0	0	77	205
07:15 AM	0	0	0	0	0	0	132	5	0	137	5	0	35	2	42	11	70	0	0	81	260
07:30 AM	0	0	0	0	0	0	162	11	0	173	7	0	33	0	40	18	98	0	0	116	329
07:45 AM	0	0	0	0	0	0	125	6	0	131	15	0	37	1	53	39	145	0	0	184	368
Total	0	0	0	0	0	0	519	22	0	541	31	0	128	4	163	80	378	0	0	458	1162
08:00 AM	0	0	0	0	0	0	126	11	0	137	12	0	42	0	54	45	89	0	0	134	325
08:15 AM	0	0	0	0	0	0	135	2	0	137	8	0	48	0	56	20	73	0	0	93	286
08:30 AM	0	0	0	0	0	0	111	10	0	121	1	0	18	0	19	22	81	0	0	103	243
08:45 AM	0	0	0	0	0	0	153	11	0	164	10	0	35	0	45	14	120	0	0	134	343
Total	0	0	0	0	0	0	525	34	0	559	31	0	143	0	174	101	363	0	0	464	1197
Grand Total	0	0	0	0	0	0	1044	56	0	1100	62	0	271	4	337	181	741	0	0	922	2359
Apprch %	0	0	0	0		0	94.9	5.1	0		18.4	0	80.4	1.2		19.6	80.4	0	0		
Total %	0	0	0	0	0	0	44.3	2.4	0	46.6	2.6	0	11.5	0.2	14.3	7.7	31.4	0	0	39.1	

		Southbound				E BORONDA RD Westbound				HEMINGWAY DR Northbound				E BORONDA RD Eastbound		
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	**162**	**11**	**173**	7	0	33	40	18	98	0	116	329
07:45 AM	0	0	0	0	0	125	6	131	**15**	0	37	52	39	**145**	0	**184**	**367**
08:00 AM	0	0	0	0	0	126	11	137	12	0	42	54	**45**	89	0	134	325
08:15 AM	0	0	0	0	0	135	2	137	8	0	**48**	**56**	20	73	0	93	286
Total Volume	0	0	0	0	0	548	30	578	42	0	160	202	122	405	0	527	1307
% App. Total	0	0	0		0	94.8	5.2		20.8	0	79.2		23.1	76.9	0		
PHF	.000	.000	.000	.000	.000	.846	.682	.835	.700	.000	.833	.902	.678	.698	.000	.716	.890

Traffic Data Service

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File Name : 24AM FINAL
Site Code : 00000024
Start Date : 11/17/2015
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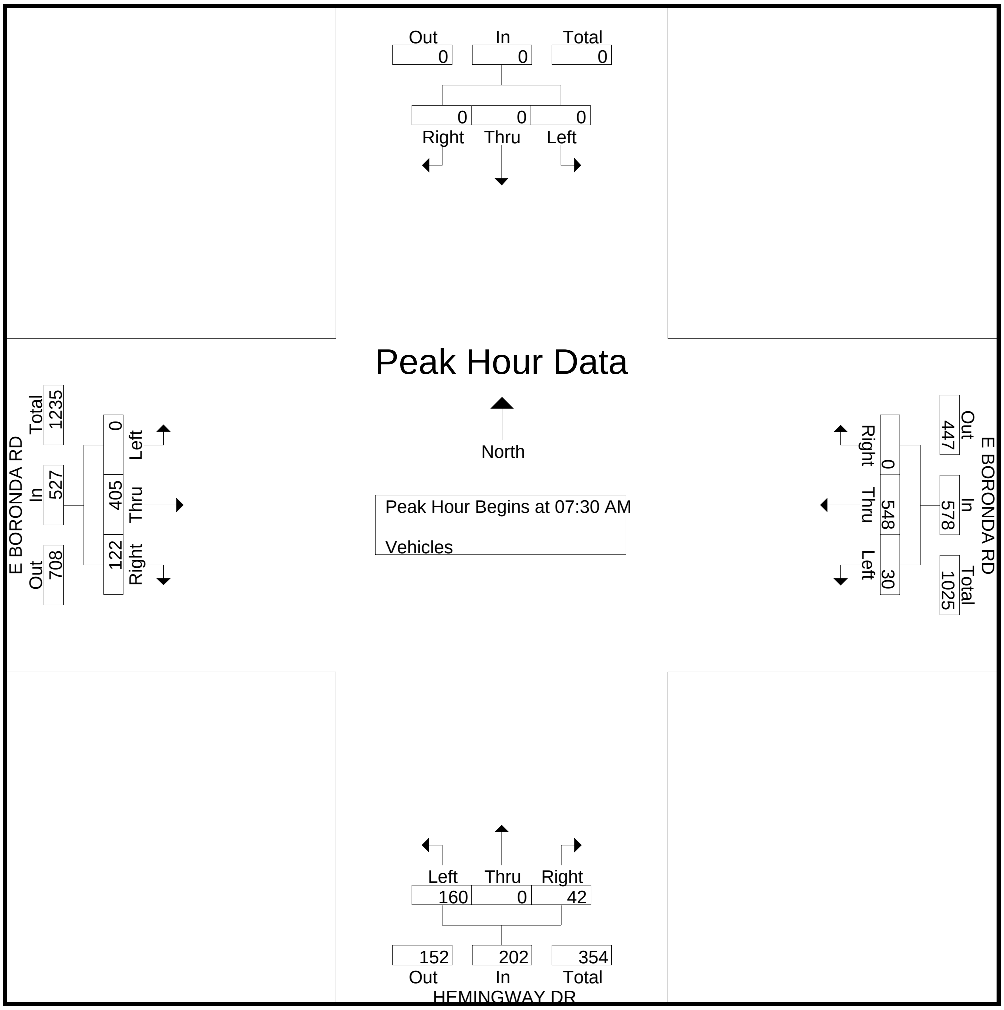

Traffic Data Service

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File Name : 26AM FINAL
Site Code : 00000026
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E ALVIN DR Westbound					N MAIN ST Northbound					W ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	72	14	0	97	21	19	27	0	67	24	50	3	0	77	22	24	11	0	57	298
07:15 AM	9	98	14	1	122	27	23	45	0	95	16	44	9	2	71	15	41	19	0	75	363
07:30 AM	17	137	31	4	189	23	73	77	0	173	39	73	3	16	131	35	87	17	5	144	637
07:45 AM	30	151	63	1	245	65	89	61	0	215	60	101	5	18	184	33	116	25	4	178	822
Total	67	458	122	6	653	136	204	210	0	550	139	268	20	36	463	105	268	72	9	454	2120
08:00 AM	22	125	37	8	192	62	68	61	0	191	102	101	17	10	230	19	64	35	6	124	737
08:15 AM	26	129	26	6	187	55	76	49	1	181	58	114	11	6	189	27	59	29	4	119	676
08:30 AM	29	101	18	1	149	41	70	72	0	183	61	104	6	6	177	15	62	28	2	107	616
08:45 AM	23	135	16	1	175	39	45	60	2	146	34	83	4	1	122	16	21	21	3	61	504
Total	100	490	97	16	703	197	259	242	3	701	255	402	38	23	718	77	206	113	15	411	2533
Grand Total	167	948	219	22	1356	333	463	452	3	1251	394	670	58	59	1181	182	474	185	24	865	4653
Apprch %	12.3	69.9	16.2	1.6		26.6	37	36.1	0.2		33.4	56.7	4.9	5		21	54.8	21.4	2.8		
Total %	3.6	20.4	4.7	0.5	29.1	7.2	10	9.7	0.1	26.9	8.5	14.4	1.2	1.3	25.4	3.9	10.2	4	0.5	18.6	

	N MAIN ST Southbound				E ALVIN DR Westbound				N MAIN ST Northbound				W ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	137	31	185	23	73	**77**	173	39	73	3	115	**35**	87	17	139	612
07:45 AM	**30**	**151**	**63**	**244**	**65**	**89**	61	**215**	60	101	5	166	33	**116**	25	**174**	**799**
08:00 AM	22	125	37	184	62	68	61	191	**102**	101	**17**	**220**	19	64	**35**	118	713
08:15 AM	26	129	26	181	55	76	49	180	58	**114**	11	183	27	59	29	115	659
Total Volume	95	542	157	794	205	306	248	759	259	389	36	684	114	326	106	546	2783
% App. Total	12	68.3	19.8		27	40.3	32.7		37.9	56.9	5.3		20.9	59.7	19.4		
PHF	.792	.897	.623	.814	.788	.860	.805	.883	.635	.853	.529	.777	.814	.703	.757	.784	.871

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File Name : 26AM FINAL
Site Code : 00000026
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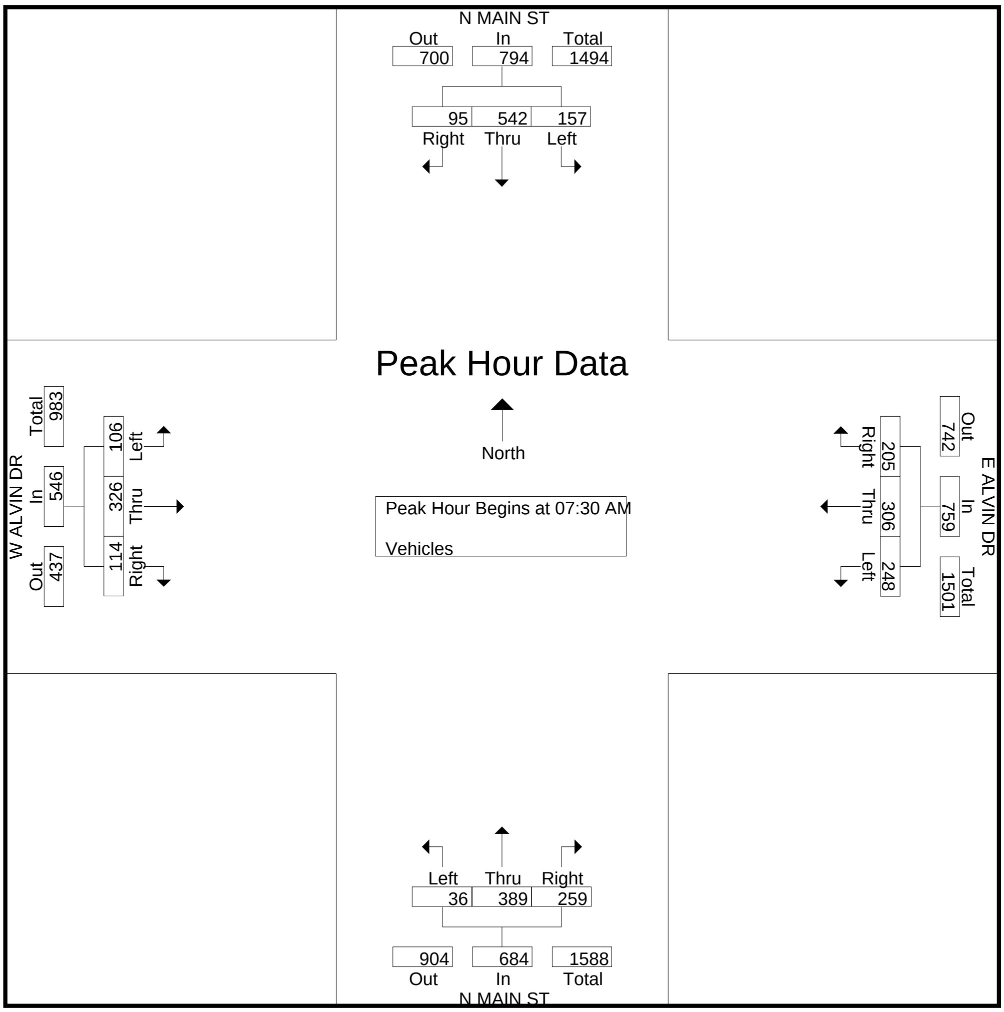

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File Name : 27AM FINAL
Site Code : 00000027
Start Date : 11/18/2015

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					E ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	10	92	0	0	102	0	0	0	0	0	0	48	18	0	66	47	0	12	0	59	227
07:15 AM	15	149	0	0	164	0	0	0	0	0	0	72	44	0	116	56	0	24	0	80	360
07:30 AM	30	223	2	1	256	0	0	0	0	0	0	96	63	1	160	67	0	41	1	109	525
07:45 AM	54	283	3	0	340	0	0	0	0	0	0	133	64	1	198	105	0	63	0	168	706
Total	109	747	5	1	862	0	0	0	0	0	0	349	189	2	540	275	0	140	1	416	1818
08:00 AM	45	186	0	0	231	0	0	0	0	0	0	118	69	0	187	92	0	51	0	143	561
08:15 AM	28	147	1	1	177	0	0	0	0	0	0	117	112	0	229	59	0	32	0	91	497
08:30 AM	21	130	1	0	152	0	0	0	0	0	0	83	88	0	171	68	0	31	0	99	422
08:45 AM	19	135	1	0	155	0	0	0	0	0	0	78	69	0	147	57	0	17	0	74	376
Total	113	598	3	1	715	0	0	0	0	0	0	396	338	0	734	276	0	131	0	407	1856
Grand Total	222	1345	8	2	1577	0	0	0	0	0	0	745	527	2	1274	551	0	271	1	823	3674
Apprch %	14.1	85.3	0.5	0.1		0	0	0	0		0	58.5	41.4	0.2		67	0	32.9	0.1		
Total %	6	36.6	0.2	0.1	42.9	0	0	0	0	0	0	20.3	14.3	0.1	34.7	15	0	7.4	0	22.4	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				E ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	30	223	2	255	0	0	0	0	0	96	63	159	67	0	41	108	522
07:45 AM	**54**	**283**	**3**	**340**	0	0	0	0	0	**133**	64	197	**105**	0	**63**	**168**	**705**
08:00 AM	45	186	0	231	0	0	0	0	0	118	69	187	92	0	51	143	561
08:15 AM	28	147	1	176	0	0	0	0	0	117	**112**	**229**	59	0	32	91	496
Total Volume	157	839	6	1002	0	0	0	0	0	464	308	772	323	0	187	510	2284
% App. Total	15.7	83.7	0.6		0	0	0		0	60.1	39.9		63.3	0	36.7		
PHF	.727	.741	.500	.737	.000	.000	.000	.000	.000	.872	.688	.843	.769	.000	.742	.759	.810

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File Name : 27AM FINAL
Site Code : 00000027
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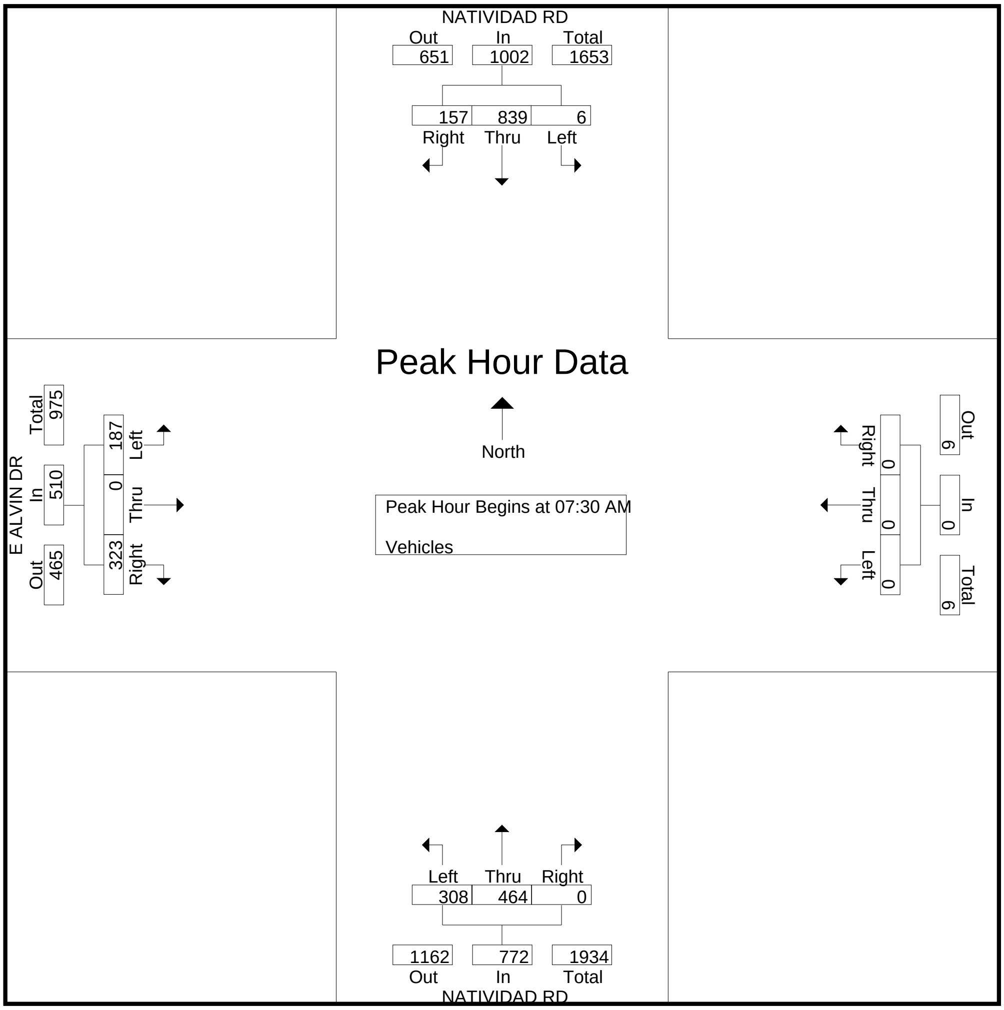

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File Name : 28AM FINAL
Site Code : 00000028
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	INDEPENDENCE BLVD Southbound					CONSTITUTION BLVD Westbound					DRIVEWAY Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	56	18	10	0	84	4	117	0	0	121	5	15	29	0	49	8	42	17	0	67	321
07:15 AM	75	21	6	1	103	4	168	2	0	174	3	8	37	1	49	21	87	29	0	137	463
07:30 AM	115	19	13	2	149	8	265	0	1	274	3	13	46	0	62	28	91	31	0	150	635
07:45 AM	117	19	16	2	154	9	281	4	5	299	1	18	37	0	56	20	129	38	1	188	697
Total	363	77	45	5	490	25	831	6	6	868	12	54	149	1	216	77	349	115	1	542	2116
08:00 AM	85	23	17	0	125	27	199	1	3	230	4	22	35	0	61	20	164	55	1	240	656
08:15 AM	105	30	12	1	148	8	242	1	15	266	4	20	38	0	62	19	98	35	2	154	630
08:30 AM	74	23	12	0	109	20	155	3	16	194	6	20	38	4	68	25	101	53	3	182	553
08:45 AM	117	26	20	0	163	27	175	1	8	211	2	27	52	2	83	25	85	56	0	166	623
Total	381	102	61	1	545	82	771	6	42	901	16	89	163	6	274	89	448	199	6	742	2462
Grand Total	744	179	106	6	1035	107	1602	12	48	1769	28	143	312	7	490	166	797	314	7	1284	4578
Apprch %	71.9	17.3	10.2	0.6		6	90.6	0.7	2.7		5.7	29.2	63.7	1.4		12.9	62.1	24.5	0.5		
Total %	16.3	3.9	2.3	0.1	22.6	2.3	35	0.3	1	38.6	0.6	3.1	6.8	0.2	10.7	3.6	17.4	6.9	0.2	28	

	INDEPENDENCE BLVD Southbound				CONSTITUTION BLVD Westbound				DRIVEWAY Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	115	19	13	147	8	265	0	273	3	13	**46**	**62**	**28**	91	31	150	632
07:45 AM	**117**	19	16	**152**	9	**281**	**4**	**294**	1	18	37	56	20	129	38	187	**689**
08:00 AM	85	23	**17**	125	**27**	199	1	227	**4**	**22**	35	61	20	**164**	**55**	**239**	652
08:15 AM	105	**30**	12	147	8	242	1	251	4	20	38	62	19	98	35	152	612
Total Volume	422	91	58	571	52	987	6	1045	12	73	156	241	87	482	159	728	2585
% App. Total	73.9	15.9	10.2		5	94.4	0.6		5	30.3	64.7		12	66.2	21.8		
PHF	.902	.758	.853	.939	.481	.878	.375	.889	.750	.830	.848	.972	.777	.735	.723	.762	.938

Traffic Data Service

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File Name : 28AM FINAL
Site Code : 00000028
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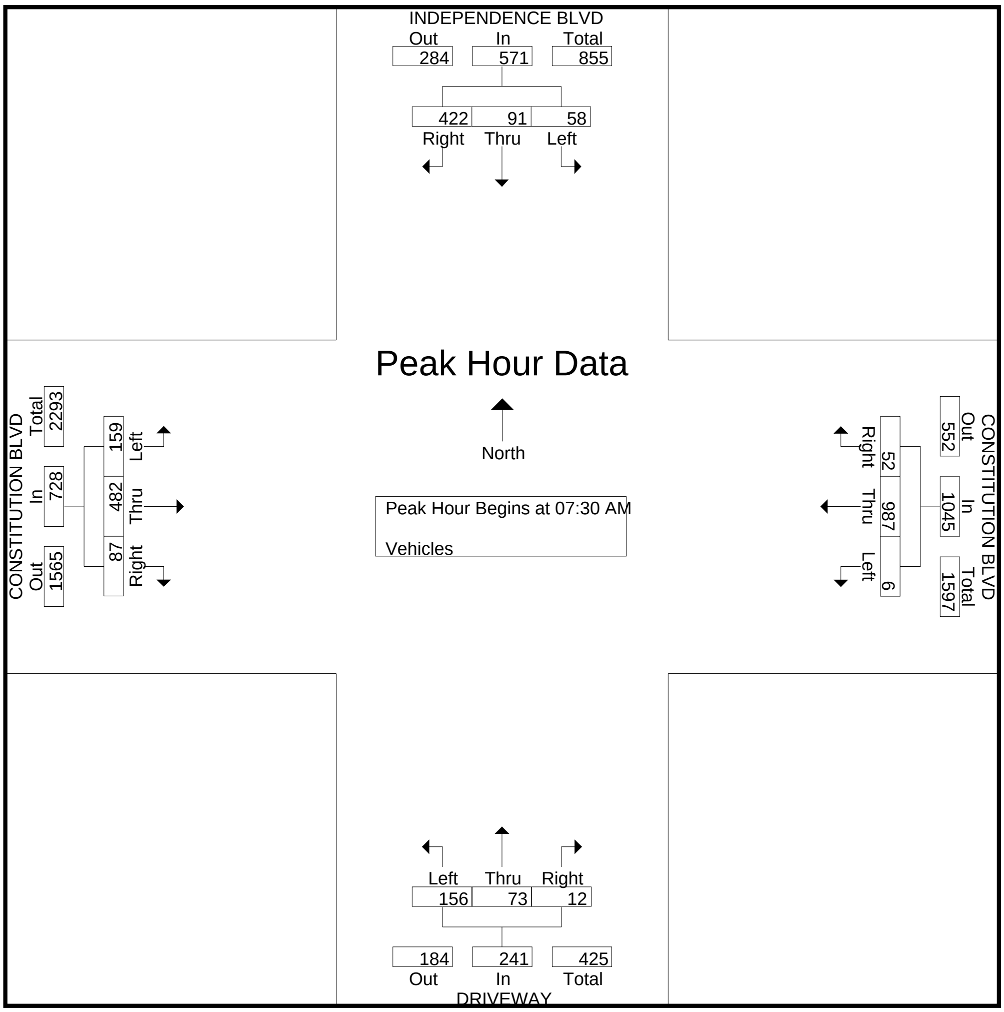

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File Name : 29AM FINAL
Site Code : 00000029
Start Date : 11/17/2015
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Groups Printed- Vehicles

	E BORONDA RD Southbound					Westbound					E BORONDA RD Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	9	61	0	0	70	0	0	0	0	0	0	82	2	0	84	6	0	23	0	29	183
07:15 AM	10	61	0	0	71	0	0	0	0	0	0	99	5	0	104	16	0	40	1	57	232
07:30 AM	21	81	0	0	102	0	0	0	0	0	0	124	14	0	138	19	0	49	0	68	308
07:45 AM	30	127	0	0	157	0	0	0	0	0	0	88	15	0	103	25	0	51	0	76	336
Total	70	330	0	0	400	0	0	0	0	0	0	393	36	0	429	66	0	163	1	230	1059
08:00 AM	21	91	0	0	112	0	0	0	0	0	0	105	17	0	122	37	0	29	0	66	300
08:15 AM	17	67	0	0	84	0	0	0	0	0	0	99	17	0	116	20	0	39	2	61	261
08:30 AM	10	64	0	0	74	0	0	0	0	0	0	101	13	0	114	18	0	31	2	51	239
08:45 AM	34	98	0	0	132	0	0	0	0	0	0	137	11	0	148	19	0	29	0	48	328
Total	82	320	0	0	402	0	0	0	0	0	0	442	58	0	500	94	0	128	4	226	1128
Grand Total	152	650	0	0	802	0	0	0	0	0	0	835	94	0	929	160	0	291	5	456	2187
Apprch %	19	81	0	0		0	0	0	0		0	89.9	10.1	0		35.1	0	63.8	1.1		
Total %	7	29.7	0	0	36.7	0	0	0	0	0	0	38.2	4.3	0	42.5	7.3	0	13.3	0.2	20.9	

	E BORONDA RD Southbound				Westbound				E BORONDA RD Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	21	81	0	102	0	0	0	0	0	**124**	14	**138**	19	0	49	68	308
07:45 AM	**30**	**127**	0	**157**	0	0	0	0	0	88	15	103	25	0	**51**	**76**	**336**
08:00 AM	21	91	0	112	0	0	0	0	0	105	**17**	122	**37**	0	29	66	300
08:15 AM	17	67	0	84	0	0	0	0	0	99	17	116	20	0	39	59	259
Total Volume	89	366	0	455	0	0	0	0	0	416	63	479	101	0	168	269	1203
% App. Total	19.6	80.4	0		0	0	0		0	86.8	13.2		37.5	0	62.5		
PHF	.742	.720	.000	.725	.000	.000	.000	.000	.000	.839	.926	.868	.682	.000	.824	.885	.895

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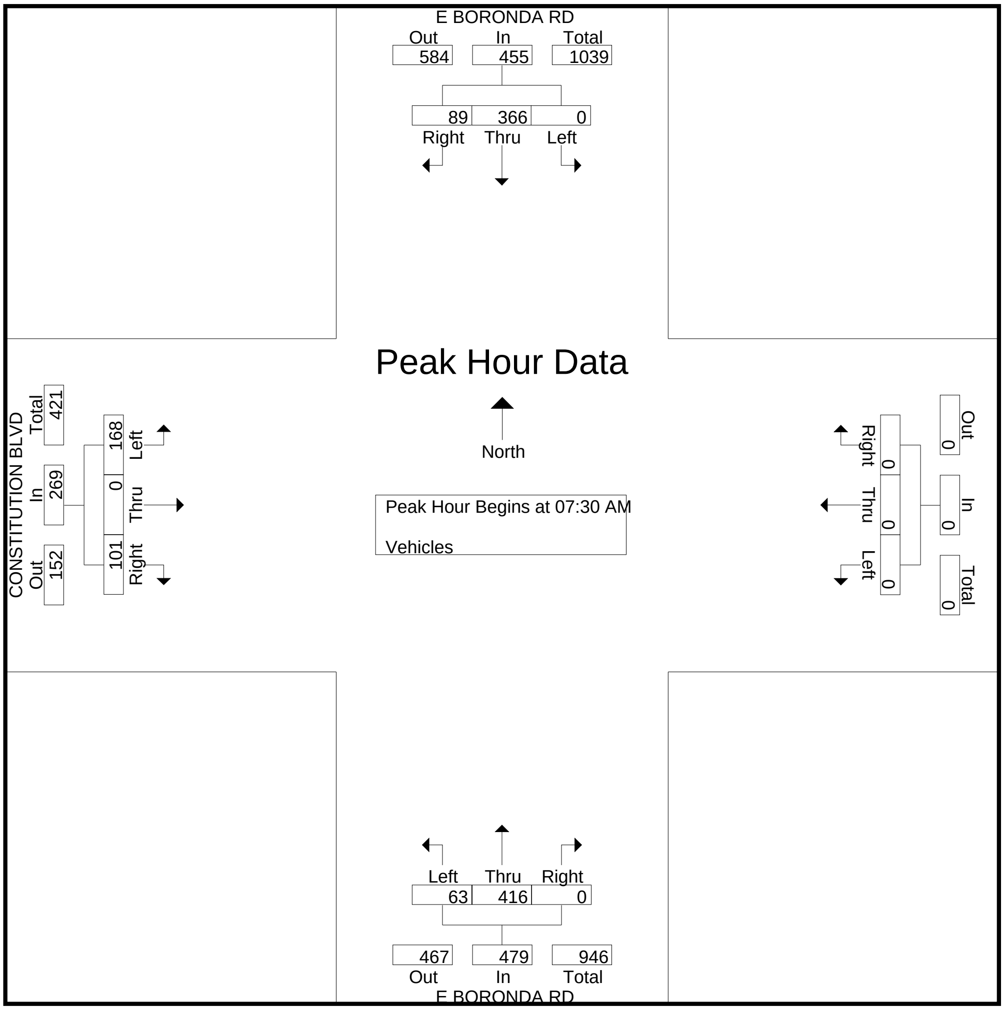

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File Name : 30AM FINAL
Site Code : 00000030
Start Date : 1/14/2016
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Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					W LAUREL DR Westbound					US-101 SB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	42	0	31	0	73	36	153	0	0	189	0	0	0	0	0	35	96	0	0	131	393
07:15 AM	51	0	27	0	78	44	155	0	0	199	0	0	0	0	0	48	156	0	0	204	481
07:30 AM	88	0	42	1	131	72	248	0	0	320	0	0	0	0	0	65	193	0	0	258	709
07:45 AM	109	0	63	0	172	83	272	0	0	355	0	0	0	0	0	66	214	0	0	280	807
Total	290	0	163	1	454	235	828	0	0	1063	0	0	0	0	0	214	659	0	0	873	2390
08:00 AM	90	0	43	1	134	60	339	0	0	399	0	0	0	0	0	65	184	0	0	249	782
08:15 AM	73	0	43	0	116	45	296	0	0	341	0	0	0	0	0	59	253	0	0	312	769
08:30 AM	74	0	35	1	110	20	216	0	0	236	0	0	0	0	0	68	221	0	0	289	635
08:45 AM	87	0	37	0	124	33	220	0	0	253	0	0	0	0	0	52	193	0	0	245	622
Total	324	0	158	2	484	158	1071	0	0	1229	0	0	0	0	0	244	851	0	0	1095	2808
Grand Total	614	0	321	3	938	393	1899	0	0	2292	0	0	0	0	0	458	1510	0	0	1968	5198
Apprch %	65.5	0	34.2	0.3		17.1	82.9	0	0		0	0	0	0		23.3	76.7	0	0		
Total %	11.8	0	6.2	0.1	18	7.6	36.5	0	0	44.1	0	0	0	0	0	8.8	29	0	0	37.9	

	US-101 SB RAMPS Southbound				W LAUREL DR Westbound				US-101 SB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	88	0	42	130	72	248	0	320	0	0	0	0	65	193	0	258	708
07:45 AM	**109**	0	**63**	**172**	**83**	272	0	355	0	0	0	0	**66**	214	0	280	**807**
08:00 AM	90	0	43	133	60	**339**	0	**399**	0	0	0	0	65	184	0	249	781
08:15 AM	73	0	43	116	45	296	0	341	0	0	0	0	59	**253**	0	**312**	769
Total Volume	360	0	191	551	260	1155	0	1415	0	0	0	0	255	844	0	1099	3065
% App. Total	65.3	0	34.7		18.4	81.6	0		0	0	0		23.2	76.8	0		
PHF	.826	.000	.758	.801	.783	.852	.000	.887	.000	.000	.000	.000	.966	.834	.000	.881	.950

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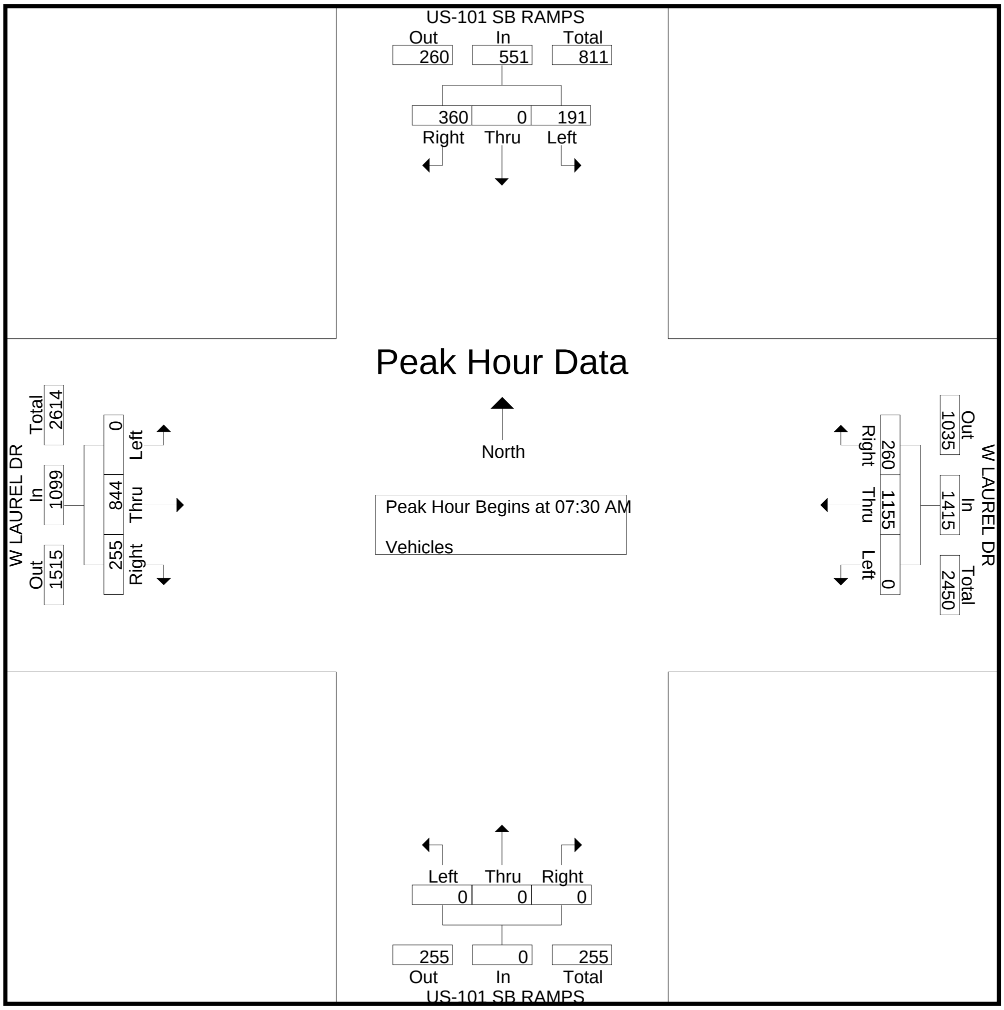

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File Name : 31AM FINAL
Site Code : 00000031
Start Date : 1/14/2016
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Groups Printed- Vehicles

	US-101 NB RAMPS Southbound					W LAUREL DR Westbound					US-101 NB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	76	167	0	0	243	12	0	24	0	36	38	88	0	0	126	405
07:15 AM	0	0	0	0	0	65	165	0	0	230	19	0	39	0	58	73	106	0	0	179	467
07:30 AM	0	0	0	1	1	55	276	0	0	331	22	0	40	0	62	68	173	0	0	241	635
07:45 AM	0	0	0	0	0	64	294	0	0	358	46	0	67	0	113	76	208	0	0	284	755
Total	0	0	0	1	1	260	902	0	0	1162	99	0	170	0	269	255	575	0	0	830	2262
08:00 AM	0	0	0	1	1	46	324	0	0	370	29	0	67	0	96	63	171	0	0	234	701
08:15 AM	0	0	0	0	0	49	262	0	0	311	19	0	70	0	89	73	226	0	0	299	699
08:30 AM	0	0	0	1	1	44	176	0	0	220	27	0	65	0	92	60	193	0	0	253	566
08:45 AM	0	0	0	0	0	32	193	0	0	225	25	0	50	0	75	69	172	0	0	241	541
Total	0	0	0	2	2	171	955	0	0	1126	100	0	252	0	352	265	762	0	0	1027	2507
Grand Total	0	0	0	3	3	431	1857	0	0	2288	199	0	422	0	621	520	1337	0	0	1857	4769
Apprch %	0	0	0	100		18.8	81.2	0	0		32	0	68	0		28	72	0	0		
Total %	0	0	0	0.1	0.1	9	38.9	0	0	48	4.2	0	8.8	0	13	10.9	28	0	0	38.9	

	US-101 NB RAMPS Southbound				W LAUREL DR Westbound				US-101 NB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	55	276	0	331	22	0	40	62	68	173	0	241	634
07:45 AM	0	0	0	0	**64**	294	0	358	**46**	0	67	**113**	**76**	208	0	284	**755**
08:00 AM	0	0	0	0	46	**324**	0	**370**	29	0	67	96	63	171	0	234	700
08:15 AM	0	0	0	0	49	262	0	311	19	0	**70**	89	73	**226**	0	**299**	699
Total Volume	0	0	0	0	214	1156	0	1370	116	0	244	360	280	778	0	1058	2788
% App. Total	0	0	0		15.6	84.4	0		32.2	0	67.8		26.5	73.5	0		
PHF	.000	.000	.000	.000	.836	.892	.000	.926	.630	.000	.871	.796	.921	.861	.000	.885	.923

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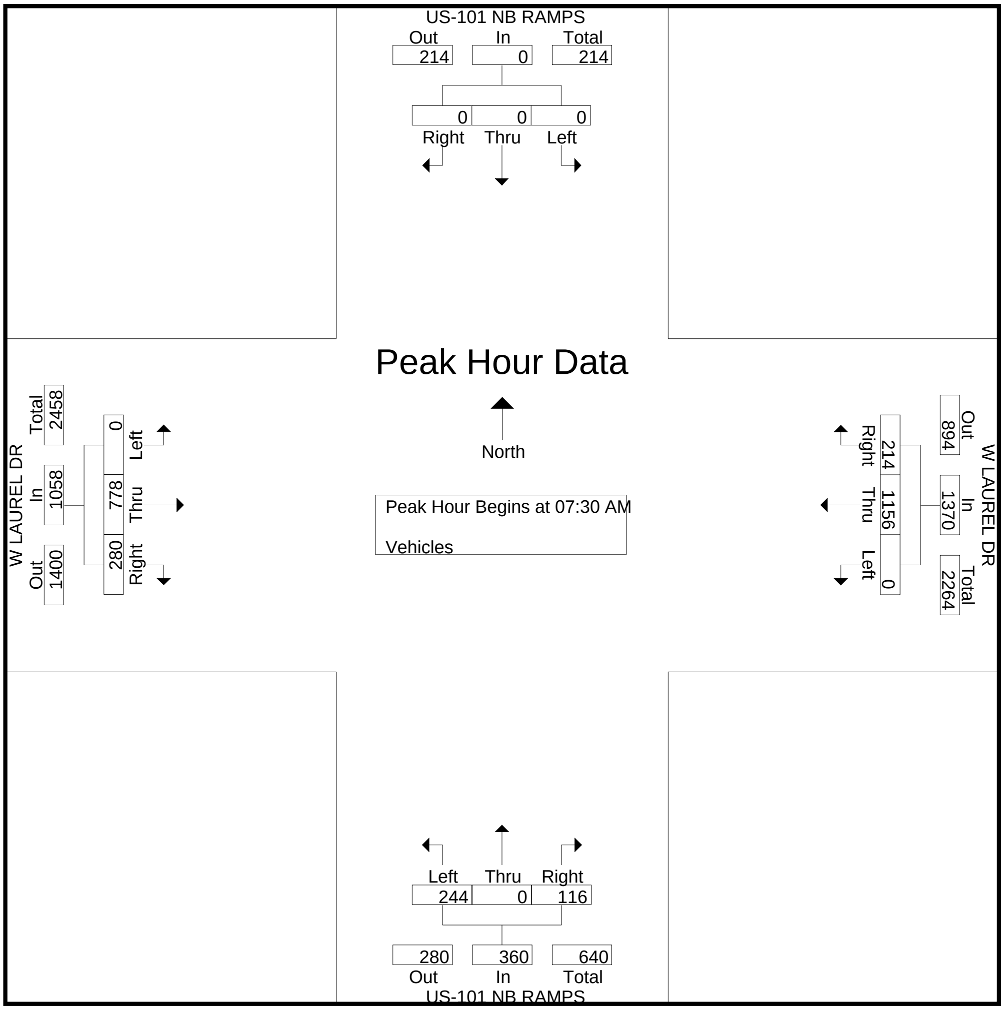

Traffic Data Service

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File Name : 32AM FINAL
Site Code : 00000032
Start Date : 1/14/2016
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Groups Printed- Vehicles

	N MAIN ST Southbound					E LAUREL DR Westbound					N MAIN ST Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	22	104	14	0	140	10	68	17	1	96	14	43	7	0	64	9	40	17	0	66	366
07:15 AM	23	139	20	0	182	8	69	20	1	98	21	55	6	0	82	9	65	17	1	92	454
07:30 AM	24	167	23	0	214	9	86	31	0	126	22	89	8	1	120	21	97	30	1	149	609
07:45 AM	18	238	39	2	297	17	114	35	2	168	29	122	13	3	167	15	110	41	3	169	801
Total	87	648	96	2	833	44	337	103	4	488	86	309	34	4	433	54	312	105	5	476	2230
08:00 AM	39	180	54	0	273	17	123	34	2	176	36	126	28	0	190	14	89	48	1	152	791
08:15 AM	28	140	28	0	196	31	113	33	4	181	26	115	18	2	161	20	77	46	0	143	681
08:30 AM	35	148	41	2	226	22	85	27	3	137	19	98	20	0	137	19	80	44	3	146	646
08:45 AM	29	163	33	1	226	31	87	26	0	144	21	88	18	0	127	28	70	28	1	127	624
Total	131	631	156	3	921	101	408	120	9	638	102	427	84	2	615	81	316	166	5	568	2742
Grand Total	218	1279	252	5	1754	145	745	223	13	1126	188	736	118	6	1048	135	628	271	10	1044	4972
Apprch %	12.4	72.9	14.4	0.3		12.9	66.2	19.8	1.2		17.9	70.2	11.3	0.6		12.9	60.2	26	1		
Total %	4.4	25.7	5.1	0.1	35.3	2.9	15	4.5	0.3	22.6	3.8	14.8	2.4	0.1	21.1	2.7	12.6	5.5	0.2	21	

	N MAIN ST Southbound				E LAUREL DR Westbound				N MAIN ST Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	18	**238**	39	**295**	17	114	**35**	166	29	122	13	164	15	**110**	41	**166**	**791**
08:00 AM	**39**	180	**54**	273	17	**123**	34	174	**36**	**126**	**28**	**190**	14	89	**48**	151	788
08:15 AM	28	140	28	196	**31**	113	33	**177**	26	115	18	159	**20**	77	46	143	675
08:30 AM	35	148	41	224	22	85	27	134	19	98	20	137	19	80	44	143	638
Total Volume	120	706	162	988	87	435	129	651	110	461	79	650	68	356	179	603	2892
% App. Total	12.1	71.5	16.4		13.4	66.8	19.8		16.9	70.9	12.2		11.3	59	29.7		
PHF	.769	.742	.750	.837	.702	.884	.921	.919	.764	.915	.705	.855	.850	.809	.932	.908	.914

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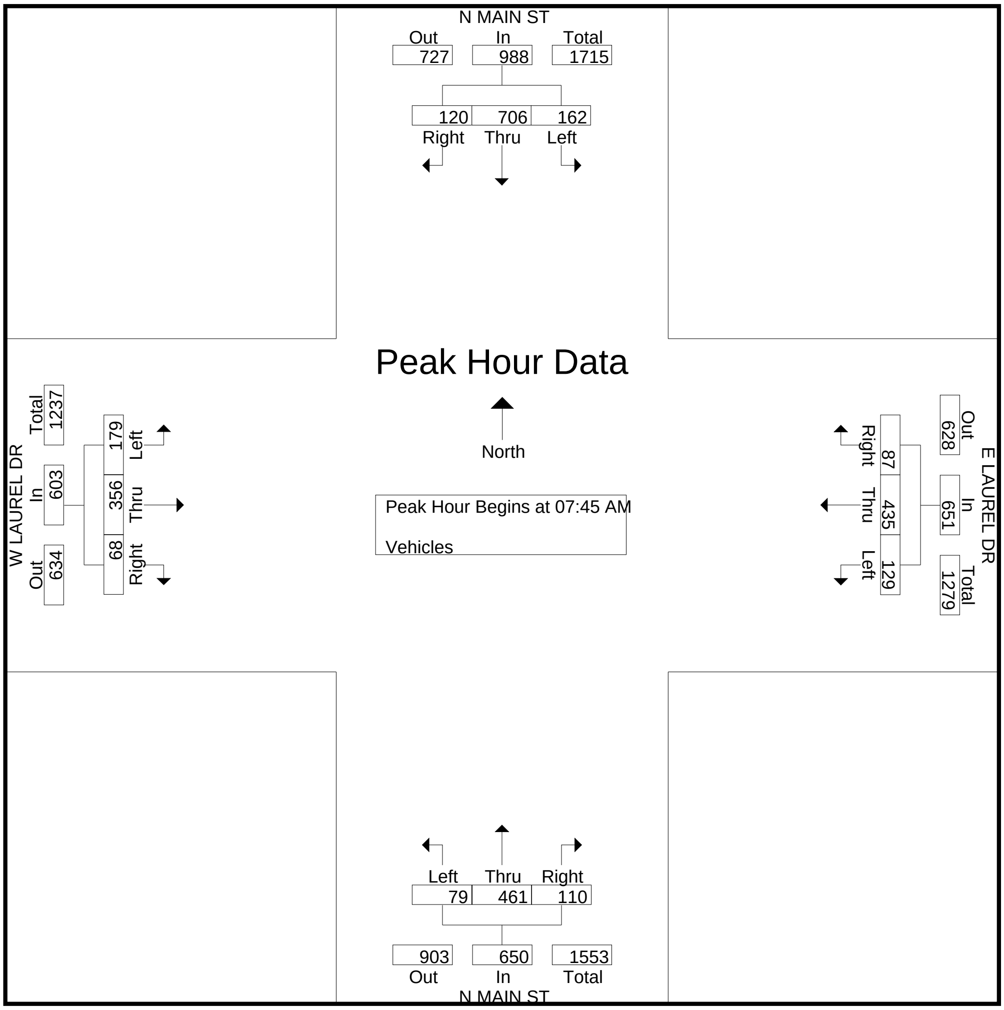

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File Name : 33AM FINAL
Site Code : 00000033
Start Date : 1/14/2016
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Groups Printed- Vehicles

	NATIVIDAD RD Southbound					E LAUREL DR Westbound					NATIVIDAD RD Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	4	93	30	0	127	40	54	153	1	248	55	66	6	0	127	5	38	17	0	60	562
07:15 AM	8	139	39	0	186	63	70	193	1	327	82	81	3	0	166	13	66	25	1	105	784
07:30 AM	8	181	64	1	254	73	108	197	0	378	135	127	12	1	275	13	91	33	1	138	1045
07:45 AM	19	251	106	0	376	86	150	166	3	405	154	224	17	1	396	22	120	38	0	180	1357
Total	39	664	239	1	943	262	382	709	5	1358	426	498	38	2	964	53	315	113	2	483	3748
08:00 AM	21	198	113	0	332	59	123	164	2	348	143	169	11	1	324	27	132	36	0	195	1199
08:15 AM	13	140	52	0	205	86	130	176	1	393	106	135	5	0	246	25	75	25	0	125	969
08:30 AM	16	159	73	0	248	54	92	162	0	308	93	100	16	0	209	16	69	30	1	116	881
08:45 AM	8	126	46	1	181	50	89	201	2	342	83	88	10	0	181	13	63	20	0	96	800
Total	58	623	284	1	966	249	434	703	5	1391	425	492	42	1	960	81	339	111	1	532	3849
Grand Total	97	1287	523	2	1909	511	816	1412	10	2749	851	990	80	3	1924	134	654	224	3	1015	7597
Apprch %	5.1	67.4	27.4	0.1		18.6	29.7	51.4	0.4		44.2	51.5	4.2	0.2		13.2	64.4	22.1	0.3		
Total %	1.3	16.9	6.9	0	25.1	6.7	10.7	18.6	0.1	36.2	11.2	13	1.1	0	25.3	1.8	8.6	2.9	0	13.4	

	NATIVIDAD RD Southbound				E LAUREL DR Westbound				NATIVIDAD RD Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	8	181	64	253	73	108	**197**	378	135	127	12	274	13	91	33	137	1042
07:45 AM	19	**251**	106	**376**	**86**	**150**	166	**402**	**154**	**224**	**17**	**395**	22	120	**38**	180	**1353**
08:00 AM	**21**	198	**113**	332	59	123	164	346	143	169	11	323	**27**	**132**	36	**195**	1196
08:15 AM	13	140	52	205	86	130	176	392	106	135	5	246	25	75	25	125	968
Total Volume	61	770	335	1166	304	511	703	1518	538	655	45	1238	87	418	132	637	4559
% App. Total	5.2	66	28.7		20	33.7	46.3		43.5	52.9	3.6		13.7	65.6	20.7		
PHF	.726	.767	.741	.775	.884	.852	.892	.944	.873	.731	.662	.784	.806	.792	.868	.817	.842

Traffic Data Service

Campbell, CA

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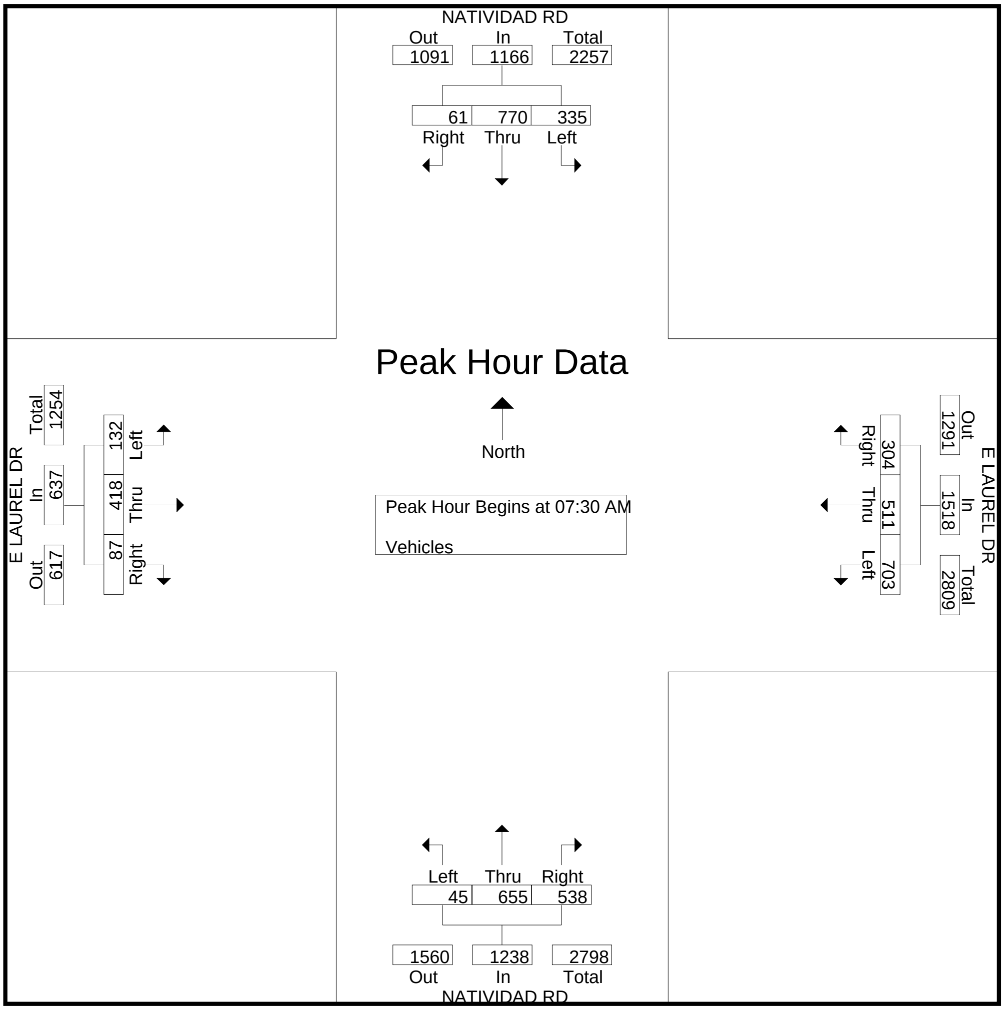
File Name : 33AM FINAL
Site Code : 00000033
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

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File Name : 34AM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	CONSTITUTION BLVD Southbound					E LAUREL DR Westbound					Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	167	0	34	1	202	16	72	0	0	88	0	0	0	0	0	0	56	80	0	136	426
07:15 AM	240	0	35	0	275	30	86	0	0	116	0	0	0	0	0	0	88	124	0	212	603
07:30 AM	354	0	84	0	438	32	134	0	0	166	0	0	0	0	0	0	115	159	0	274	878
07:45 AM	322	0	79	0	401	55	163	0	0	218	0	0	0	0	0	0	163	190	0	353	972
Total	1083	0	232	1	1316	133	455	0	0	588	0	0	0	0	0	0	422	553	0	975	2879
08:00 AM	229	0	74	0	303	54	136	0	0	190	0	0	0	0	0	0	138	217	0	355	848
08:15 AM	270	0	66	0	336	41	157	0	0	198	0	0	0	0	0	0	109	148	0	257	791
08:30 AM	234	0	36	0	270	59	121	0	0	180	0	0	0	0	0	0	112	159	0	271	721
08:45 AM	258	0	61	0	319	60	150	0	0	210	0	0	0	0	0	0	104	148	0	252	781
Total	991	0	237	0	1228	214	564	0	0	778	0	0	0	0	0	0	463	672	0	1135	3141
Grand Total	2074	0	469	1	2544	347	1019	0	0	1366	0	0	0	0	0	0	885	1225	0	2110	6020
Apprch %	81.5	0	18.4	0		25.4	74.6	0	0		0	0	0	0		0	41.9	58.1	0		
Total %	34.5	0	7.8	0	42.3	5.8	16.9	0	0	22.7	0	0	0	0	0	0	14.7	20.3	0	35	

	CONSTITUTION BLVD Southbound				E LAUREL DR Westbound				Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**354**	0	**84**	**438**	32	134	0	166	0	0	0	0	0	115	159	274	878
07:45 AM	322	0	79	401	**55**	**163**	0	**218**	0	0	0	0	0	**163**	190	353	**972**
08:00 AM	229	0	74	303	54	136	0	190	0	0	0	0	0	138	**217**	**355**	848
08:15 AM	270	0	66	336	41	157	0	198	0	0	0	0	0	109	148	257	791
Total Volume	1175	0	303	1478	182	590	0	772	0	0	0	0	0	525	714	1239	3489
% App. Total	79.5	0	20.5		23.6	76.4	0		0	0	0		0	42.4	57.6		
PHF	.830	.000	.902	.844	.827	.905	.000	.885	.000	.000	.000	.000	.000	.805	.823	.873	.897

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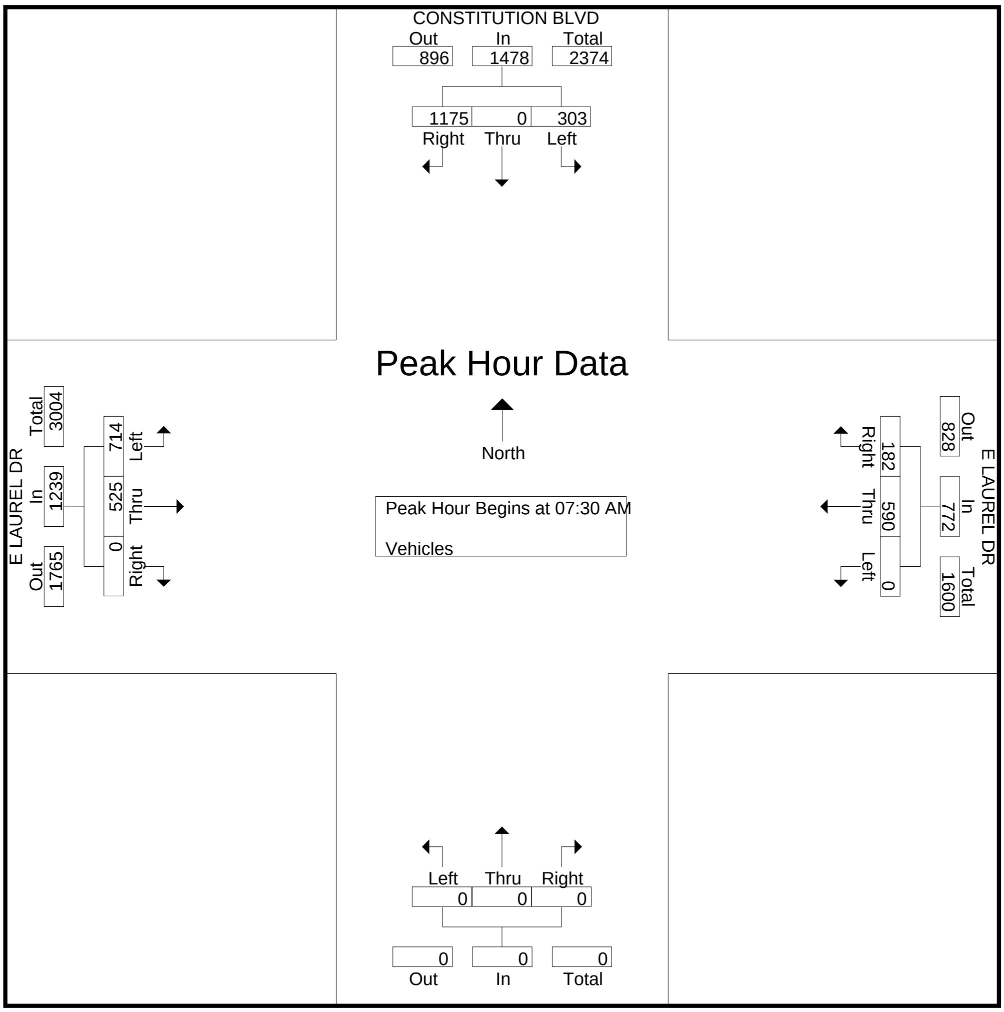
File Name : 34AM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 2



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File Name : 35AM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					N SANBORN RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	20	7	0	27	0	0	33	2	35	14	48	0	0	62	124
07:15 AM	0	0	0	0	0	0	41	6	0	47	5	0	37	0	42	17	52	0	0	69	158
07:30 AM	0	0	0	0	0	0	69	9	0	78	3	0	43	1	47	22	96	0	0	118	243
07:45 AM	0	0	0	0	0	0	113	17	0	130	5	0	45	4	54	30	124	0	0	154	338
Total	0	0	0	0	0	0	243	39	0	282	13	0	158	7	178	83	320	0	0	403	863
08:00 AM	0	0	0	0	0	0	71	28	0	99	3	0	29	4	36	46	113	0	0	159	294
08:15 AM	0	0	0	0	0	0	39	15	0	54	0	0	38	6	44	23	51	0	0	74	172
08:30 AM	0	0	0	0	0	0	25	7	0	32	3	0	32	10	45	12	30	0	0	42	119
08:45 AM	0	0	0	0	0	0	33	8	0	41	0	0	33	9	42	14	48	0	0	62	145
Total	0	0	0	0	0	0	168	58	0	226	6	0	132	29	167	95	242	0	0	337	730
Grand Total	0	0	0	0	0	0	411	97	0	508	19	0	290	36	345	178	562	0	0	740	1593
Apprch %	0	0	0	0		0	80.9	19.1	0		5.5	0	84.1	10.4		24.1	75.9	0	0		
Total %	0	0	0	0	0	0	25.8	6.1	0	31.9	1.2	0	18.2	2.3	21.7	11.2	35.3	0	0	46.5	

	Southbound				E BORONDA RD Westbound				N SANBORN RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	69	9	78	3	0	43	46	22	96	0	118	242
07:45 AM	0	0	0	0	0	**113**	17	**130**	**5**	0	**45**	**50**	30	**124**	0	154	**334**
08:00 AM	0	0	0	0	0	71	**28**	99	3	0	29	32	**46**	113	0	**159**	290
08:15 AM	0	0	0	0	0	39	15	54	0	0	38	38	23	51	0	74	166
Total Volume	0	0	0	0	0	292	69	361	11	0	155	166	121	384	0	505	1032
% App. Total	0	0	0		0	80.9	19.1		6.6	0	93.4		24	76	0		
PHF	.000	.000	.000	.000	.000	.646	.616	.694	.550	.000	.861	.830	.658	.774	.000	.794	.772

Traffic Data Service

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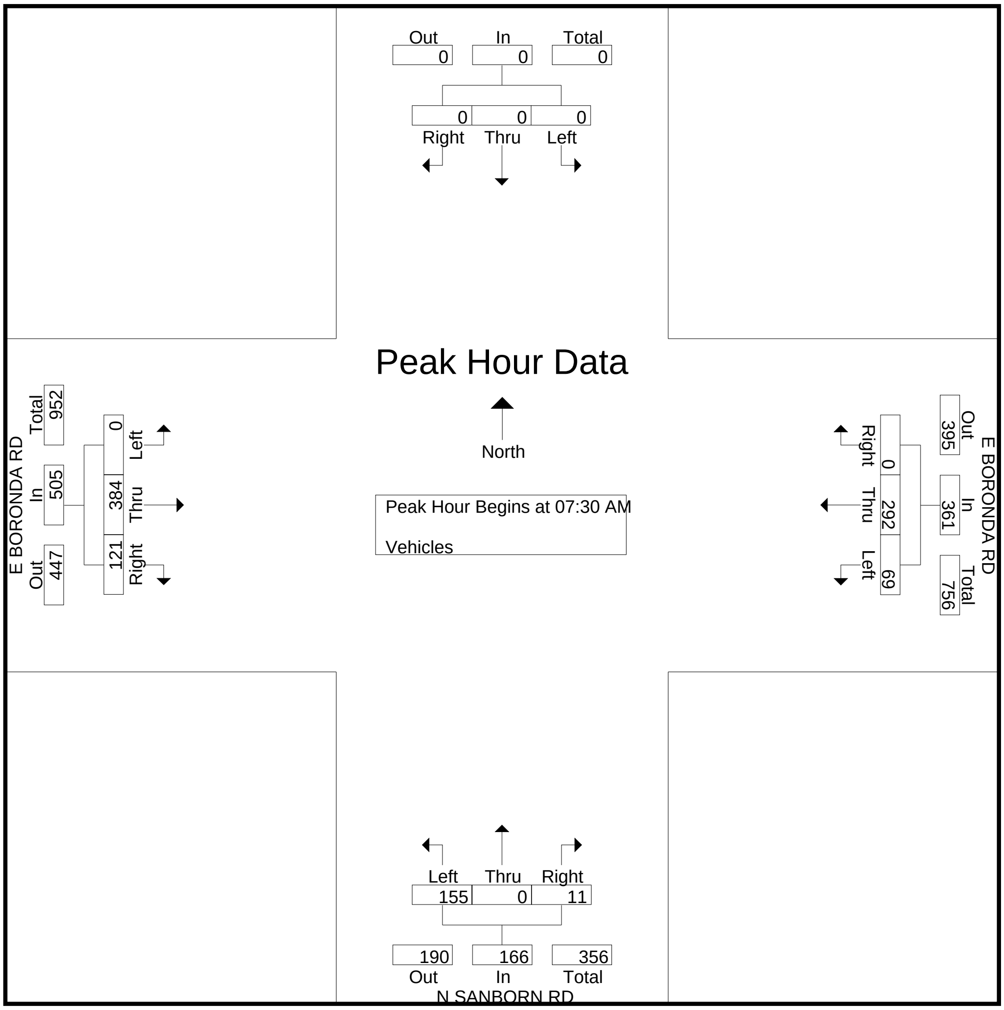
File Name : 35AM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

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File Name : 36AM FINAL
Site Code : 00000036
Start Date : 11/17/2015

Groups Printed- Vehicles

	OLD STAGE RD Southbound					WILLIAMS RD Westbound					OLD STAGE RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	8	9	0	0	17	0	0	0	0	0	1	6	5	0	12	10	0	41	0	51	80
07:15 AM	11	2	0	0	13	0	0	0	0	0	0	3	4	0	7	7	0	20	0	27	47
07:30 AM	20	6	0	0	26	0	0	0	0	0	0	6	10	0	16	9	0	19	0	28	70
07:45 AM	20	6	0	0	26	0	0	0	0	0	0	7	12	0	19	10	0	12	0	22	67
Total	59	23	0	0	82	0	0	0	0	0	1	22	31	0	54	36	0	92	0	128	264
08:00 AM	18	6	0	0	24	0	0	0	0	0	0	11	15	0	26	14	0	16	0	30	80
08:15 AM	10	5	1	0	16	0	0	0	0	0	0	8	2	0	10	6	0	20	0	26	52
08:30 AM	10	4	0	0	14	0	0	0	0	0	0	6	9	0	15	9	0	8	0	17	46
08:45 AM	5	5	0	0	10	0	0	0	0	0	0	5	3	0	8	10	0	17	0	27	45
Total	43	20	1	0	64	0	0	0	0	0	0	30	29	0	59	39	0	61	0	100	223
Grand Total	102	43	1	0	146	0	0	0	0	0	1	52	60	0	113	75	0	153	0	228	487
Apprch %	69.9	29.5	0.7	0		0	0	0	0		0.9	46	53.1	0		32.9	0	67.1	0		
Total %	20.9	8.8	0.2	0	30	0	0	0	0	0	0.2	10.7	12.3	0	23.2	15.4	0	31.4	0	46.8	

	OLD STAGE RD Southbound				WILLIAMS RD Westbound				OLD STAGE RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**20**	**6**	0	**26**	0	0	0	0	0	6	10	16	9	0	19	28	70
07:45 AM	20	6	0	26	0	0	0	0	0	7	12	19	10	0	12	22	67
08:00 AM	18	6	0	24	0	0	0	0	0	**11**	**15**	**26**	**14**	0	16	**30**	**80**
08:15 AM	10	5	**1**	16	0	0	0	0	0	8	2	10	6	0	**20**	26	52
Total Volume	68	23	1	92	0	0	0	0	0	32	39	71	39	0	67	106	269
% App. Total	73.9	25	1.1		0	0	0		0	45.1	54.9		36.8	0	63.2		
PHF	.850	.958	.250	.885	.000	.000	.000	.000	.000	.727	.650	.683	.696	.000	.838	.883	.841

Traffic Data Service

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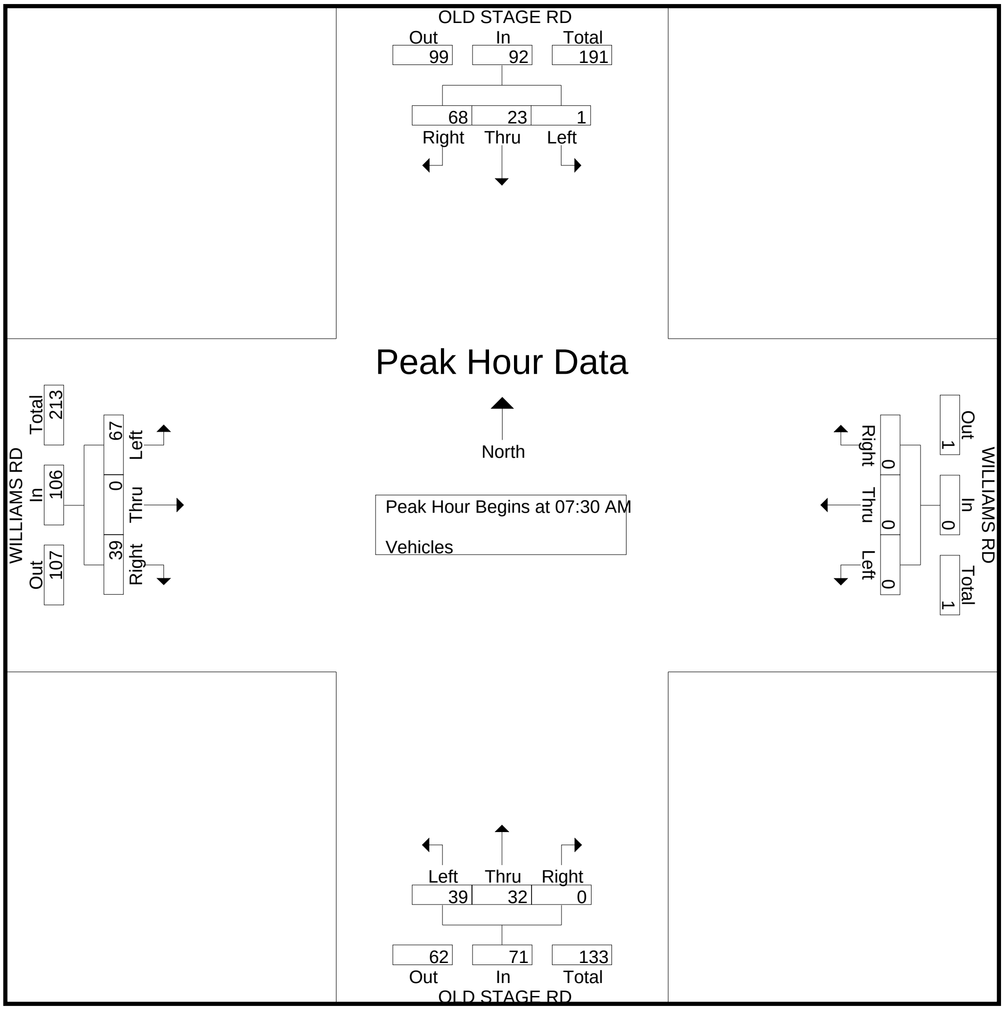
File Name : 36AM FINAL
Site Code : 00000036
Start Date : 11/17/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
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File Name : 37AM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E BERNAL DR Westbound					N MAIN ST Northbound					W BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	150	9	1	160	1	5	130	2	138	59	62	37	0	158	28	9	1	0	38	494
07:15 AM	0	179	8	0	187	4	10	151	1	166	88	68	48	0	204	30	3	2	0	35	592
07:30 AM	1	261	8	3	273	5	17	195	2	219	113	139	44	0	296	41	15	3	2	61	849
07:45 AM	3	278	11	0	292	11	13	209	2	235	165	192	56	6	419	39	5	3	1	48	994
Total	4	868	36	4	912	21	45	685	7	758	425	461	185	6	1077	138	32	9	3	182	2929
08:00 AM	4	172	13	0	189	5	11	163	0	179	105	114	56	2	277	36	9	4	3	52	697
08:15 AM	3	180	25	0	208	16	18	173	2	209	90	118	44	1	253	28	4	2	1	35	705
08:30 AM	3	179	13	0	195	8	11	85	4	108	63	131	39	1	234	30	4	2	0	36	573
08:45 AM	0	181	24	0	205	11	10	93	7	121	58	149	45	1	253	33	3	1	0	37	616
Total	10	712	75	0	797	40	50	514	13	617	316	512	184	5	1017	127	20	9	4	160	2591
Grand Total	14	1580	111	4	1709	61	95	1199	20	1375	741	973	369	11	2094	265	52	18	7	342	5520
Apprch %	0.8	92.5	6.5	0.2		4.4	6.9	87.2	1.5		35.4	46.5	17.6	0.5		77.5	15.2	5.3	2		
Total %	0.3	28.6	2	0.1	31	1.1	1.7	21.7	0.4	24.9	13.4	17.6	6.7	0.2	37.9	4.8	0.9	0.3	0.1	6.2	

	N MAIN ST Southbound				E BERNAL DR Westbound				N MAIN ST Northbound				W BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	261	8	270	5	17	195	217	113	139	44	296	**41**	**15**	3	**59**	842
07:45 AM	3	**278**	11	**292**	11	13	**209**	**233**	**165**	**192**	**56**	**413**	39	5	3	47	**985**
08:00 AM	**4**	172	13	189	5	11	163	179	105	114	56	275	36	9	**4**	49	692
08:15 AM	3	180	**25**	208	**16**	**18**	173	207	90	118	44	252	28	4	2	34	701
Total Volume	11	891	57	959	37	59	740	836	473	563	200	1236	144	33	12	189	3220
% App. Total	1.1	92.9	5.9		4.4	7.1	88.5		38.3	45.6	16.2		76.2	17.5	6.3		
PHF	.688	.801	.570	.821	.578	.819	.885	.897	.717	.733	.893	.748	.878	.550	.750	.801	.817

Traffic Data Service

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File Name : 37AM FINAL
Site Code : 00000037
Start Date : 11/18/2015
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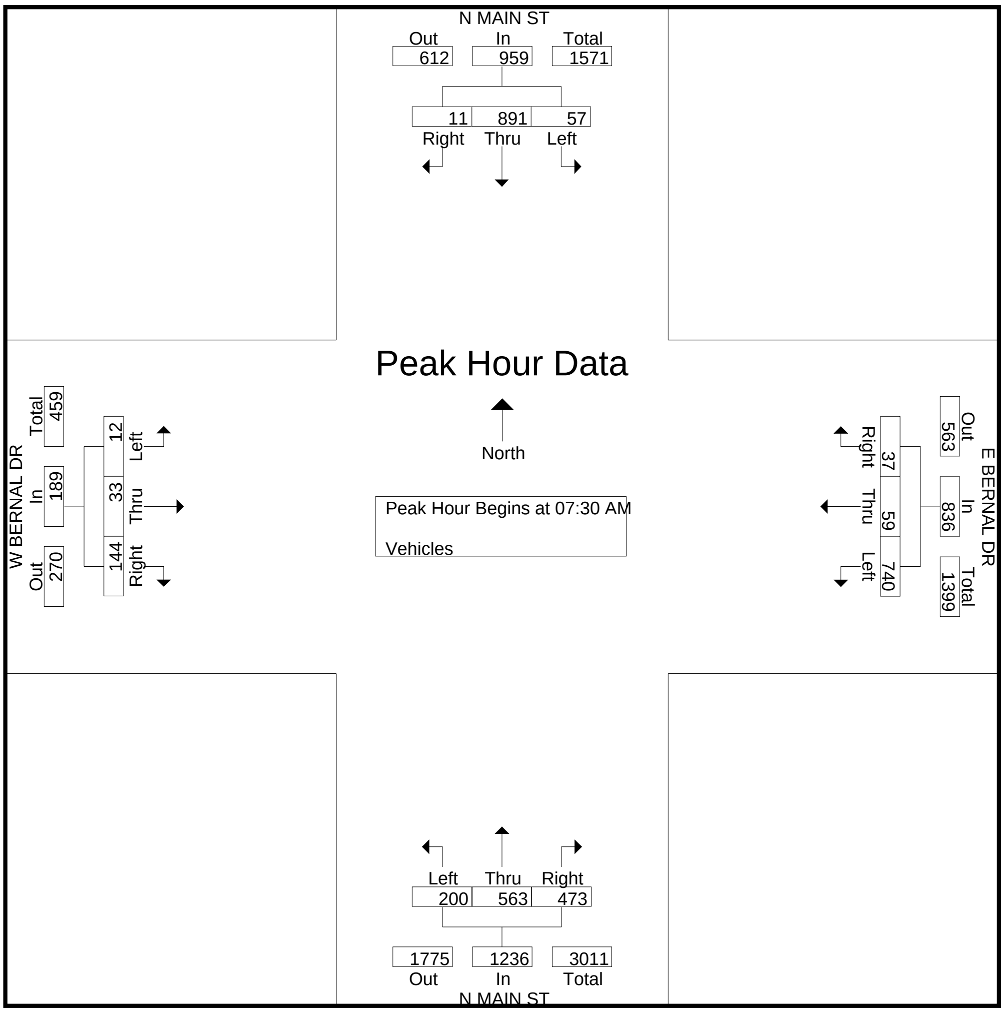

Traffic Data Service

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File Name : 38AM FINAL
Site Code : 00000038
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					LA POSADA WAY Westbound					SHERWOOD DR Northbound					E BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	86	173	1	0	260	0	1	1	0	2	1	84	3	0	88	5	2	31	0	38	388
07:15 AM	97	262	2	0	361	7	4	5	1	17	1	100	3	1	105	13	3	41	0	57	540
07:30 AM	82	332	2	0	416	5	7	3	0	15	1	185	6	1	193	14	1	101	0	116	740
07:45 AM	98	339	4	0	441	15	6	3	2	26	1	213	16	2	232	32	3	106	0	141	840
Total	363	1106	9	0	1478	27	18	12	3	60	4	582	28	4	618	64	9	279	0	352	2508
08:00 AM	93	282	10	0	385	2	0	3	0	5	1	203	12	1	217	20	0	76	0	96	703
08:15 AM	72	265	2	0	339	4	1	3	0	8	2	191	19	3	215	25	1	47	0	73	635
08:30 AM	93	262	3	0	358	3	3	3	2	11	1	133	11	1	146	25	4	51	0	80	595
08:45 AM	70	291	2	0	363	2	0	0	0	2	0	138	11	16	165	25	3	48	0	76	606
Total	328	1100	17	0	1445	11	4	9	2	26	4	665	53	21	743	95	8	222	0	325	2539
Grand Total	691	2206	26	0	2923	38	22	21	5	86	8	1247	81	25	1361	159	17	501	0	677	5047
Apprch %	23.6	75.5	0.9	0		44.2	25.6	24.4	5.8		0.6	91.6	6	1.8		23.5	2.5	74	0		
Total %	13.7	43.7	0.5	0	57.9	0.8	0.4	0.4	0.1	1.7	0.2	24.7	1.6	0.5	27	3.2	0.3	9.9	0	13.4	

	NATIVIDAD RD Southbound				LA POSADA WAY Westbound				SHERWOOD DR Northbound				E BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	82	332	2	416	5	**7**	**3**	15	1	185	6	192	14	1	101	116	739
07:45 AM	**98**	**339**	4	**441**	**15**	6	3	**24**	1	**213**	16	**230**	**32**	**3**	**106**	**141**	**836**
08:00 AM	93	282	**10**	385	2	0	3	5	1	203	12	216	20	0	76	96	702
08:15 AM	72	265	2	339	4	1	3	8	**2**	191	**19**	212	25	1	47	73	632
Total Volume	345	1218	18	1581	26	14	12	52	5	792	53	850	91	5	330	426	2909
% App. Total	21.8	77	1.1		50	26.9	23.1		0.6	93.2	6.2		21.4	1.2	77.5		
PHF	.880	.898	.450	.896	.433	.500	1.00	.542	.625	.930	.697	.924	.711	.417	.778	.755	.870

Traffic Data Service

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File Name : 38AM FINAL
Site Code : 00000038
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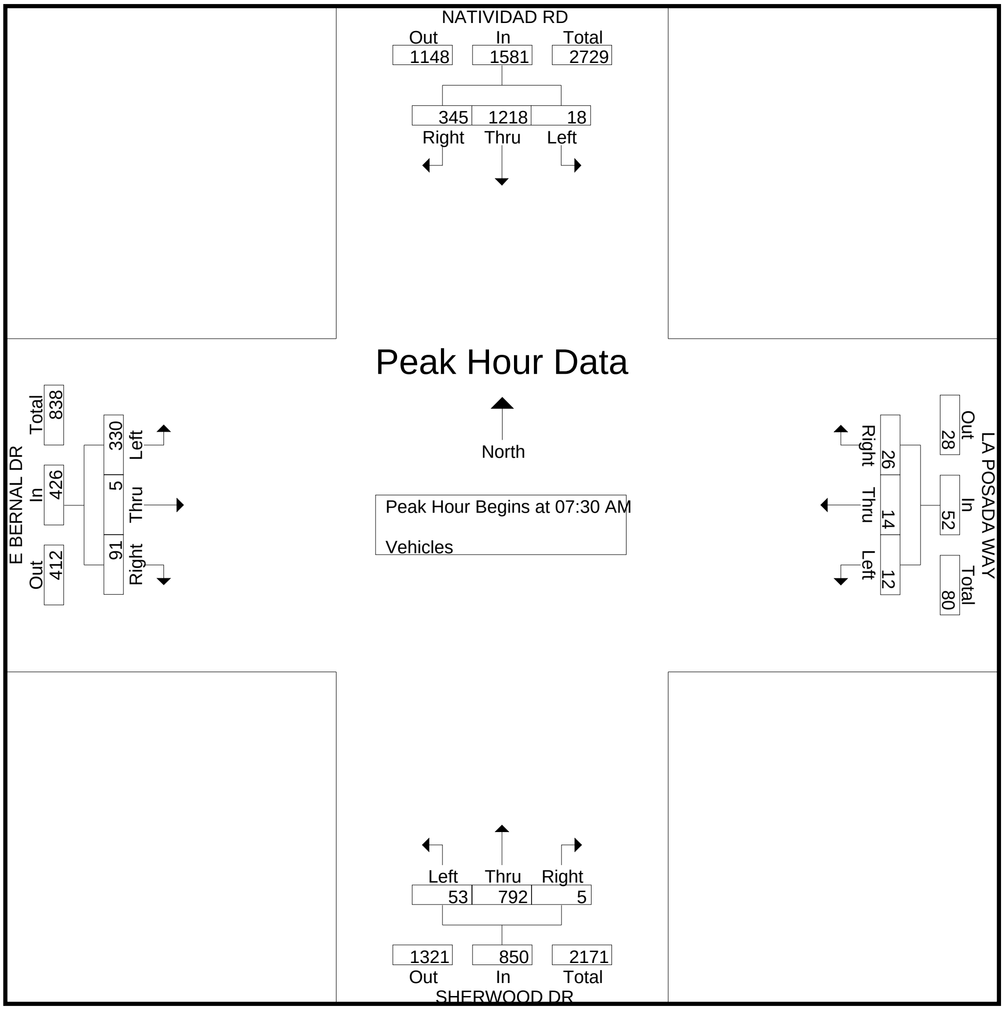

Traffic Data Service

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File Name : 39AM FINAL
Site Code : 00000039
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E LAUREL DR Southbound					N SANBORN RD Westbound					E LAUREL DR Northbound					N SANBORN RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	35	25	14	8	82	32	87	4	0	123	4	32	2	2	40	3	30	21	3	57	302
07:15 AM	49	20	25	3	97	31	99	3	0	133	3	45	5	1	54	7	45	48	0	100	384
07:30 AM	83	41	40	2	166	50	148	4	0	202	2	58	10	1	71	2	51	45	0	98	537
07:45 AM	83	82	31	14	210	56	163	1	0	220	8	67	3	2	80	4	86	51	0	141	651
Total	250	168	110	27	555	169	497	12	0	678	17	202	20	6	245	16	212	165	3	396	1874
08:00 AM	89	89	67	15	260	55	94	4	1	154	8	74	9	11	102	6	98	41	0	145	661
08:15 AM	62	49	39	12	162	62	155	7	0	224	12	47	11	7	77	13	72	33	2	120	583
08:30 AM	50	41	47	8	146	67	99	11	2	179	8	63	11	2	84	4	80	50	6	140	549
08:45 AM	61	51	49	5	166	56	110	3	1	170	4	75	12	2	93	9	60	55	3	127	556
Total	262	230	202	40	734	240	458	25	4	727	32	259	43	22	356	32	310	179	11	532	2349
Grand Total	512	398	312	67	1289	409	955	37	4	1405	49	461	63	28	601	48	522	344	14	928	4223
Apprch %	39.7	30.9	24.2	5.2		29.1	68	2.6	0.3		8.2	76.7	10.5	4.7		5.2	56.2	37.1	1.5		
Total %	12.1	9.4	7.4	1.6	30.5	9.7	22.6	0.9	0.1	33.3	1.2	10.9	1.5	0.7	14.2	1.1	12.4	8.1	0.3	22	

	E LAUREL DR Southbound				N SANBORN RD Westbound				E LAUREL DR Northbound				N SANBORN RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	83	41	40	164	50	148	4	202	2	58	10	70	2	51	45	98	534
07:45 AM	83	82	31	196	56	**163**	1	220	8	67	3	78	4	86	**51**	141	**635**
08:00 AM	**89**	**89**	**67**	**245**	55	94	4	153	8	**74**	9	**91**	6	**98**	41	**145**	634
08:15 AM	62	49	39	150	**62**	155	**7**	**224**	**12**	47	**11**	70	**13**	72	33	118	562
Total Volume	317	261	177	755	223	560	16	799	30	246	33	309	25	307	170	502	2365
% App. Total	42	34.6	23.4		27.9	70.1	2		9.7	79.6	10.7		5	61.2	33.9		
PHF	.890	.733	.660	.770	.899	.859	.571	.892	.625	.831	.750	.849	.481	.783	.833	.866	.931

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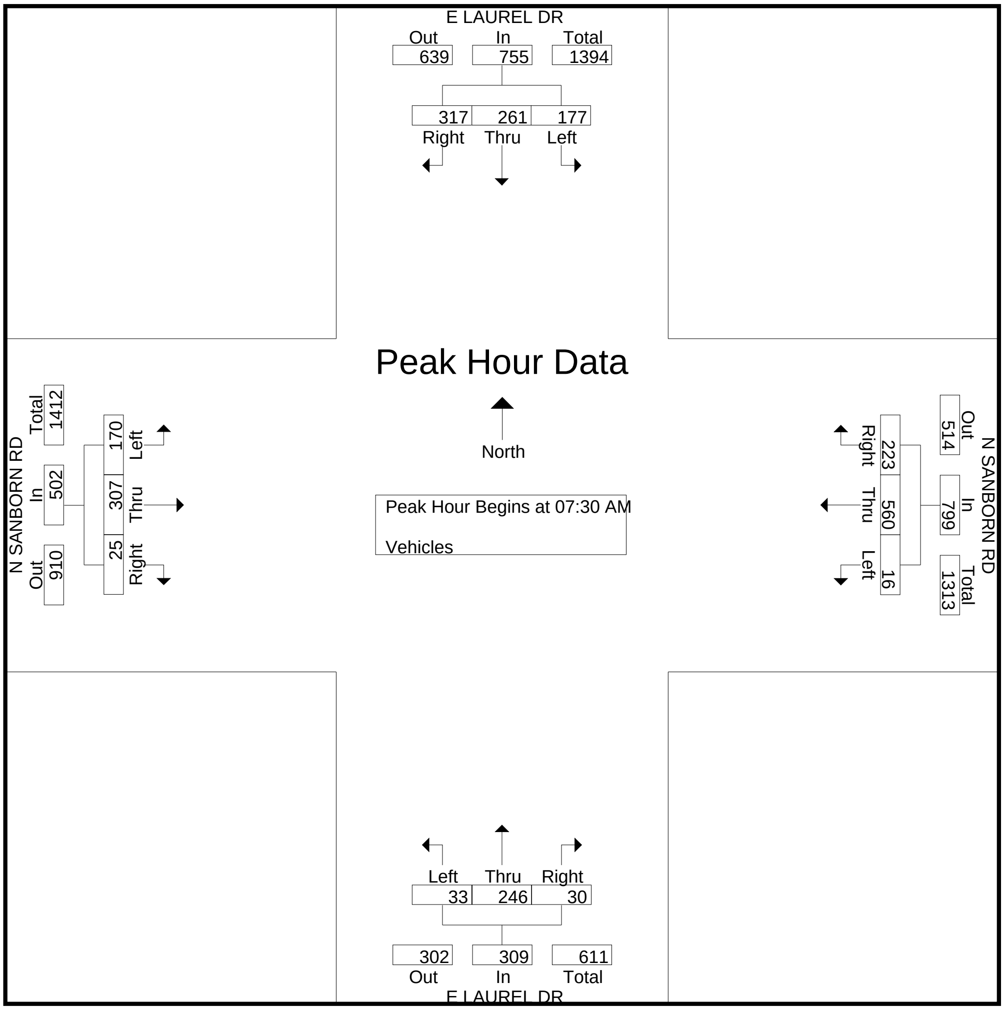
File Name : 39AM FINAL
Site Code : 00000039
Start Date : 11/17/2015
Page No : 2



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File Name : 40AM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E BORONDA RD Southbound					WILLIAMS RD Westbound					Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	34	0	11	0	45	4	7	0	0	11	0	0	0	0	0	0	36	18	0	54	110
07:15 AM	44	0	10	0	54	2	13	0	0	15	0	0	0	0	0	0	23	25	0	48	117
07:30 AM	52	0	10	0	62	12	15	0	0	27	0	0	0	0	0	0	19	37	0	56	145
07:45 AM	83	0	11	0	94	13	22	0	0	35	0	0	0	0	0	0	12	28	0	40	169
Total	213	0	42	0	255	31	57	0	0	88	0	0	0	0	0	0	90	108	0	198	541
08:00 AM	55	0	14	0	69	13	20	0	0	33	0	0	0	0	0	0	20	65	0	85	187
08:15 AM	43	0	11	0	54	6	9	0	0	15	0	0	0	0	0	0	17	36	0	53	122
08:30 AM	53	0	6	0	59	8	11	0	0	19	0	0	0	0	0	0	10	56	0	66	144
08:45 AM	79	0	7	0	86	3	7	0	0	10	0	0	0	0	0	0	23	73	0	96	192
Total	230	0	38	0	268	30	47	0	0	77	0	0	0	0	0	0	70	230	0	300	645
Grand Total	443	0	80	0	523	61	104	0	0	165	0	0	0	0	0	0	160	338	0	498	1186
Apprch %	84.7	0	15.3	0		37	63	0	0		0	0	0	0		0	32.1	67.9	0		
Total %	37.4	0	6.7	0	44.1	5.1	8.8	0	0	13.9	0	0	0	0	0	0	13.5	28.5	0	42	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

	E BORONDA RD Southbound				WILLIAMS RD Westbound				Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
08:00 AM	55	0	**14**	69	**13**	**20**	0	**33**	0	0	0	0	0	20	65	85	187
08:15 AM	43	0	11	54	6	9	0	15	0	0	0	0	0	17	36	53	122
08:30 AM	53	0	6	59	8	11	0	19	0	0	0	0	0	10	56	66	144
08:45 AM	**79**	0	7	**86**	3	7	0	10	0	0	0	0	0	**23**	**73**	**96**	**192**
Total Volume	230	0	38	268	30	47	0	77	0	0	0	0	0	70	230	300	645
% App. Total	85.8	0	14.2		39	61	0		0	0	0		0	23.3	76.7		
PHF	.728	.000	.679	.779	.577	.588	.000	.583	.000	.000	.000	.000	.000	.761	.788	.781	.840

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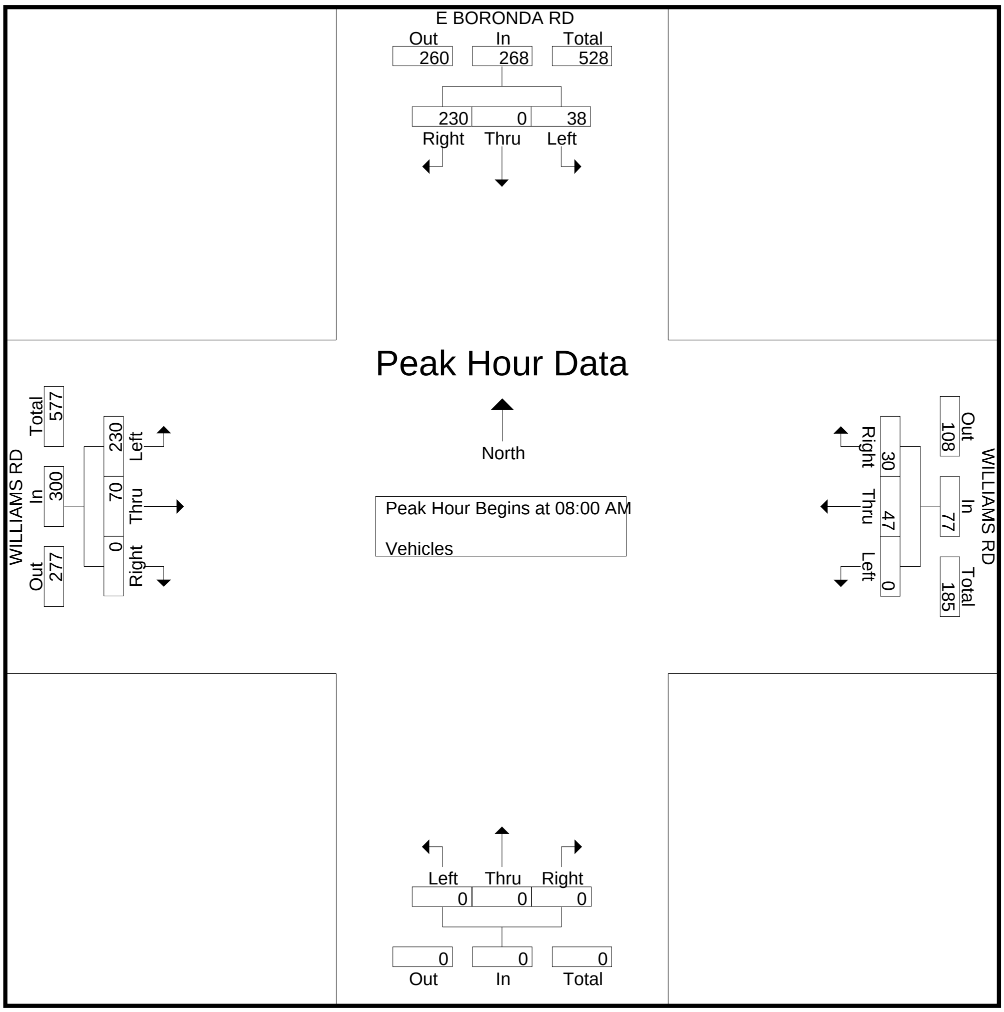
File Name : 40AM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 2



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File Name : 43AM FINAL
Site Code : 00000043
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	FREEDOM PKWY Southbound					WILLIAMS RD Westbound					FREEDOM PKWY Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	42	10	6	1	59	2	34	12	0	48	13	8	1	0	22	1	43	6	0	50	179
07:15 AM	51	10	1	0	62	0	56	16	0	72	17	15	2	0	34	1	34	22	0	57	225
07:30 AM	72	23	2	1	98	2	74	18	0	94	18	22	5	0	45	2	46	20	6	74	311
07:45 AM	51	43	1	6	101	4	88	43	0	135	20	40	5	0	65	11	35	31	3	80	381
Total	216	86	10	8	320	8	252	89	0	349	68	85	13	0	166	15	158	79	9	261	1096
08:00 AM	39	40	4	3	86	3	63	22	0	88	41	42	16	0	99	4	69	28	4	105	378
08:15 AM	52	19	1	8	80	2	67	15	0	84	27	33	11	0	71	1	26	37	3	67	302
08:30 AM	100	16	2	12	130	4	56	15	0	75	16	16	6	0	38	0	49	44	1	94	337
08:45 AM	135	23	2	11	171	3	97	13	0	113	19	22	10	0	51	4	79	74	10	167	502
Total	326	98	9	34	467	12	283	65	0	360	103	113	43	0	259	9	223	183	18	433	1519
Grand Total	542	184	19	42	787	20	535	154	0	709	171	198	56	0	425	24	381	262	27	694	2615
Apprch %	68.9	23.4	2.4	5.3		2.8	75.5	21.7	0		40.2	46.6	13.2	0		3.5	54.9	37.8	3.9		
Total %	20.7	7	0.7	1.6	30.1	0.8	20.5	5.9	0	27.1	6.5	7.6	2.1	0	16.3	0.9	14.6	10	1	26.5	

	FREEDOM PKWY Southbound				WILLIAMS RD Westbound				FREEDOM PKWY Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	39	**40**	**4**	83	3	63	**22**	88	**41**	**42**	**16**	**99**	**4**	69	28	101	371
08:15 AM	52	19	1	72	2	67	15	84	27	33	11	71	1	26	37	64	291
08:30 AM	100	16	2	118	**4**	56	15	75	16	16	6	38	0	49	44	93	324
08:45 AM	**135**	23	2	**160**	3	**97**	13	**113**	19	22	10	51	4	**79**	**74**	**157**	**481**
Total Volume	326	98	9	433	12	283	65	360	103	113	43	259	9	223	183	415	1467
% App. Total	75.3	22.6	2.1		3.3	78.6	18.1		39.8	43.6	16.6		2.2	53.7	44.1		
PHF	.604	.613	.563	.677	.750	.729	.739	.796	.628	.673	.672	.654	.563	.706	.618	.661	.762

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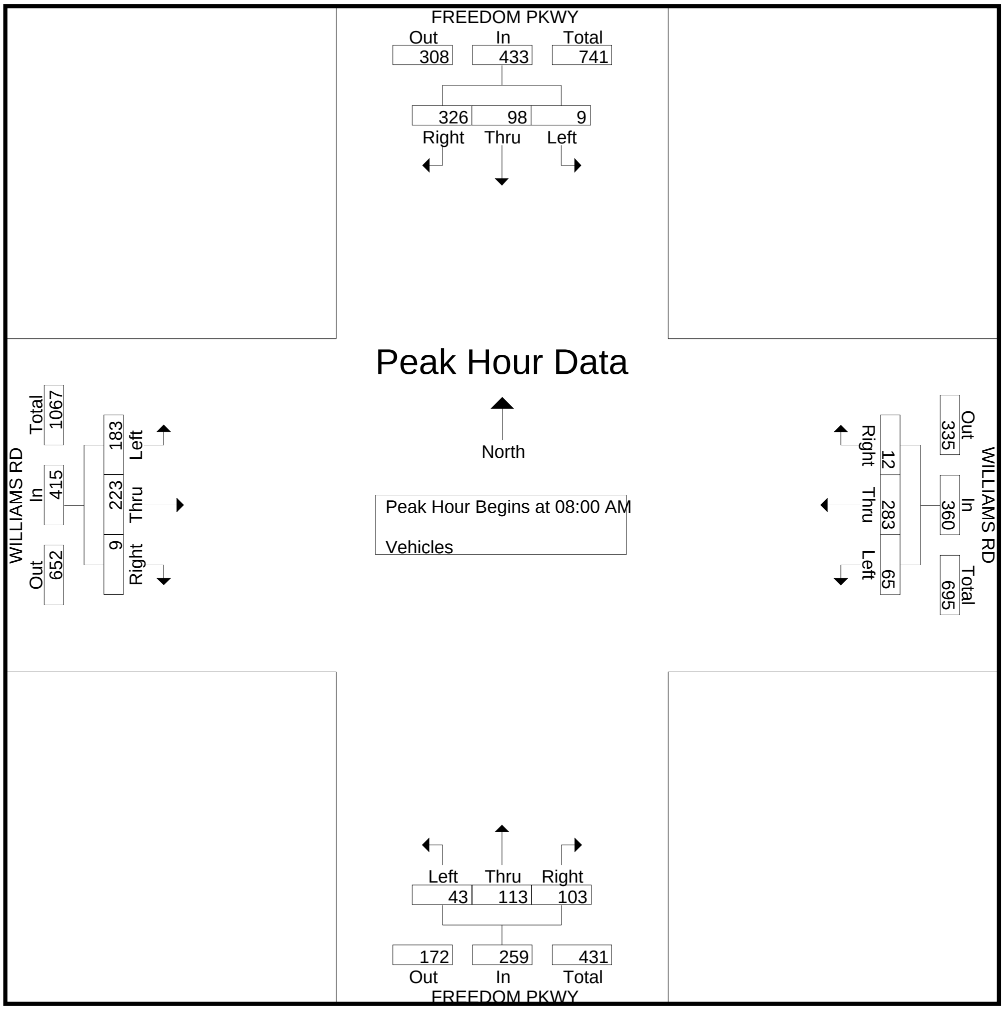

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File Name : 44AM FINAL
Site Code : 00000044
Start Date : 11/17/2015

Groups Printed- Vehicles

	BARDIN WAY Southbound					WILLIAMS RD Westbound					BARDIN RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	1	4	7	19	2	77	34	5	118	26	1	14	3	44	16	50	5	0	71	252
07:15 AM	5	1	2	7	15	2	106	24	5	137	24	1	29	4	58	29	69	2	0	100	310
07:30 AM	2	1	8	2	13	1	134	44	4	183	43	1	26	1	71	20	90	1	5	116	383
07:45 AM	4	1	5	24	34	3	149	47	18	217	43	0	51	1	95	37	126	2	2	167	513
Total	18	4	19	40	81	8	466	149	32	655	136	3	120	9	268	102	335	10	7	454	1458
08:00 AM	5	1	2	13	21	2	146	39	6	193	43	1	65	7	116	65	101	3	1	170	500
08:15 AM	7	0	1	22	30	1	153	38	16	208	37	0	56	10	103	16	80	0	4	100	441
08:30 AM	1	1	5	40	47	1	154	32	7	194	53	0	30	20	103	16	120	0	2	138	482
08:45 AM	3	2	0	13	18	4	205	31	5	245	53	1	40	10	104	21	134	0	1	156	523
Total	16	4	8	88	116	8	658	140	34	840	186	2	191	47	426	118	435	3	8	564	1946
Grand Total	34	8	27	128	197	16	1124	289	66	1495	322	5	311	56	694	220	770	13	15	1018	3404
Apprch %	17.3	4.1	13.7	65		1.1	75.2	19.3	4.4		46.4	0.7	44.8	8.1		21.6	75.6	1.3	1.5		
Total %	1	0.2	0.8	3.8	5.8	0.5	33	8.5	1.9	43.9	9.5	0.1	9.1	1.6	20.4	6.5	22.6	0.4	0.4	29.9	

	BARDIN WAY Southbound				WILLIAMS RD Westbound				BARDIN RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	5	1	2	**8**	2	146	**39**	187	43	**1**	**65**	**109**	**65**	101	**3**	**169**	473
08:15 AM	**7**	0	1	8	1	153	38	192	37	0	56	93	16	80	0	96	389
08:30 AM	1	1	**5**	7	1	154	32	187	**53**	0	30	83	16	120	0	136	413
08:45 AM	3	**2**	0	5	**4**	**205**	31	**240**	53	1	40	94	21	**134**	0	155	**494**
Total Volume	16	4	8	28	8	658	140	806	186	2	191	379	118	435	3	556	1769
% App. Total	57.1	14.3	28.6		1	81.6	17.4		49.1	0.5	50.4		21.2	78.2	0.5		
PHF	.571	.500	.400	.875	.500	.802	.897	.840	.877	.500	.735	.869	.454	.812	.250	.822	.895

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File Name : 44AM FINAL
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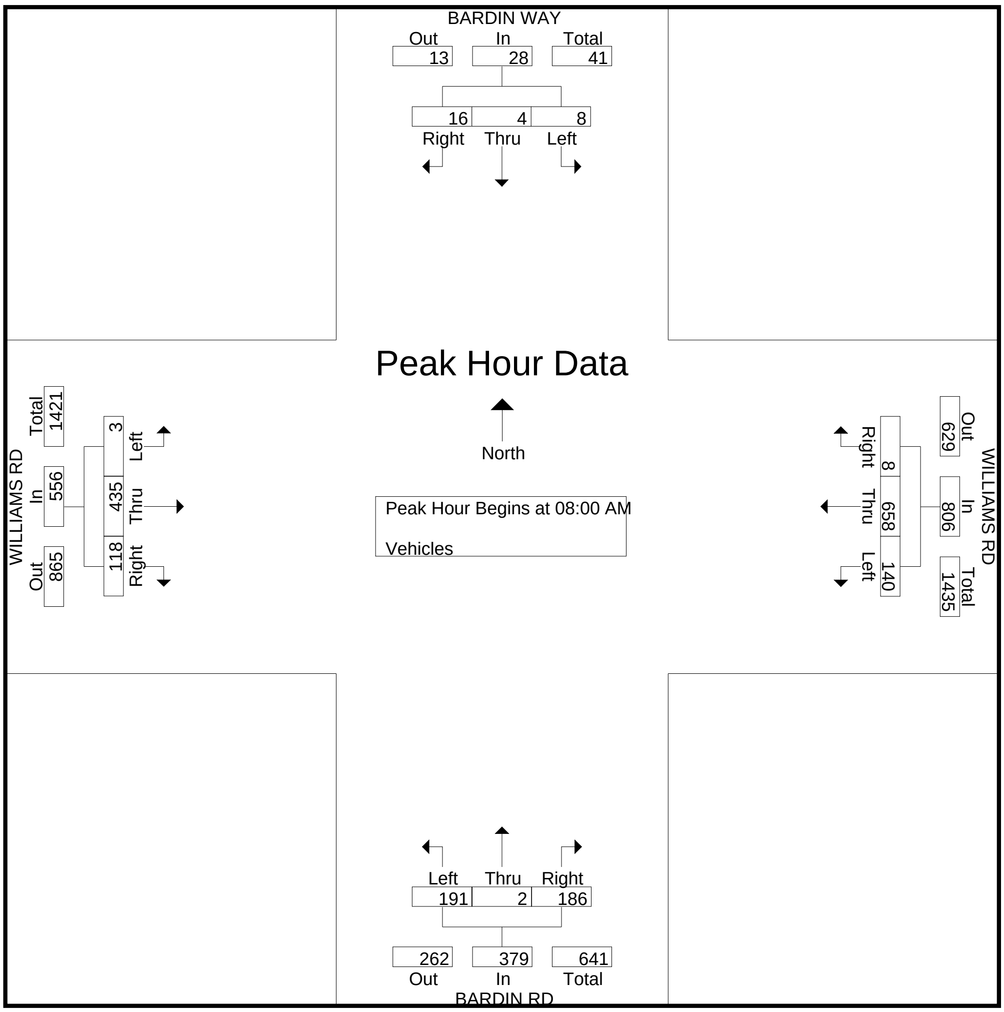

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File Name : 41AM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E MARKET ST Southbound					WILLIAMS RD Westbound					E MARKET ST Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	4	9	9	0	22	10	97	21	5	133	10	17	5	0	32	6	41	0	1	48	235
07:15 AM	3	11	13	0	27	17	117	10	3	147	19	6	4	3	32	2	65	3	1	71	277
07:30 AM	16	15	20	3	54	20	146	12	3	181	17	26	14	1	58	2	62	1	1	66	359
07:45 AM	23	32	34	2	91	37	154	24	4	219	22	23	7	1	53	4	89	3	3	99	462
Total	46	67	76	5	194	84	514	67	15	680	68	72	30	5	175	14	257	7	6	284	1333
08:00 AM	16	27	27	2	72	34	121	22	21	198	22	24	5	6	57	8	98	7	1	114	441
08:15 AM	10	14	22	4	50	34	139	14	13	200	30	18	6	2	56	2	81	0	0	83	389
08:30 AM	4	7	35	1	47	27	149	15	2	193	20	9	10	2	41	4	80	3	1	88	369
08:45 AM	4	16	44	0	64	41	128	19	2	190	18	14	9	5	46	4	78	1	0	83	383
Total	34	64	128	7	233	136	537	70	38	781	90	65	30	15	200	18	337	11	2	368	1582
Grand Total	80	131	204	12	427	220	1051	137	53	1461	158	137	60	20	375	32	594	18	8	652	2915
Apprch %	18.7	30.7	47.8	2.8		15.1	71.9	9.4	3.6		42.1	36.5	16	5.3		4.9	91.1	2.8	1.2		
Total %	2.7	4.5	7	0.4	14.6	7.5	36.1	4.7	1.8	50.1	5.4	4.7	2.1	0.7	12.9	1.1	20.4	0.6	0.3	22.4	

	E MARKET ST Southbound				WILLIAMS RD Westbound				E MARKET ST Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**23**	**32**	34	**89**	**37**	**154**	**24**	**215**	22	23	7	52	4	89	3	96	**452**
08:00 AM	16	27	27	70	34	121	22	177	22	**24**	5	51	**8**	**98**	**7**	**113**	411
08:15 AM	10	14	22	46	34	139	14	187	**30**	18	6	**54**	2	81	0	83	370
08:30 AM	4	7	**35**	46	27	149	15	191	20	9	**10**	39	4	80	3	87	363
Total Volume	53	80	118	251	132	563	75	770	94	74	28	196	18	348	13	379	1596
% App. Total	21.1	31.9	47		17.1	73.1	9.7		48	37.8	14.3		4.7	91.8	3.4		
PHF	.576	.625	.843	.705	.892	.914	.781	.895	.783	.771	.700	.907	.563	.888	.464	.838	.883

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File Name : 41AM FINAL
Site Code : 00000041
Start Date : 11/17/2015
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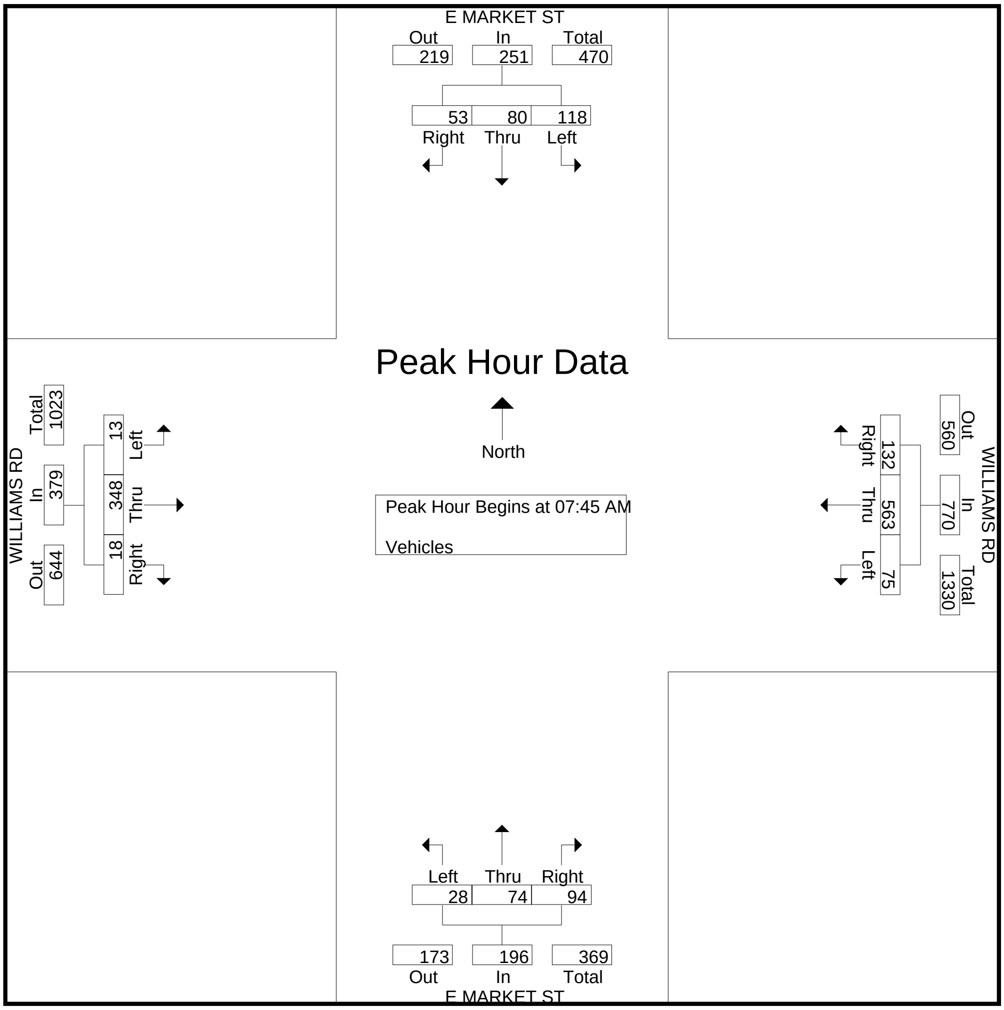

Traffic Data Service

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File Name : 45AM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	WILLIAMS RD Southbound					E ALISAL ST Westbound					JOHN ST Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	85	0	0	96	0	10	45	3	58	13	32	3	1	49	6	17	5	0	28	231
07:15 AM	31	84	1	2	118	1	17	51	3	72	25	41	2	1	69	4	12	17	2	35	294
07:30 AM	35	134	0	3	172	2	22	74	3	101	42	57	11	5	115	8	15	27	3	53	441
07:45 AM	55	128	1	0	184	1	32	72	0	105	50	66	33	1	150	12	24	21	1	58	497
Total	132	431	2	5	570	4	81	242	9	336	130	196	49	8	383	30	68	70	6	174	1463
08:00 AM	44	92	1	2	139	3	36	35	3	77	46	61	10	2	119	7	30	23	2	62	397
08:15 AM	71	87	4	1	163	3	46	27	0	76	33	38	3	6	80	6	29	20	0	55	374
08:30 AM	76	74	1	10	161	0	54	25	1	80	27	48	4	4	83	6	32	46	0	84	408
08:45 AM	27	62	0	0	89	2	21	24	1	48	20	39	2	2	63	5	22	36	0	63	263
Total	218	315	6	13	552	8	157	111	5	281	126	186	19	14	345	24	113	125	2	264	1442
Grand Total	350	746	8	18	1122	12	238	353	14	617	256	382	68	22	728	54	181	195	8	438	2905
Apprch %	31.2	66.5	0.7	1.6		1.9	38.6	57.2	2.3		35.2	52.5	9.3	3		12.3	41.3	44.5	1.8		
Total %	12	25.7	0.3	0.6	38.6	0.4	8.2	12.2	0.5	21.2	8.8	13.1	2.3	0.8	25.1	1.9	6.2	6.7	0.3	15.1	

	WILLIAMS RD Southbound				E ALISAL ST Westbound				JOHN ST Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	35	**134**	0	169	2	22	**74**	98	42	57	11	110	8	15	**27**	50	427
07:45 AM	55	128	1	**184**	1	32	72	**105**	**50**	**66**	**33**	**149**	**12**	24	21	57	**495**
08:00 AM	44	92	1	137	**3**	36	35	74	46	61	10	117	7	**30**	23	**60**	388
08:15 AM	**71**	87	**4**	162	3	**46**	27	76	33	38	3	74	6	29	20	55	367
Total Volume	205	441	6	652	9	136	208	353	171	222	57	450	33	98	91	222	1677
% App. Total	31.4	67.6	0.9		2.5	38.5	58.9		38	49.3	12.7		14.9	44.1	41		
PHF	.722	.823	.375	.886	.750	.739	.703	.840	.855	.841	.432	.755	.688	.817	.843	.925	.847

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File Name : 45AM FINAL
Site Code : 00000045
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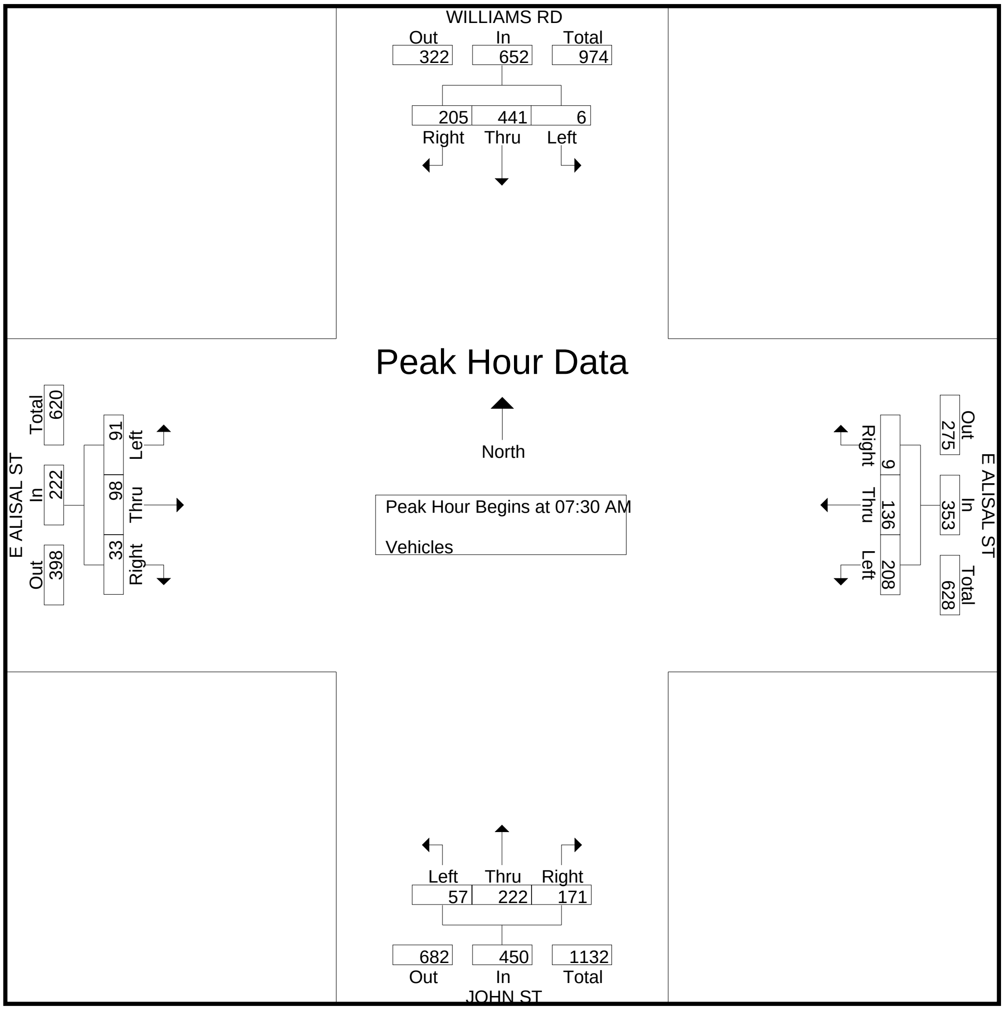

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File Name : 46AM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	S SANBORN RD Southbound					JOHN ST Westbound					S SANBORN RD Northbound					JOHN ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	12	112	1	0	125	2	38	77	3	120	48	46	3	0	97	17	21	10	0	48	390
07:15 AM	23	122	11	0	156	4	39	71	4	118	76	58	16	6	156	17	33	15	1	66	496
07:30 AM	43	162	21	0	226	3	91	75	1	170	111	82	14	3	210	29	31	13	0	73	679
07:45 AM	41	168	31	2	242	8	107	82	5	202	82	86	21	0	189	24	35	18	0	77	710
Total	119	564	64	2	749	17	275	305	13	610	317	272	54	9	652	87	120	56	1	264	2275
08:00 AM	38	101	1	0	140	3	67	70	8	148	59	72	18	6	155	16	43	13	2	74	517
08:15 AM	39	84	5	2	130	4	58	75	4	141	52	93	14	0	159	16	26	14	3	59	489
08:30 AM	42	94	5	3	144	1	52	45	2	100	38	70	14	1	123	10	23	14	2	49	416
08:45 AM	31	102	7	0	140	0	66	50	3	119	51	62	12	0	125	10	27	18	0	55	439
Total	150	381	18	5	554	8	243	240	17	508	200	297	58	7	562	52	119	59	7	237	1861
Grand Total	269	945	82	7	1303	25	518	545	30	1118	517	569	112	16	1214	139	239	115	8	501	4136
Apprch %	20.6	72.5	6.3	0.5		2.2	46.3	48.7	2.7		42.6	46.9	9.2	1.3		27.7	47.7	23	1.6		
Total %	6.5	22.8	2	0.2	31.5	0.6	12.5	13.2	0.7	27	12.5	13.8	2.7	0.4	29.4	3.4	5.8	2.8	0.2	12.1	

	S SANBORN RD Southbound				JOHN ST Westbound				S SANBORN RD Northbound				JOHN ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	23	122	11	156	4	39	71	114	76	58	16	150	17	33	15	65	485
07:30 AM	**43**	162	21	226	3	91	75	169	**111**	82	14	**207**	**29**	31	13	73	675
07:45 AM	41	**168**	**31**	**240**	**8**	**107**	**82**	**197**	82	**86**	**21**	189	24	35	**18**	**77**	**703**
08:00 AM	38	101	1	140	3	67	70	140	59	72	18	149	16	**43**	13	72	501
Total Volume	145	553	64	762	18	304	298	620	328	298	69	695	86	142	59	287	2364
% App. Total	19	72.6	8.4		2.9	49	48.1		47.2	42.9	9.9		30	49.5	20.6		
PHF	.843	.823	.516	.794	.563	.710	.909	.787	.739	.866	.821	.839	.741	.826	.819	.932	.841

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File Name : 46AM FINAL
Site Code : 00000046
Start Date : 11/18/2015
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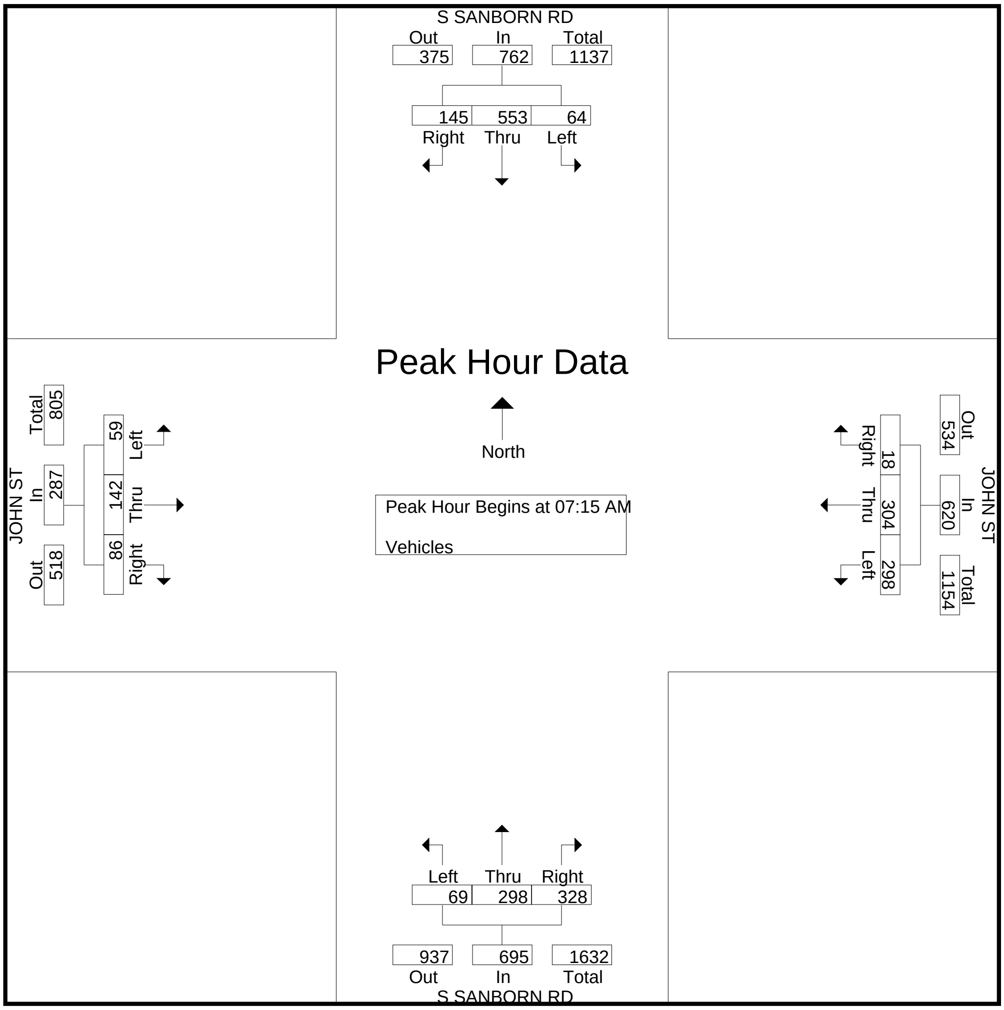

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File Name : 47AM FINAL
Site Code : 00000047
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	BARDIN RD Southbound					DRIVEWAY Westbound					ALISAL RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	14	35	0	0	49	0	1	0	0	1	0	7	35	0	42	26	0	7	0	33	125
07:15 AM	14	22	0	1	37	0	2	0	0	2	0	10	44	0	54	22	0	8	0	30	123
07:30 AM	32	28	0	25	85	2	3	0	0	5	0	11	68	0	79	44	0	19	0	63	232
07:45 AM	31	52	0	89	172	11	9	1	0	21	0	39	122	0	161	93	0	17	0	110	464
Total	91	137	0	115	343	13	15	1	0	29	0	67	269	0	336	185	0	51	0	236	944
08:00 AM	39	40	0	266	345	9	1	1	1	12	0	61	93	0	154	97	0	12	0	109	620
08:15 AM	13	32	0	41	86	3	2	0	0	5	0	40	61	0	101	35	0	14	0	49	241
08:30 AM	22	9	0	2	33	2	0	0	0	2	0	12	41	0	53	33	0	9	0	42	130
08:45 AM	13	14	0	3	30	0	0	0	0	0	0	12	27	0	39	28	0	7	0	35	104
Total	87	95	0	312	494	14	3	1	1	19	0	125	222	0	347	193	0	42	0	235	1095
Grand Total	178	232	0	427	837	27	18	2	1	48	0	192	491	0	683	378	0	93	0	471	2039
Apprch %	21.3	27.7	0	51		56.2	37.5	4.2	2.1		0	28.1	71.9	0		80.3	0	19.7	0		
Total %	8.7	11.4	0	20.9	41	1.3	0.9	0.1	0	2.4	0	9.4	24.1	0	33.5	18.5	0	4.6	0	23.1	

	BARDIN RD Southbound				DRIVEWAY Westbound				ALISAL RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	32	28	0	60	2	3	0	5	0	11	68	79	44	0	**19**	63	207
07:45 AM	31	**52**	0	**83**	**11**	**9**	**1**	**21**	0	39	**122**	**161**	93	0	17	**110**	**375**
08:00 AM	**39**	40	0	79	9	1	1	11	0	**61**	93	154	**97**	0	12	109	353
08:15 AM	13	32	0	45	3	2	0	5	0	40	61	101	35	0	14	49	200
Total Volume	115	152	0	267	25	15	2	42	0	151	344	495	269	0	62	331	1135
% App. Total	43.1	56.9	0		59.5	35.7	4.8		0	30.5	69.5		81.3	0	18.7		
PHF	.737	.731	.000	.804	.568	.417	.500	.500	.000	.619	.705	.769	.693	.000	.816	.752	.757

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File Name : 47AM FINAL
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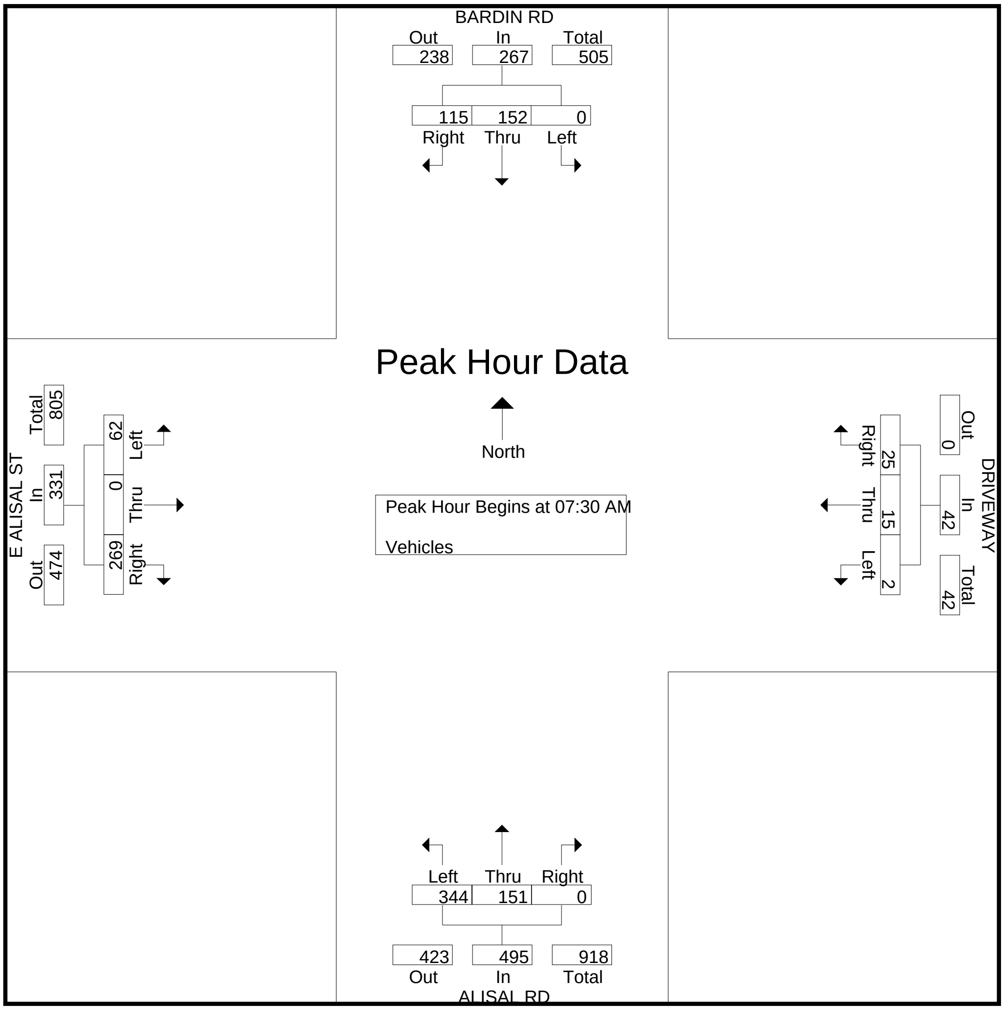

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File Name : 48AM FINAL
Site Code : 00000048
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	SKYWAY BLVD Southbound					Westbound					SKYWAY BLVD Northbound					AIRPORT BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	58	1	0	0	59	0	0	0	0	0	0	0	0	0	0	2	0	19	0	21	80
07:15 AM	58	2	0	0	60	0	0	0	0	0	0	0	0	0	0	1	0	21	0	22	82
07:30 AM	100	0	0	0	100	0	0	0	0	0	0	0	1	0	1	0	0	40	0	40	141
07:45 AM	128	8	0	0	136	0	0	0	0	0	0	1	0	0	1	4	0	42	0	46	183
Total	344	11	0	0	355	0	0	0	0	0	0	1	1	0	2	7	0	122	0	129	486
08:00 AM	93	1	0	0	94	0	0	0	0	0	0	1	1	0	2	3	0	28	0	31	127
08:15 AM	62	3	0	0	65	0	0	0	0	0	0	1	0	0	1	6	0	28	0	34	100
08:30 AM	39	5	0	0	44	0	0	0	0	0	0	0	0	0	0	3	0	23	1	27	71
08:45 AM	31	4	0	0	35	0	0	0	0	0	0	4	0	0	4	6	0	21	1	28	67
Total	225	13	0	0	238	0	0	0	0	0	0	6	1	0	7	18	0	100	2	120	365
Grand Total	569	24	0	0	593	0	0	0	0	0	0	7	2	0	9	25	0	222	2	249	851
Apprch %	96	4	0	0		0	0	0	0		0	77.8	22.2	0		10	0	89.2	0.8		
Total %	66.9	2.8	0	0	69.7	0	0	0	0	0	0	0.8	0.2	0	1.1	2.9	0	26.1	0.2	29.3	

	SKYWAY BLVD Southbound				Westbound				SKYWAY BLVD Northbound				AIRPORT BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	100	0	0	100	0	0	0	0	0	0	**1**	1	0	0	40	40	141
07:45 AM	**128**	**8**	0	**136**	0	0	0	0	0	**1**	0	1	4	0	**42**	**46**	**183**
08:00 AM	93	1	0	94	0	0	0	0	0	1	1	**2**	3	0	28	31	127
08:15 AM	62	3	0	65	0	0	0	0	0	1	0	1	**6**	0	28	34	100
Total Volume	383	12	0	395	0	0	0	0	0	3	2	5	13	0	138	151	551
% App. Total	97	3	0		0	0	0		0	60	40		8.6	0	91.4		
PHF	.748	.375	.000	.726	.000	.000	.000	.000	.000	.750	.500	.625	.542	.000	.821	.821	.753

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File Name : 48AM FINAL
Site Code : 00000048
Start Date : 1/14/2016
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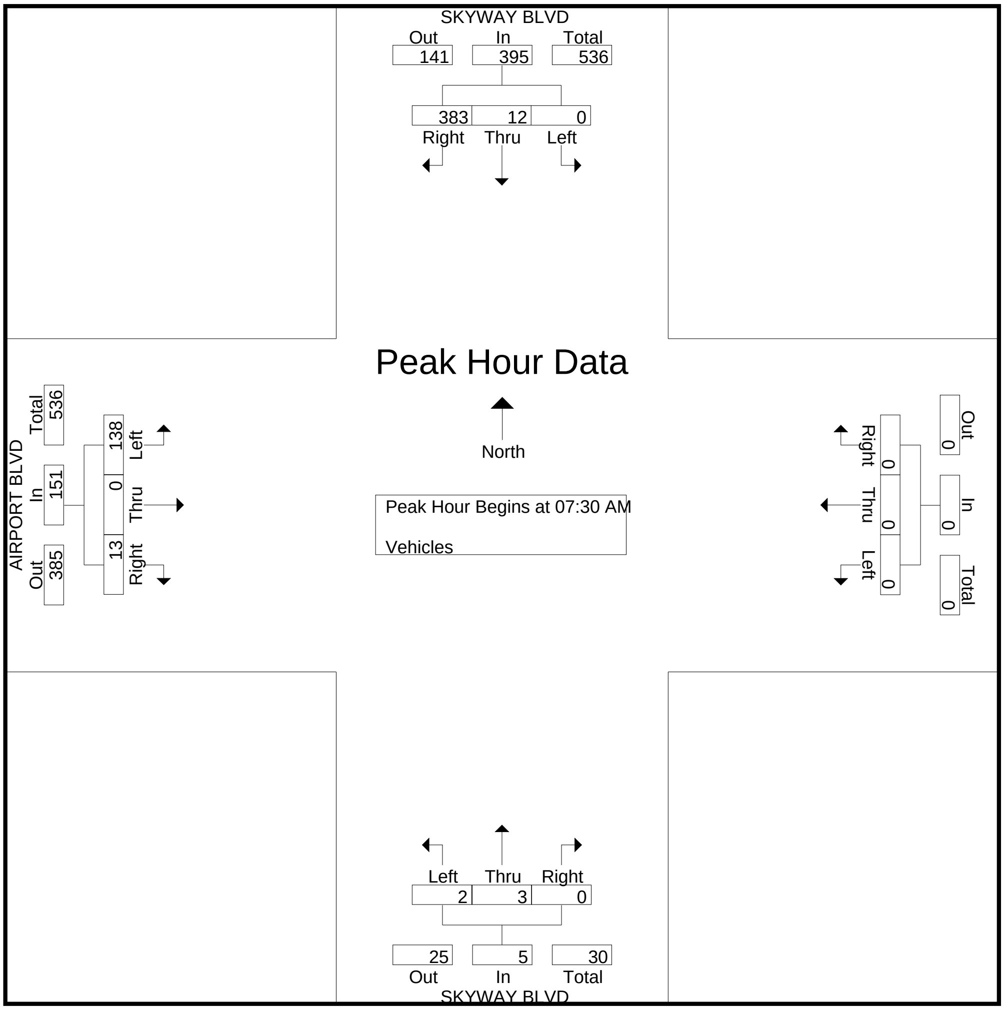

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File Name : 49AM FINAL
Site Code : 00000049
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N SANBORN RD Southbound					E ALISAL ST Westbound					S SANBORN RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	17	87	3	0	107	1	45	22	0	68	4	32	9	1	46	7	24	12	3	46	267
07:15 AM	17	132	9	7	165	3	39	33	2	77	20	41	10	2	73	8	33	12	2	55	370
07:30 AM	30	165	8	8	211	9	82	58	4	153	22	57	15	1	95	11	29	16	0	56	515
07:45 AM	22	162	10	12	206	13	123	59	0	195	27	88	19	1	135	16	58	16	0	90	626
Total	86	546	30	27	689	26	289	172	6	493	73	218	53	5	349	42	144	56	5	247	1778
08:00 AM	16	94	10	2	122	12	74	54	4	144	35	65	18	10	128	15	60	31	3	109	503
08:15 AM	31	111	9	9	160	15	71	43	4	133	33	73	20	2	128	12	43	24	2	81	502
08:30 AM	27	84	15	11	137	27	113	45	1	186	19	57	18	16	110	18	74	22	5	119	552
08:45 AM	22	114	15	8	159	19	85	38	4	146	11	43	26	6	86	12	57	24	1	94	485
Total	96	403	49	30	578	73	343	180	13	609	98	238	82	34	452	57	234	101	11	403	2042
Grand Total	182	949	79	57	1267	99	632	352	19	1102	171	456	135	39	801	99	378	157	16	650	3820
Apprch %	14.4	74.9	6.2	4.5		9	57.4	31.9	1.7		21.3	56.9	16.9	4.9		15.2	58.2	24.2	2.5		
Total %	4.8	24.8	2.1	1.5	33.2	2.6	16.5	9.2	0.5	28.8	4.5	11.9	3.5	1	21	2.6	9.9	4.1	0.4	17	

	N SANBORN RD Southbound				E ALISAL ST Westbound				S SANBORN RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	22	**162**	10	**194**	13	**123**	**59**	**195**	27	**88**	19	**134**	16	58	16	90	**613**
08:00 AM	16	94	10	120	12	74	54	140	**35**	65	18	118	15	60	**31**	106	484
08:15 AM	**31**	111	9	151	15	71	43	129	33	73	**20**	126	12	43	24	79	485
08:30 AM	27	84	**15**	126	**27**	113	45	185	19	57	18	94	**18**	**74**	22	**114**	519
Total Volume	96	451	44	591	67	381	201	649	114	283	75	472	61	235	93	389	2101
% App. Total	16.2	76.3	7.4		10.3	58.7	31		24.2	60	15.9		15.7	60.4	23.9		
PHF	.774	.696	.733	.762	.620	.774	.852	.832	.814	.804	.938	.881	.847	.794	.750	.853	.857

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File Name : 49AM FINAL
Site Code : 00000049
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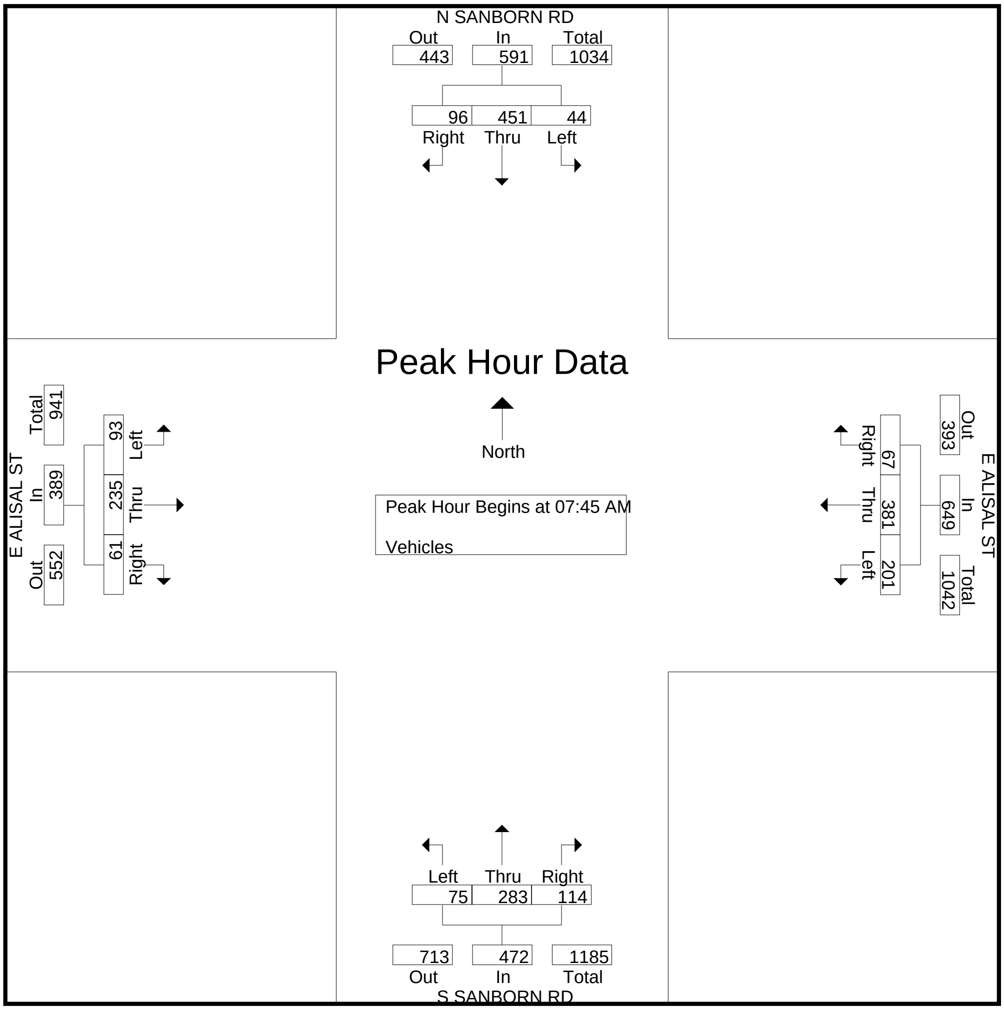

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File Name : 50AM FINAL
Site Code : 00000050
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	ADAMS ST Southbound					W LAUREL DR Westbound					Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	83	0	2	0	85	2	161	0	0	163	0	0	0	0	0	0	86	14	0	100	348
07:15 AM	82	0	6	0	88	3	154	0	0	157	0	0	0	0	0	0	108	23	0	131	376
07:30 AM	129	0	5	0	134	3	193	0	0	196	0	0	0	0	0	0	164	27	0	191	521
07:45 AM	134	0	9	0	143	4	251	0	0	255	0	0	0	0	0	0	206	57	0	263	661
Total	428	0	22	0	450	12	759	0	0	771	0	0	0	0	0	0	564	121	0	685	1906
08:00 AM	135	0	6	0	141	5	233	0	0	238	0	0	0	0	0	0	156	41	0	197	576
08:15 AM	97	0	5	0	102	4	210	0	0	214	0	0	0	0	0	0	196	49	0	245	561
08:30 AM	74	0	9	0	83	1	147	0	1	149	0	0	0	0	0	0	181	43	0	224	456
08:45 AM	72	0	7	0	79	3	152	0	0	155	0	0	0	0	0	0	168	30	0	198	432
Total	378	0	27	0	405	13	742	0	1	756	0	0	0	0	0	0	701	163	0	864	2025
Grand Total	806	0	49	0	855	25	1501	0	1	1527	0	0	0	0	0	0	1265	284	0	1549	3931
Apprch %	94.3	0	5.7	0		1.6	98.3	0	0.1		0	0	0	0		0	81.7	18.3	0		
Total %	20.5	0	1.2	0	21.8	0.6	38.2	0	0	38.8	0	0	0	0	0	0	32.2	7.2	0	39.4	

	ADAMS ST Southbound				W LAUREL DR Westbound				Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	129	0	5	134	3	193	0	196	0	0	0	0	0	164	27	191	521
07:45 AM	134	0	**9**	**143**	4	**251**	0	**255**	0	0	0	0	0	**206**	**57**	**263**	**661**
08:00 AM	**135**	0	6	141	**5**	233	0	238	0	0	0	0	0	156	41	197	576
08:15 AM	97	0	5	102	4	210	0	214	0	0	0	0	0	196	49	245	561
Total Volume	495	0	25	520	16	887	0	903	0	0	0	0	0	722	174	896	2319
% App. Total	95.2	0	4.8		1.8	98.2	0		0	0	0		0	80.6	19.4		
PHF	.917	.000	.694	.909	.800	.883	.000	.885	.000	.000	.000	.000	.000	.876	.763	.852	.877

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File Name : 50AM FINAL
Site Code : 00000050
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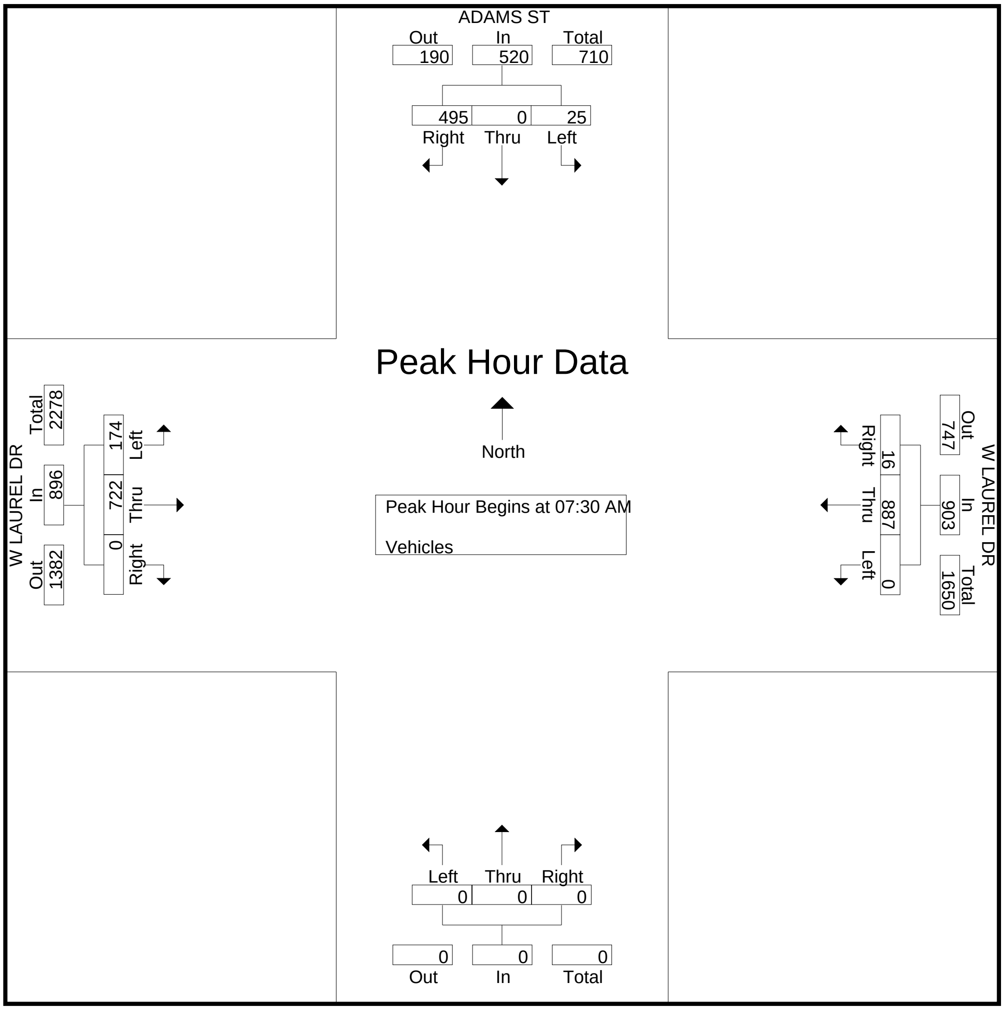

Traffic Data Service

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File Name : 51AM FINAL
Site Code : 00000051
Start Date : 1/14/2016
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Groups Printed- Vehicles

	N DAVIS RD Southbound					W LAUREL DR Westbound					N DAVIS RD Northbound					CALLE DEL ADOBE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	22	19	0	43	25	32	142	0	199	88	36	4	1	129	2	28	4	0	34	405
07:15 AM	2	29	18	0	49	28	44	148	0	220	132	50	4	0	186	1	46	5	0	52	507
07:30 AM	1	58	28	0	87	40	72	209	0	321	198	51	2	0	251	4	52	4	0	60	719
07:45 AM	3	60	29	0	92	59	110	210	0	379	189	56	2	0	247	3	70	2	0	75	793
Total	8	169	94	0	271	152	258	709	0	1119	607	193	12	1	813	10	196	15	0	221	2424
08:00 AM	8	51	41	2	102	68	101	207	0	376	182	73	5	0	260	4	44	5	0	53	791
08:15 AM	4	58	40	0	102	95	115	195	0	405	215	85	4	0	304	5	48	9	0	62	873
08:30 AM	5	68	61	0	134	62	58	174	1	295	162	71	1	0	234	3	60	8	0	71	734
08:45 AM	3	50	55	0	108	70	57	178	0	305	156	73	3	0	232	3	39	7	0	49	694
Total	20	227	197	2	446	295	331	754	1	1381	715	302	13	0	1030	15	191	29	0	235	3092
Grand Total	28	396	291	2	717	447	589	1463	1	2500	1322	495	25	1	1843	25	387	44	0	456	5516
Apprch %	3.9	55.2	40.6	0.3		17.9	23.6	58.5	0		71.7	26.9	1.4	0.1		5.5	84.9	9.6	0		
Total %	0.5	7.2	5.3	0	13	8.1	10.7	26.5	0	45.3	24	9	0.5	0	33.4	0.5	7	0.8	0	8.3	

	N DAVIS RD Southbound				W LAUREL DR Westbound				N DAVIS RD Northbound				CALLE DEL ADOBE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	60	29	92	59	110	**210**	379	189	56	2	247	3	**70**	2	**75**	793
08:00 AM	**8**	51	41	100	68	101	207	376	182	73	**5**	260	4	44	5	53	789
08:15 AM	4	58	40	102	**95**	**115**	195	**405**	**215**	**85**	4	**304**	**5**	48	**9**	62	**873**
08:30 AM	5	**68**	**61**	**134**	62	58	174	294	162	71	1	234	3	60	8	71	733
Total Volume	20	237	171	428	284	384	786	1454	748	285	12	1045	15	222	24	261	3188
% App. Total	4.7	55.4	40		19.5	26.4	54.1		71.6	27.3	1.1		5.7	85.1	9.2		
PHF	.625	.871	.701	.799	.747	.835	.936	.898	.870	.838	.600	.859	.750	.793	.667	.870	.913

Traffic Data Service

Campbell, CA

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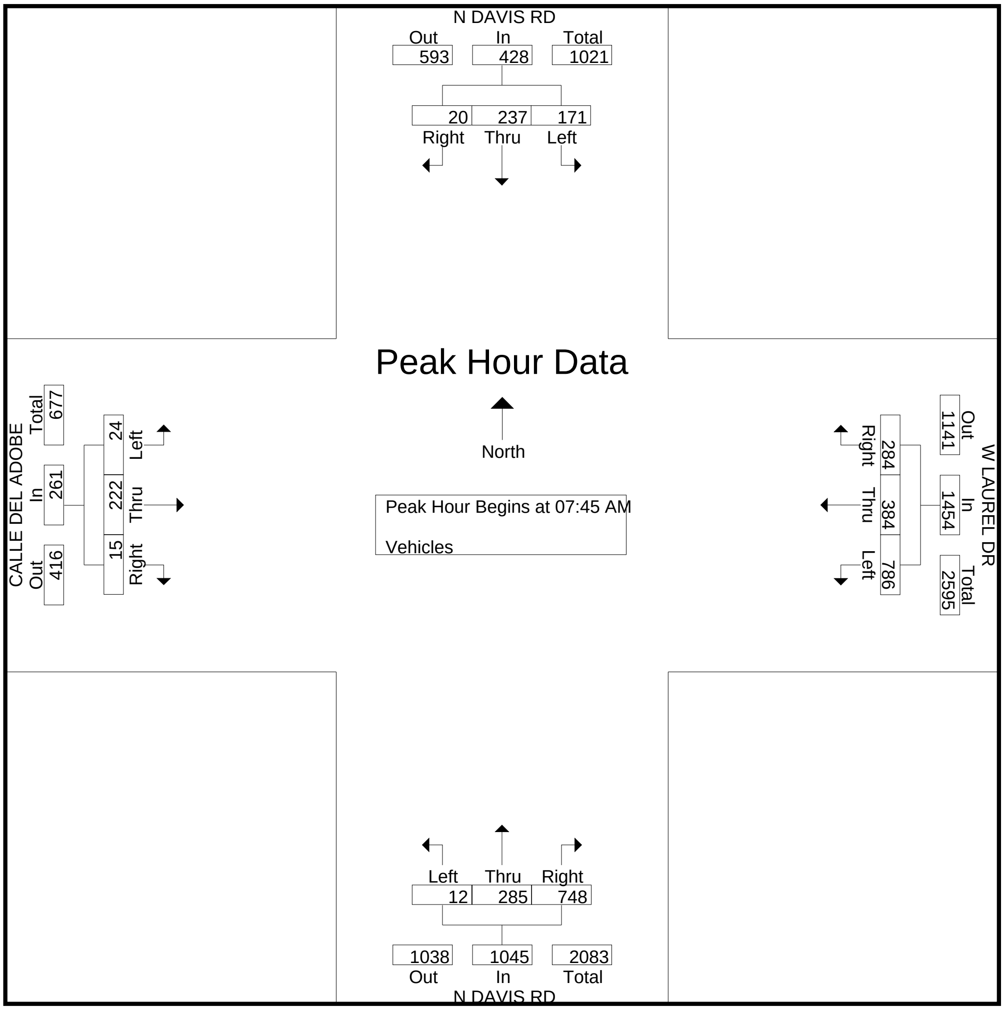
File Name : 51AM FINAL
Site Code : 00000051
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 52AM FINAL
Site Code : 00000052
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	SHERWOOD DR Southbound					E MARKET ST Westbound					E FRONT ST Northbound					MARKET WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	113	28	1	148	21	0	62	0	83	35	59	4	0	98	1	0	0	0	1	330
07:15 AM	2	138	31	4	175	15	2	88	4	109	20	93	5	0	118	0	0	0	1	1	403
07:30 AM	1	247	31	3	282	17	2	132	1	152	45	147	4	0	196	2	0	0	1	3	633
07:45 AM	2	287	51	2	342	31	6	163	1	201	61	169	3	0	233	0	0	0	2	2	778
Total	11	785	141	10	947	84	10	445	6	545	161	468	16	0	645	3	0	0	4	7	2144
08:00 AM	6	229	56	2	293	46	6	88	0	140	67	179	6	0	252	2	0	0	0	2	687
08:15 AM	5	160	49	3	217	48	10	80	2	140	51	119	7	0	177	1	0	0	2	3	537
08:30 AM	2	145	63	6	216	43	4	86	3	136	51	93	6	0	150	2	0	0	0	2	504
08:45 AM	6	202	35	1	244	33	5	66	1	105	45	109	6	4	164	1	0	0	0	1	514
Total	19	736	203	12	970	170	25	320	6	521	214	500	25	4	743	6	0	0	2	8	2242
Grand Total	30	1521	344	22	1917	254	35	765	12	1066	375	968	41	4	1388	9	0	0	6	15	4386
Apprch %	1.6	79.3	17.9	1.1		23.8	3.3	71.8	1.1		27	69.7	3	0.3		60	0	0	40		
Total %	0.7	34.7	7.8	0.5	43.7	5.8	0.8	17.4	0.3	24.3	8.5	22.1	0.9	0.1	31.6	0.2	0	0	0.1	0.3	

	SHERWOOD DR Southbound				E MARKET ST Westbound				E FRONT ST Northbound				MARKET WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	247	31	279	17	2	132	151	45	147	4	196	**2**	0	0	**2**	628
07:45 AM	2	**287**	51	**340**	31	6	**163**	**200**	61	169	3	233	0	0	0	0	**773**
08:00 AM	**6**	229	**56**	291	46	6	88	140	**67**	**179**	6	**252**	2	0	0	2	685
08:15 AM	5	160	49	214	**48**	**10**	80	138	51	119	**7**	177	1	0	0	1	530
Total Volume	14	923	187	1124	142	24	463	629	224	614	20	858	5	0	0	5	2616
% App. Total	1.2	82.1	16.6		22.6	3.8	73.6		26.1	71.6	2.3		100	0	0		
PHF	.583	.804	.835	.826	.740	.600	.710	.786	.836	.858	.714	.851	.625	.000	.000	.625	.846

Traffic Data Service

Campbell, CA
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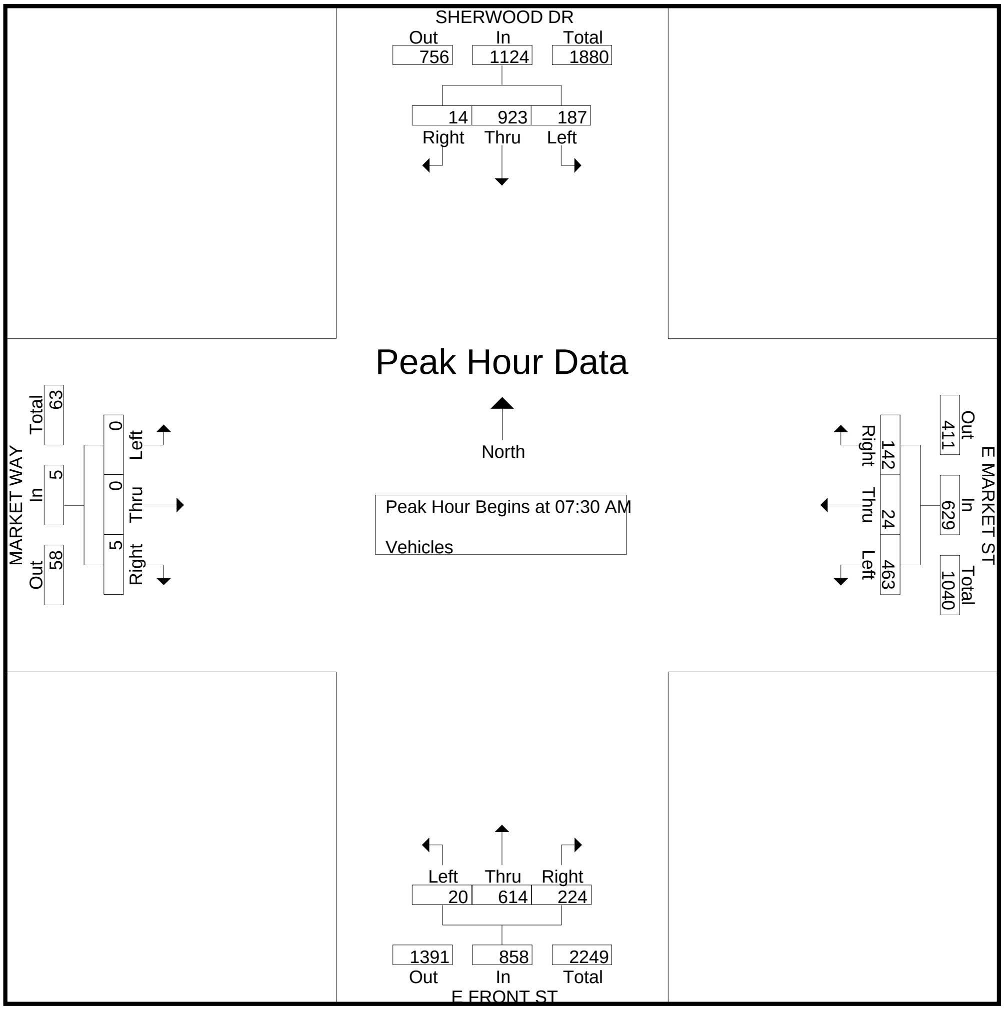
File Name : 52AM FINAL
Site Code : 00000052
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 53AM FINAL
Site Code : 00000053
Start Date : 1/14/2016

Groups Printed- Vehicles

	E FRONT ST Southbound					E FRONT ST Westbound					Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	99	0	77	0	176	28	30	0	1	59	0	0	0	0	0	0	39	71	0	110	345
07:15 AM	134	0	82	0	216	61	29	0	3	93	0	0	0	0	0	0	38	70	0	108	417
07:30 AM	245	0	130	0	375	79	44	0	7	130	0	0	0	0	0	0	51	128	0	179	684
07:45 AM	255	0	195	1	451	82	49	0	4	135	0	0	0	0	0	0	95	169	0	264	850
Total	733	0	484	1	1218	250	152	0	15	417	0	0	0	0	0	0	223	438	0	661	2296
08:00 AM	143	0	183	0	326	90	49	0	2	141	0	0	0	0	0	0	58	140	1	199	666
08:15 AM	142	0	101	0	243	75	43	0	2	120	0	0	0	0	0	0	58	113	3	174	537
08:30 AM	124	0	118	0	242	74	59	0	5	138	0	0	0	0	0	0	42	82	0	124	504
08:45 AM	162	0	98	0	260	68	57	0	4	129	0	0	0	0	0	0	37	94	0	131	520
Total	571	0	500	0	1071	307	208	0	13	528	0	0	0	0	0	0	195	429	4	628	2227
Grand Total	1304	0	984	1	2289	557	360	0	28	945	0	0	0	0	0	0	418	867	4	1289	4523
Apprch %	57	0	43	0		58.9	38.1	0	3		0	0	0	0		0	32.4	67.3	0.3		
Total %	28.8	0	21.8	0	50.6	12.3	8	0	0.6	20.9	0	0	0	0	0	0	9.2	19.2	0.1	28.5	

	E FRONT ST Southbound				E FRONT ST Westbound				Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	245	0	130	375	79	44	0	123	0	0	0	0	0	51	128	179	677
07:45 AM	**255**	0	**195**	**450**	82	**49**	0	131	0	0	0	0	0	**95**	**169**	**264**	**845**
08:00 AM	143	0	183	326	**90**	49	0	**139**	0	0	0	0	0	58	140	198	663
08:15 AM	142	0	101	243	75	43	0	118	0	0	0	0	0	58	113	171	532
Total Volume	785	0	609	1394	326	185	0	511	0	0	0	0	0	262	550	812	2717
% App. Total	56.3	0	43.7		63.8	36.2	0		0	0	0		0	32.3	67.7		
PHF	.770	.000	.781	.774	.906	.944	.000	.919	.000	.000	.000	.000	.000	.689	.814	.769	.804

Traffic Data Service

Campbell, CA
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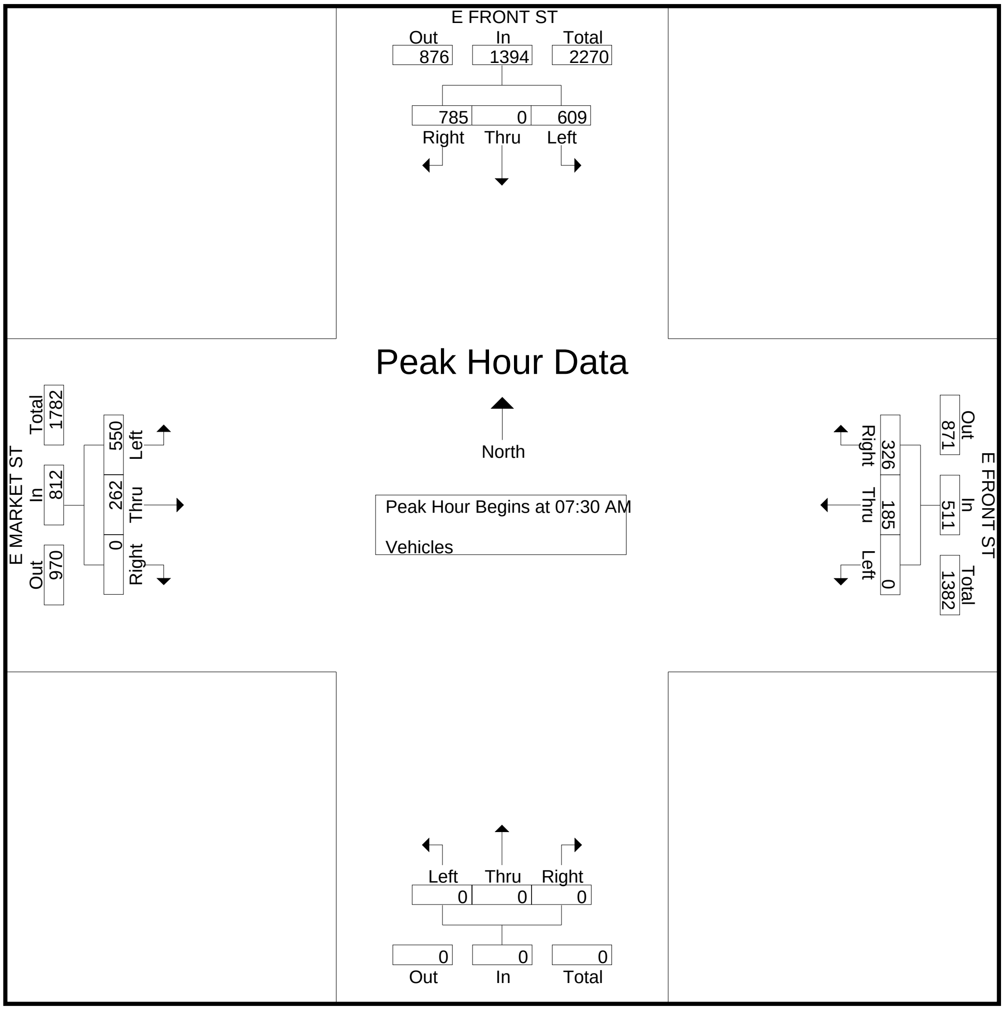
File Name : 53AM FINAL
Site Code : 00000053
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 54AM FINAL
Site Code : 00000054
Start Date : 11/19/2015

Groups Printed- Vehicles

	S DAVIS RD Southbound					W BLANCO RD Westbound					S DAVIS RD Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	196	102	14	0	312	36	147	75	0	258	3	19	6	0	28	8	37	66	0	111	709
07:15 AM	161	108	16	0	285	43	129	39	0	211	4	49	1	0	54	2	85	96	0	183	733
07:30 AM	156	92	27	0	275	35	138	26	0	199	8	53	1	0	62	2	123	140	0	265	801
07:45 AM	167	90	46	0	303	59	138	28	0	225	23	63	12	0	98	4	154	140	0	298	924
Total	680	392	103	0	1175	173	552	168	0	893	38	184	20	0	242	16	399	442	0	857	3167
08:00 AM	130	67	41	0	238	53	118	25	0	196	7	51	3	0	61	2	139	99	0	240	735
08:15 AM	160	77	56	0	293	53	127	22	0	202	10	54	8	0	72	4	90	99	0	193	760
08:30 AM	138	44	39	0	221	45	122	12	0	179	9	55	5	0	69	3	102	70	0	175	644
08:45 AM	141	49	44	0	234	47	105	13	0	165	6	41	4	0	51	2	78	79	0	159	609
Total	569	237	180	0	986	198	472	72	0	742	32	201	20	0	253	11	409	347	0	767	2748
Grand Total	1249	629	283	0	2161	371	1024	240	0	1635	70	385	40	0	495	27	808	789	0	1624	5915
Apprch %	57.8	29.1	13.1	0		22.7	62.6	14.7	0		14.1	77.8	8.1	0		1.7	49.8	48.6	0		
Total %	21.1	10.6	4.8	0	36.5	6.3	17.3	4.1	0	27.6	1.2	6.5	0.7	0	8.4	0.5	13.7	13.3	0	27.5	

	S DAVIS RD Southbound				W BLANCO RD Westbound				S DAVIS RD Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	156	**92**	27	275	35	**138**	26	199	8	53	1	62	2	123	**140**	265	801
07:45 AM	**167**	90	46	**303**	**59**	138	**28**	**225**	**23**	**63**	**12**	**98**	**4**	**154**	140	**298**	**924**
08:00 AM	130	67	41	238	53	118	25	196	7	51	3	61	2	139	99	240	735
08:15 AM	160	77	**56**	293	53	127	22	202	10	54	8	72	4	90	99	193	760
Total Volume	613	326	170	1109	200	521	101	822	48	221	24	293	12	506	478	996	3220
% App. Total	55.3	29.4	15.3		24.3	63.4	12.3		16.4	75.4	8.2		1.2	50.8	48		
PHF	.918	.886	.759	.915	.847	.944	.902	.913	.522	.877	.500	.747	.750	.821	.854	.836	.871

Traffic Data Service

Campbell, CA

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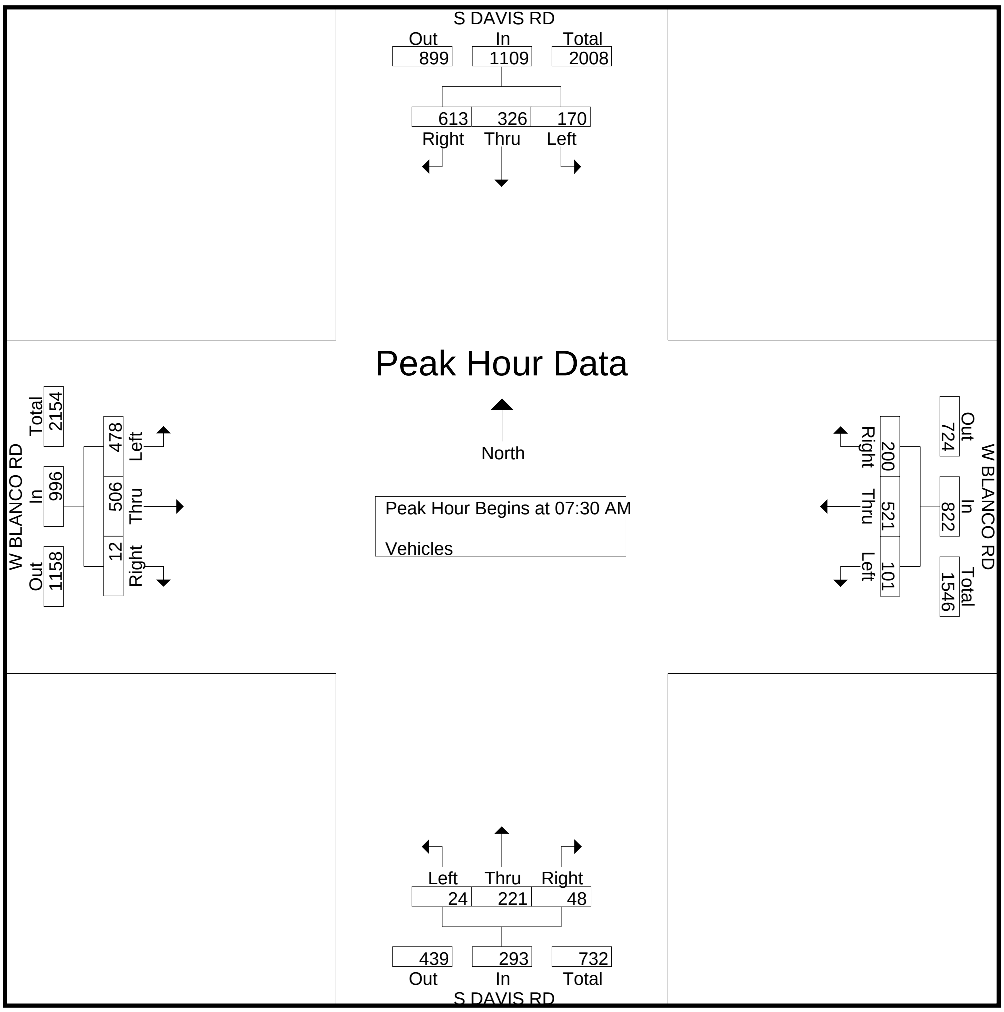
File Name : 54AM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 55AM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	MONTEREY ST Southbound					E MARKET ST Westbound					MONTEREY ST Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	8	110	0	5	123	18	58	10	5	91	0	108	22	0	130	344
07:15 AM	0	0	0	3	3	7	161	0	2	170	14	66	8	4	92	0	103	29	0	132	397
07:30 AM	0	0	0	0	0	16	226	0	3	245	25	101	12	3	141	0	142	53	0	195	581
07:45 AM	0	0	0	0	0	17	276	0	2	295	23	141	15	2	181	0	204	59	0	263	739
Total	0	0	0	3	3	48	773	0	12	833	80	366	45	14	505	0	557	163	0	720	2061
08:00 AM	0	0	0	0	0	15	187	0	1	203	25	141	17	0	183	0	177	54	0	231	617
08:15 AM	0	0	0	4	4	20	134	0	3	157	28	115	18	3	164	0	157	32	0	189	514
08:30 AM	0	0	0	0	0	15	140	0	0	155	23	121	18	2	164	0	126	40	0	166	485
08:45 AM	0	0	0	2	2	11	138	0	1	150	22	121	13	2	158	0	144	58	1	203	513
Total	0	0	0	6	6	61	599	0	5	665	98	498	66	7	669	0	604	184	1	789	2129
Grand Total	0	0	0	9	9	109	1372	0	17	1498	178	864	111	21	1174	0	1161	347	1	1509	4190
Apprch %	0	0	0	100		7.3	91.6	0	1.1		15.2	73.6	9.5	1.8		0	76.9	23	0.1		
Total %	0	0	0	0.2	0.2	2.6	32.7	0	0.4	35.8	4.2	20.6	2.6	0.5	28	0	27.7	8.3	0	36	

	MONTEREY ST Southbound				E MARKET ST Westbound				MONTEREY ST Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	16	226	0	242	25	101	12	138	0	142	53	195	575
07:45 AM	0	0	0	0	17	**276**	0	**293**	23	**141**	15	179	0	**204**	**59**	**263**	**735**
08:00 AM	0	0	0	0	15	187	0	202	25	141	17	**183**	0	177	54	231	616
08:15 AM	0	0	0	0	**20**	134	0	154	**28**	115	**18**	161	0	157	32	189	504
Total Volume	0	0	0	0	68	823	0	891	101	498	62	661	0	680	198	878	2430
% App. Total	0	0	0		7.6	92.4	0		15.3	75.3	9.4		0	77.4	22.6		
PHF	.000	.000	.000	.000	.850	.745	.000	.760	.902	.883	.861	.903	.000	.833	.839	.835	.827

Traffic Data Service

Campbell, CA
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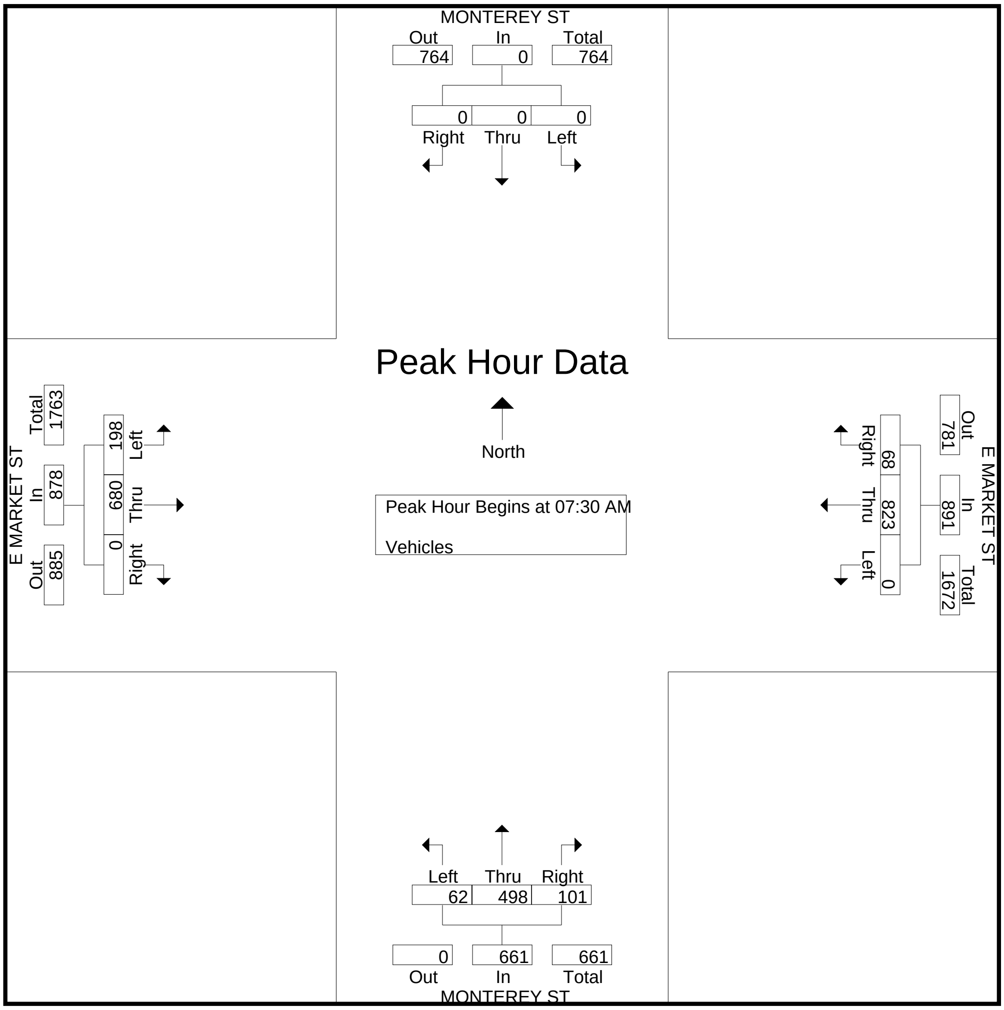
File Name : 55AM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 56AM FINAL
Site Code : 00000056
Start Date : 11/18/2015

Groups Printed- Vehicles

	N MAIN ST Southbound					E MARKET ST Westbound					SALINAS ST Northbound					W MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	48	143	14	1	206	0	107	21	1	129	0	0	0	1	1	6	119	0	7	132	468
07:15 AM	74	183	22	1	280	0	142	16	0	158	0	0	0	1	1	8	122	0	2	132	571
07:30 AM	112	299	38	0	449	0	204	34	0	238	0	0	0	0	0	16	152	0	2	170	857
07:45 AM	122	329	59	0	510	0	255	37	0	292	0	0	0	0	0	11	219	0	4	234	1036
Total	356	954	133	2	1445	0	708	108	1	817	0	0	0	2	2	41	612	0	15	668	2932
08:00 AM	89	233	35	0	357	0	170	29	1	200	0	0	0	2	2	19	168	0	5	192	751
08:15 AM	79	197	40	3	319	0	130	19	3	152	0	0	0	1	1	17	160	0	6	183	655
08:30 AM	68	206	20	0	294	0	125	31	2	158	0	0	0	1	1	19	139	0	6	164	617
08:45 AM	82	225	33	2	342	0	119	30	0	149	0	0	0	1	1	20	165	0	4	189	681
Total	318	861	128	5	1312	0	544	109	6	659	0	0	0	5	5	75	632	0	21	728	2704
Grand Total	674	1815	261	7	2757	0	1252	217	7	1476	0	0	0	7	7	116	1244	0	36	1396	5636
Apprch %	24.4	65.8	9.5	0.3		0	84.8	14.7	0.5		0	0	0	100		8.3	89.1	0	2.6		
Total %	12	32.2	4.6	0.1	48.9	0	22.2	3.9	0.1	26.2	0	0	0	0.1	0.1	2.1	22.1	0	0.6	24.8	

	N MAIN ST Southbound				E MARKET ST Westbound				SALINAS ST Northbound				W MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	112	299	38	449	0	204	34	238	0	0	0	0	16	152	0	168	855
07:45 AM	**122**	**329**	**59**	**510**	0	**255**	**37**	**292**	0	0	0	0	11	**219**	0	**230**	**1032**
08:00 AM	89	233	35	357	0	170	29	199	0	0	0	0	**19**	168	0	187	743
08:15 AM	79	197	40	316	0	130	19	149	0	0	0	0	17	160	0	177	642
Total Volume	402	1058	172	1632	0	759	119	878	0	0	0	0	63	699	0	762	3272
% App. Total	24.6	64.8	10.5		0	86.4	13.6		0	0	0		8.3	91.7	0		
PHF	.824	.804	.729	.800	.000	.744	.804	.752	.000	.000	.000	.000	.829	.798	.000	.828	.793

Traffic Data Service

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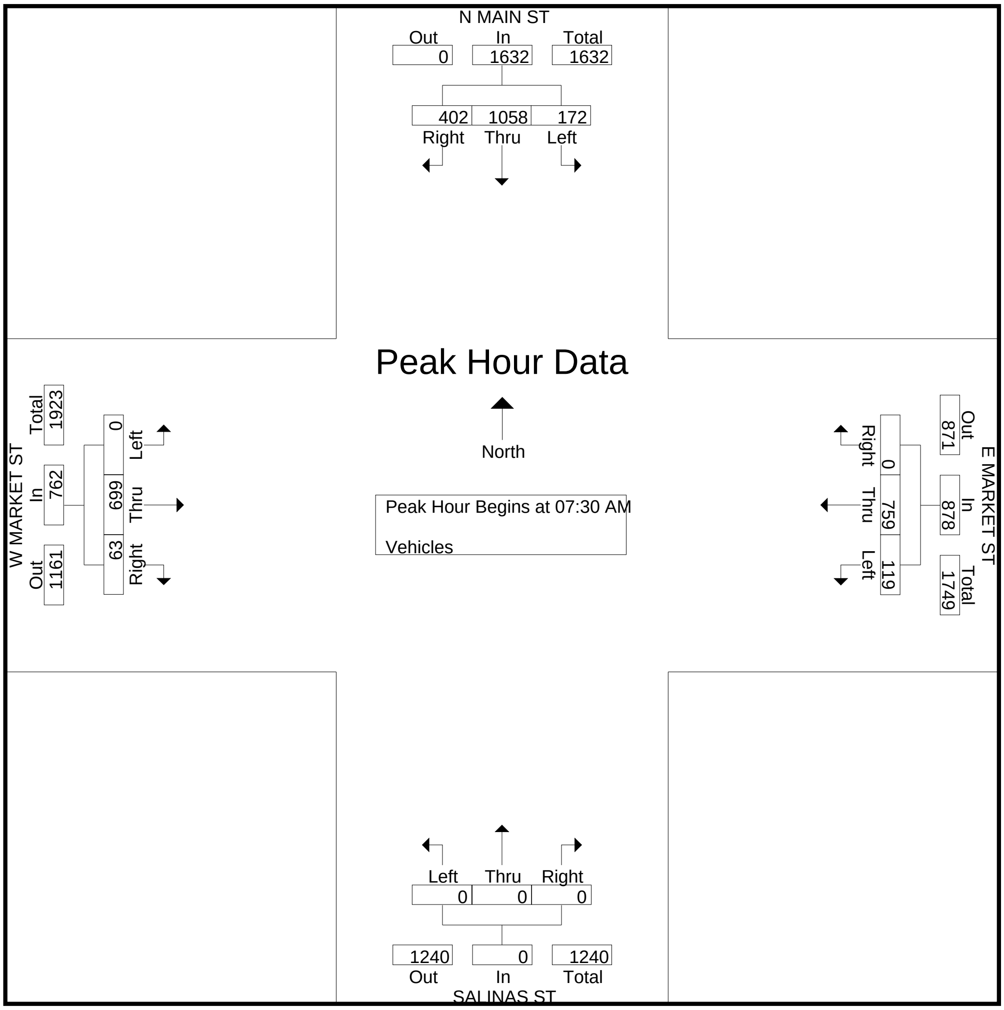
File Name : 56AM FINAL
Site Code : 00000056
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 57AM FINAL
Site Code : 00000057
Start Date : 1/14/2016

Groups Printed- Vehicles

	SR-68 Southbound					E BLANCO RD Westbound					SR-68 Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	26	126	11	0	163	9	67	121	0	197	80	81	30	0	191	49	55	24	1	129	680
07:15 AM	17	104	14	0	135	8	68	129	0	205	109	106	39	0	254	33	84	24	0	141	735
07:30 AM	22	117	20	0	159	15	69	120	0	204	140	256	49	0	445	51	111	36	0	198	1006
07:45 AM	36	146	31	0	213	32	82	130	0	244	178	228	42	0	448	70	129	52	1	252	1157
Total	101	493	76	0	670	64	286	500	0	850	507	671	160	0	1338	203	379	136	2	720	3578
08:00 AM	27	140	21	0	188	23	98	118	0	239	109	135	58	1	303	67	114	55	0	236	966
08:15 AM	31	110	28	0	169	17	69	93	0	179	124	147	59	0	330	43	97	47	1	188	866
08:30 AM	30	97	23	0	150	12	78	94	0	184	109	125	60	0	294	27	68	54	0	149	777
08:45 AM	30	82	15	0	127	30	75	108	0	213	89	140	55	0	284	29	86	69	0	184	808
Total	118	429	87	0	634	82	320	413	0	815	431	547	232	1	1211	166	365	225	1	757	3417
Grand Total	219	922	163	0	1304	146	606	913	0	1665	938	1218	392	1	2549	369	744	361	3	1477	6995
Apprch %	16.8	70.7	12.5	0		8.8	36.4	54.8	0		36.8	47.8	15.4	0		25	50.4	24.4	0.2		
Total %	3.1	13.2	2.3	0	18.6	2.1	8.7	13.1	0	23.8	13.4	17.4	5.6	0	36.4	5.3	10.6	5.2	0	21.1	

	SR-68 Southbound				E BLANCO RD Westbound				SR-68 Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	22	117	20	159	15	69	120	204	140	**256**	49	445	51	111	36	198	1006
07:45 AM	**36**	**146**	**31**	**213**	**32**	82	**130**	**244**	**178**	228	42	**448**	**70**	**129**	52	**251**	**1156**
08:00 AM	27	140	21	188	23	**98**	118	239	109	135	58	302	67	114	**55**	236	965
08:15 AM	31	110	28	169	17	69	93	179	124	147	**59**	330	43	97	47	187	865
Total Volume	116	513	100	729	87	318	461	866	551	766	208	1525	231	451	190	872	3992
% App. Total	15.9	70.4	13.7		10	36.7	53.2		36.1	50.2	13.6		26.5	51.7	21.8		
PHF	.806	.878	.806	.856	.680	.811	.887	.887	.774	.748	.881	.851	.825	.874	.864	.869	.863

Traffic Data Service

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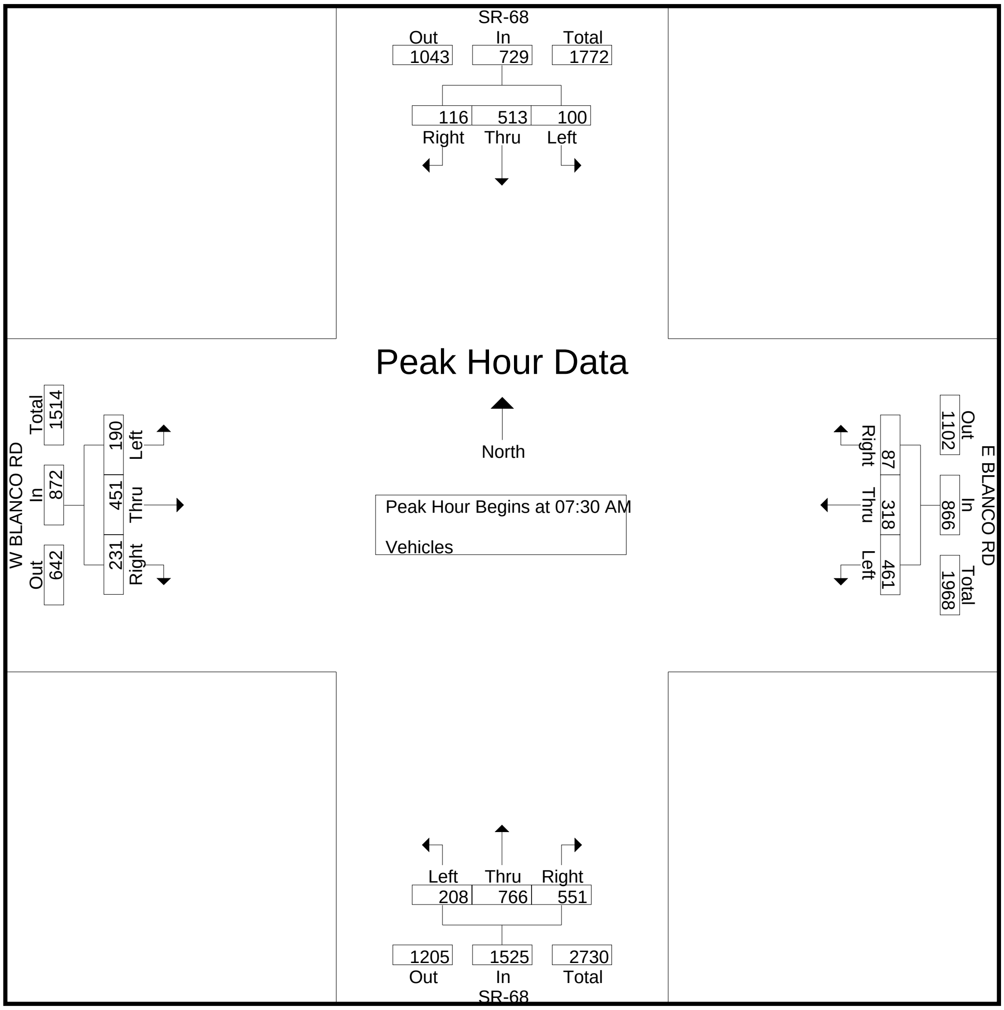
File Name : 57AM FINAL
Site Code : 00000057
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

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tdsbay@cs.com

File Name : 1PM FINAL
Site Code : 00000001
Start Date : 11/19/2015
Page No : 1

Groups Printed- Vehicles

	US-101 SB OFF-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 SB ON-RAMP Northbound					ECHO VALLEY RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	9	1	57	0	67	0	10	29	0	39	0	0	0	0	0	3	9	0	0	12	118
04:15 PM	9	1	72	0	82	0	10	23	0	33	0	0	0	0	0	3	7	0	0	10	125
04:30 PM	8	1	71	0	80	0	11	19	0	30	0	0	0	0	0	9	12	0	0	21	131
04:45 PM	8	1	89	0	98	0	17	24	0	41	0	0	0	0	0	8	9	0	0	17	156
Total	34	4	289	0	327	0	48	95	0	143	0	0	0	0	0	23	37	0	0	60	530
05:00 PM	6	0	81	0	87	0	26	26	0	52	0	0	0	0	0	2	4	0	0	6	145
05:15 PM	9	0	77	0	86	0	25	26	0	51	0	0	0	0	0	9	11	0	0	20	157
05:30 PM	8	0	73	0	81	0	10	25	0	35	0	0	0	0	0	10	11	0	0	21	137
05:45 PM	5	0	63	0	68	0	19	22	0	41	0	0	0	0	0	6	5	0	0	11	120
Total	28	0	294	0	322	0	80	99	0	179	0	0	0	0	0	27	31	0	0	58	559
Grand Total	62	4	583	0	649	0	128	194	0	322	0	0	0	0	0	50	68	0	0	118	1089
Apprch %	9.6	0.6	89.8	0		0	39.8	60.2	0		0	0	0	0		42.4	57.6	0	0		
Total %	5.7	0.4	53.5	0	59.6	0	11.8	17.8	0	29.6	0	0	0	0	0	4.6	6.2	0	0	10.8	

	US-101 SB OFF-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 SB ON-RAMP Northbound				ECHO VALLEY RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	8	**1**	**89**	**98**	0	17	24	41	0	0	0	0	8	9	0	17	156
05:00 PM	6	0	81	87	0	**26**	**26**	**52**	0	0	0	0	2	4	0	6	145
05:15 PM	**9**	0	77	86	0	25	26	51	0	0	0	0	9	**11**	0	20	**157**
05:30 PM	8	0	73	81	0	10	25	35	0	0	0	0	**10**	11	0	**21**	137
Total Volume	31	1	320	352	0	78	101	179	0	0	0	0	29	35	0	64	595
% App. Total	8.8	0.3	90.9		0	43.6	56.4		0	0	0		45.3	54.7	0		
PHF	.861	.250	.899	.898	.000	.750	.971	.861	.000	.000	.000	.000	.725	.795	.000	.762	.947

Traffic Data Service

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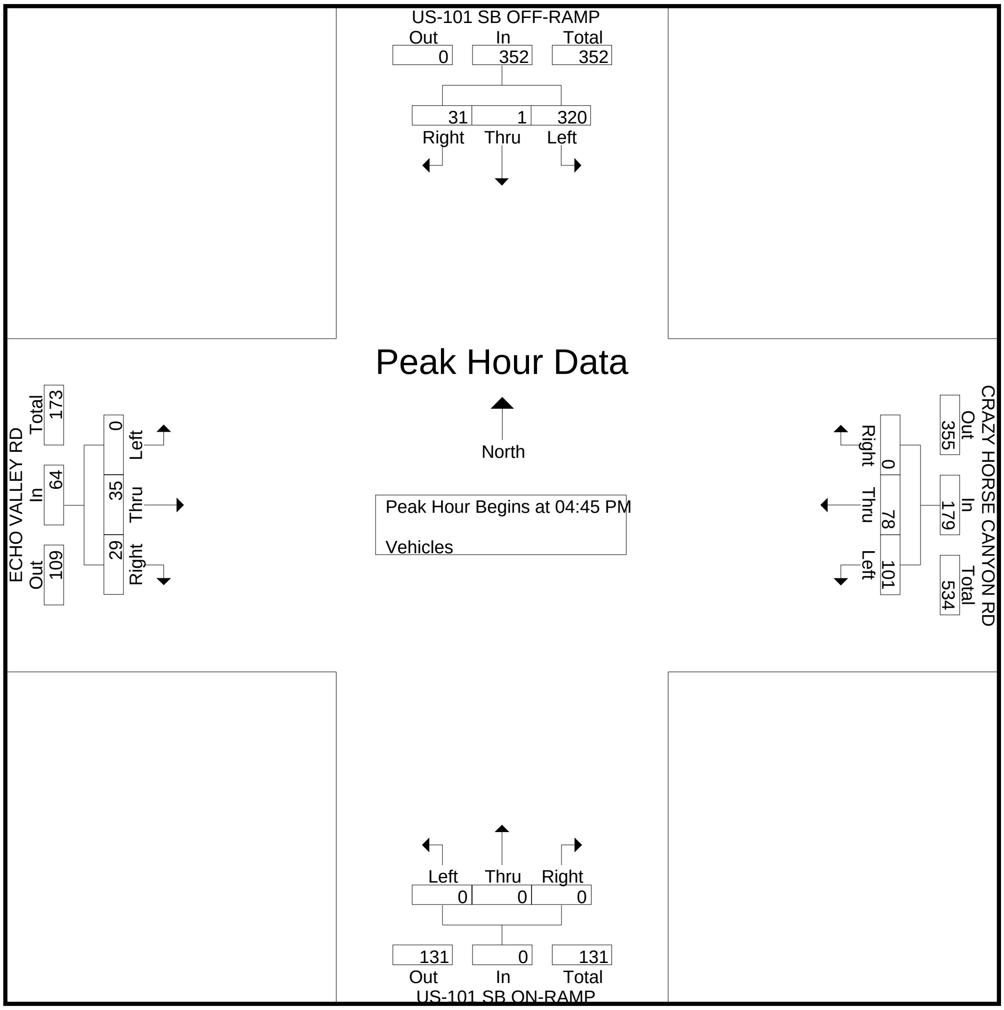
File Name : 1PM FINAL
Site Code : 00000001
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

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File Name : 2PM FINAL
Site Code : 00000002
Start Date : 11/19/2015
Page No : 1

Groups Printed- Vehicles

	US-101 NB ON-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 NB OFF-RAMP Northbound					CRAZY HORSE CANYON RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	27	21	0	0	48	10	0	18	0	28	0	63	5	0	68	144
04:15 PM	0	0	0	0	0	26	16	0	0	42	13	1	16	0	30	0	78	4	0	82	154
04:30 PM	0	0	0	0	0	23	11	0	0	34	15	0	19	0	34	0	78	4	0	82	150
04:45 PM	0	0	0	0	0	37	18	0	0	55	11	0	27	0	38	0	97	3	0	100	193
Total	0	0	0	0	0	113	66	0	0	179	49	1	80	0	130	0	316	16	0	332	641
05:00 PM	0	0	0	0	0	50	27	0	0	77	9	1	24	0	34	0	83	3	0	86	197
05:15 PM	0	0	0	0	0	32	19	0	0	51	15	1	31	0	47	0	84	4	0	88	186
05:30 PM	0	0	0	0	0	32	11	0	0	43	20	1	23	0	44	0	78	5	0	83	170
05:45 PM	0	0	0	0	0	17	17	0	0	34	12	0	25	0	37	0	67	1	0	68	139
Total	0	0	0	0	0	131	74	0	0	205	56	3	103	0	162	0	312	13	0	325	692
Grand Total	0	0	0	0	0	244	140	0	0	384	105	4	183	0	292	0	628	29	0	657	1333
Apprch %	0	0	0	0		63.5	36.5	0	0		36	1.4	62.7	0		0	95.6	4.4	0		
Total %	0	0	0	0	0	18.3	10.5	0	0	28.8	7.9	0.3	13.7	0	21.9	0	47.1	2.2	0	49.3	

	US-101 NB ON-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 NB OFF-RAMP Northbound				CRAZY HORSE CANYON RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	37	18	0	55	11	0	27	38	0	**97**	3	**100**	193
05:00 PM	0	0	0	0	**50**	**27**	0	**77**	9	**1**	24	34	0	83	3	86	**197**
05:15 PM	0	0	0	0	32	19	0	51	15	1	**31**	**47**	0	84	4	88	186
05:30 PM	0	0	0	0	32	11	0	43	**20**	1	23	44	0	78	**5**	83	170
Total Volume	0	0	0	0	151	75	0	226	55	3	105	163	0	342	15	357	746
% App. Total	0	0	0		66.8	33.2	0		33.7	1.8	64.4		0	95.8	4.2		
PHF	.000	.000	.000	.000	.755	.694	.000	.734	.688	.750	.847	.867	.000	.881	.750	.893	.947

Traffic Data Service

Campbell, CA
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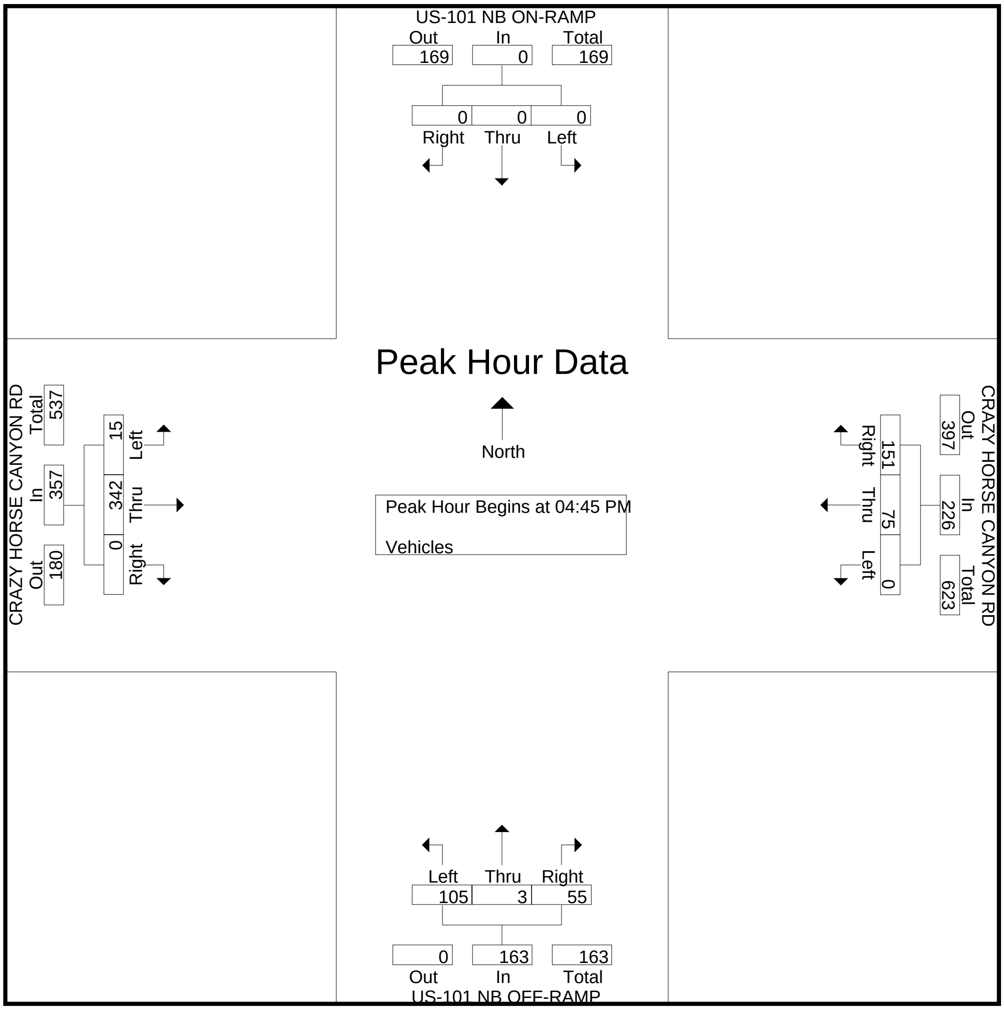
File Name : 2PM FINAL
Site Code : 00000002
Start Date : 11/19/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 3PM FINAL
Site Code : 00000003
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	US-101 NB ON-RAMP Southbound					SALA RD Westbound					US-101 NB OFF-RAMP Northbound					US-101 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	25	39	0	0	64	40	3	2	0	45	0	43	3	0	46	155
04:15 PM	0	0	0	0	0	27	25	0	0	52	48	0	4	0	52	0	60	7	0	67	171
04:30 PM	0	0	0	0	0	21	55	0	0	76	38	1	1	0	40	0	40	8	0	48	164
04:45 PM	0	0	0	0	0	33	55	0	0	88	60	1	1	0	62	0	55	4	0	59	209
Total	0	0	0	0	0	106	174	0	0	280	186	5	8	0	199	0	198	22	0	220	699
05:00 PM	0	0	0	0	0	37	49	0	0	86	34	0	1	0	35	0	58	2	0	60	181
05:15 PM	0	0	0	0	0	33	62	0	0	95	45	0	1	0	46	0	55	2	0	57	198
05:30 PM	0	0	0	0	0	43	45	0	0	88	50	0	0	0	50	0	72	1	0	73	211
05:45 PM	0	0	0	0	0	25	37	0	0	62	36	3	4	0	43	0	70	1	0	71	176
Total	0	0	0	0	0	138	193	0	0	331	165	3	6	0	174	0	255	6	0	261	766
Grand Total	0	0	0	0	0	244	367	0	0	611	351	8	14	0	373	0	453	28	0	481	1465
Apprch %	0	0	0	0		39.9	60.1	0	0		94.1	2.1	3.8	0		0	94.2	5.8	0		
Total %	0	0	0	0	0	16.7	25.1	0	0	41.7	24	0.5	1	0	25.5	0	30.9	1.9	0	32.8	

	US-101 NB ON-RAMP Southbound				SALA RD Westbound				US-101 NB OFF-RAMP Northbound				US-101 SB RAMPS Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	33	55	0	88	**60**	**1**	**1**	**62**	0	55	**4**	59	209
05:00 PM	0	0	0	0	37	49	0	86	34	0	1	35	0	58	2	60	181
05:15 PM	0	0	0	0	33	**62**	0	**95**	45	0	1	46	0	55	2	57	198
05:30 PM	0	0	0	0	**43**	45	0	88	50	0	0	50	0	**72**	1	**73**	**211**
Total Volume	0	0	0	0	146	211	0	357	189	1	3	193	0	240	9	249	799
% App. Total	0	0	0		40.9	59.1	0		97.9	0.5	1.6		0	96.4	3.6		
PHF	.000	.000	.000	.000	.849	.851	.000	.939	.788	.250	.750	.778	.000	.833	.563	.853	.947

Traffic Data Service

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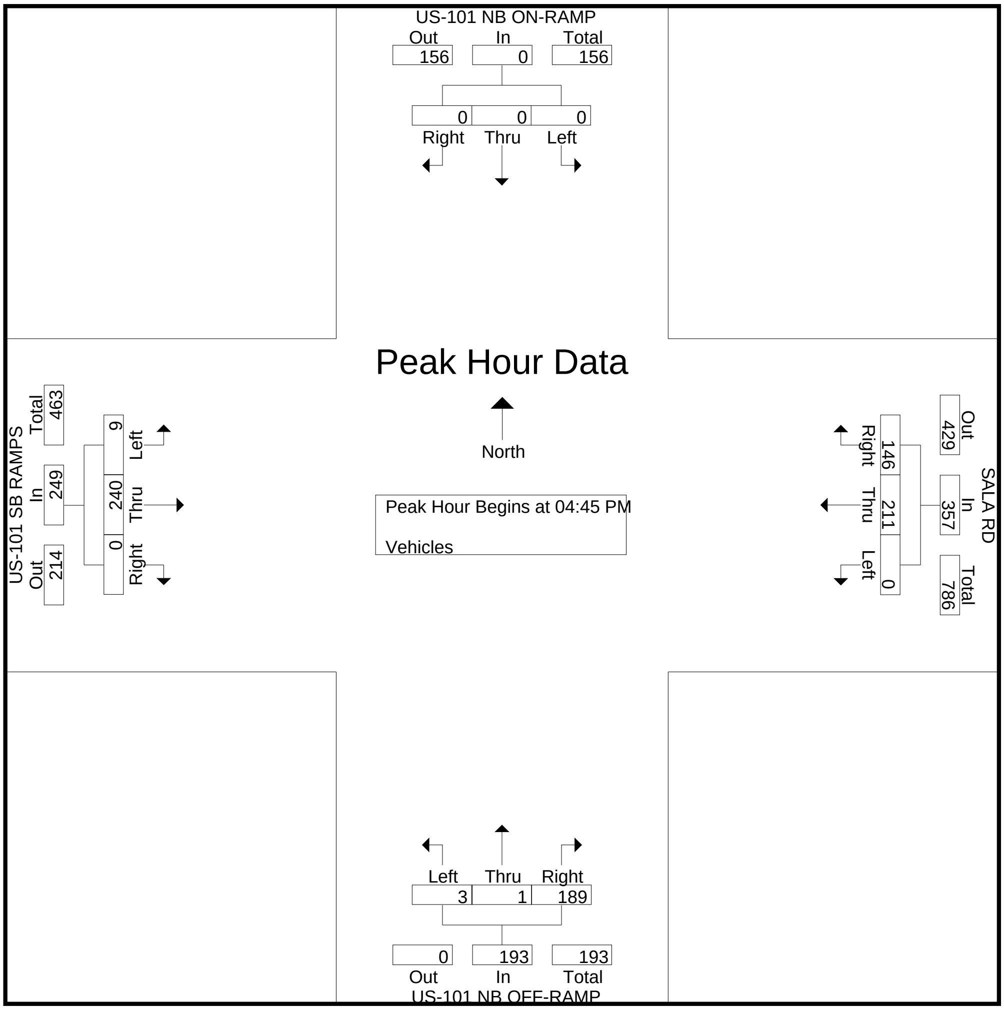
File Name : 3PM FINAL
Site Code : 00000003
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 4PM FINAL
Site Code : 00000004
Start Date : 11/17/2015

Groups Printed- Vehicles

	HARRISON RD Southbound					Westbound					HARRISON RD Northbound					SALA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	15	19	0	0	34	0	0	0	0	0	0	13	52	0	65	72	0	15	0	87	186
04:15 PM	5	18	0	0	23	0	0	0	0	0	0	15	55	0	70	93	0	16	0	109	202
04:30 PM	14	29	0	0	43	0	0	0	0	0	0	13	70	0	83	77	0	7	0	84	210
04:45 PM	21	35	0	0	56	0	0	0	0	0	0	16	71	0	87	106	0	16	0	122	265
Total	55	101	0	0	156	0	0	0	0	0	0	57	248	0	305	348	0	54	0	402	863
05:00 PM	17	25	0	0	42	0	0	0	0	0	0	16	65	0	81	88	0	11	0	99	222
05:15 PM	21	21	0	0	42	0	0	0	0	0	0	18	73	0	91	84	0	15	0	99	232
05:30 PM	11	34	0	0	45	0	0	0	0	0	0	15	77	0	92	106	0	19	0	125	262
05:45 PM	9	13	0	0	22	0	0	0	0	0	0	19	51	0	70	95	0	11	0	106	198
Total	58	93	0	0	151	0	0	0	0	0	0	68	266	0	334	373	0	56	0	429	914
Grand Total	113	194	0	0	307	0	0	0	0	0	0	125	514	0	639	721	0	110	0	831	1777
Apprch %	36.8	63.2	0	0		0	0	0	0		0	19.6	80.4	0		86.8	0	13.2	0		
Total %	6.4	10.9	0	0	17.3	0	0	0	0	0	0	7	28.9	0	36	40.6	0	6.2	0	46.8	

	HARRISON RD Southbound				Westbound				HARRISON RD Northbound				SALA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**21**	**35**	0	**56**	0	0	0	0	0	16	71	87	**106**	0	16	122	**265**
05:00 PM	17	25	0	42	0	0	0	0	0	16	65	81	88	0	11	99	222
05:15 PM	21	21	0	42	0	0	0	0	0	**18**	73	91	84	0	15	99	232
05:30 PM	11	34	0	45	0	0	0	0	0	15	**77**	**92**	106	0	**19**	**125**	262
Total Volume	70	115	0	185	0	0	0	0	0	65	286	351	384	0	61	445	981
% App. Total	37.8	62.2	0		0	0	0		0	18.5	81.5		86.3	0	13.7		
PHF	.833	.821	.000	.826	.000	.000	.000	.000	.000	.903	.929	.954	.906	.000	.803	.890	.925

Traffic Data Service
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File Name : 4PM FINAL
Site Code : 00000004
Start Date : 11/17/2015
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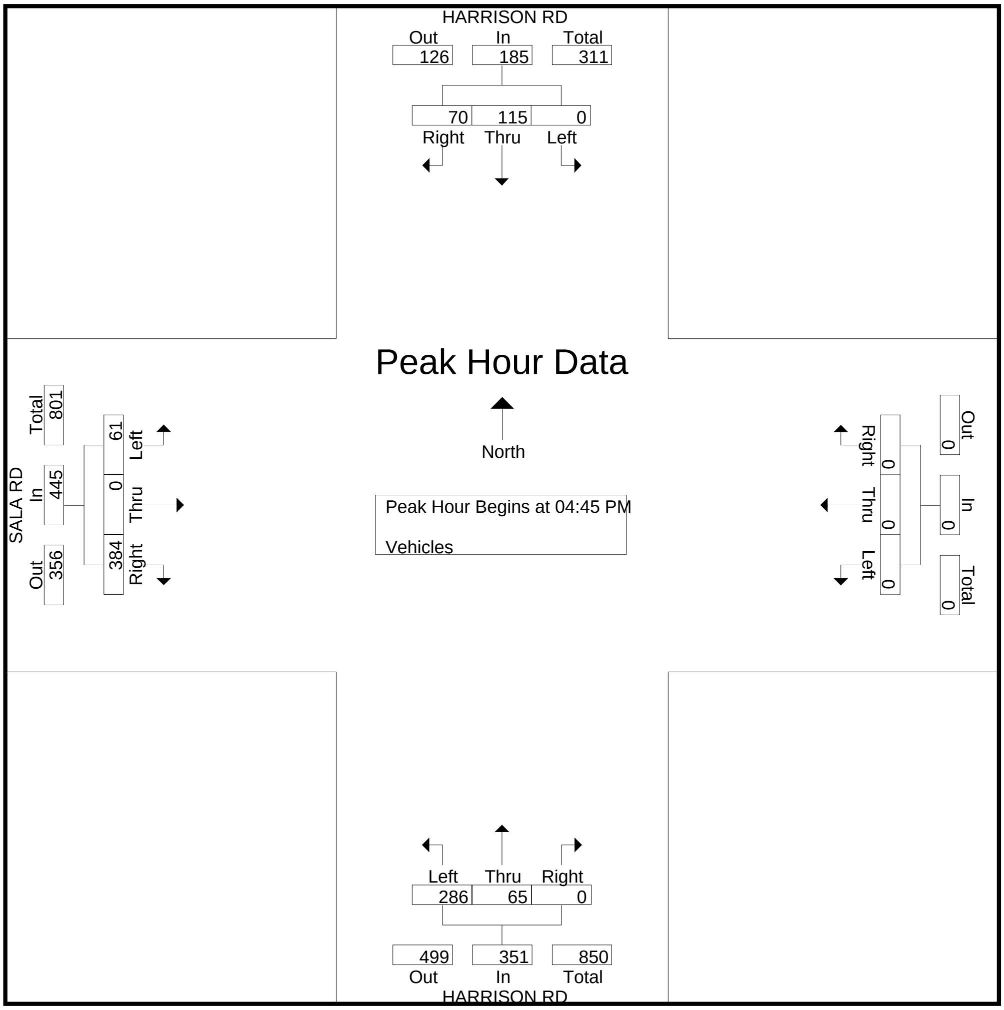

Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 5PM FINAL
Site Code : 00000005
Start Date : 11/19/2015
Page No : 1

Groups Printed- Vehicles

	CRAZY HORSE CANYON RD Southbound					SAN JUAN GRADE RD Westbound					CRAZY HORSE CANYON RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	77	9	0	0	86	0	3	1	0	4	1	2	0	0	3	0	3	36	0	39	132
04:15 PM	69	5	1	0	75	0	6	0	0	6	0	4	0	0	4	0	4	33	0	37	122
04:30 PM	86	4	0	0	90	0	2	0	0	2	1	3	4	0	8	2	6	31	0	39	139
04:45 PM	72	5	1	0	78	0	4	2	0	6	0	4	0	0	4	0	5	43	0	48	136
Total	304	23	2	0	329	0	15	3	0	18	2	13	4	0	19	2	18	143	0	163	529
05:00 PM	103	6	3	0	112	0	6	0	0	6	2	5	2	0	9	0	4	56	0	60	187
05:15 PM	94	3	0	0	97	0	6	0	0	6	0	2	2	0	4	0	4	31	0	35	142
05:30 PM	85	4	0	0	89	1	8	0	0	9	0	1	1	0	2	0	3	44	0	47	147
05:45 PM	75	2	0	0	77	0	2	0	0	2	0	2	2	0	4	0	1	16	0	17	100
Total	357	15	3	0	375	1	22	0	0	23	2	10	7	0	19	0	12	147	0	159	576
Grand Total	661	38	5	0	704	1	37	3	0	41	4	23	11	0	38	2	30	290	0	322	1105
Apprch %	93.9	5.4	0.7	0		2.4	90.2	7.3	0		10.5	60.5	28.9	0		0.6	9.3	90.1	0		
Total %	59.8	3.4	0.5	0	63.7	0.1	3.3	0.3	0	3.7	0.4	2.1	1	0	3.4	0.2	2.7	26.2	0	29.1	

	CRAZY HORSE CANYON RD Southbound				SAN JUAN GRADE RD Westbound				CRAZY HORSE CANYON RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	72	5	1	78	0	4	**2**	6	0	4	0	4	0	**5**	43	48	136
05:00 PM	**103**	**6**	**3**	**112**	0	6	0	6	**2**	**5**	**2**	**9**	0	4	**56**	**60**	**187**
05:15 PM	94	3	0	97	0	6	0	6	0	2	2	4	0	4	31	35	142
05:30 PM	85	4	0	89	**1**	**8**	0	**9**	0	1	1	2	0	3	44	47	147
Total Volume	354	18	4	376	1	24	2	27	2	12	5	19	0	16	174	190	612
% App. Total	94.1	4.8	1.1		3.7	88.9	7.4		10.5	63.2	26.3		0	8.4	91.6		
PHF	.859	.750	.333	.839	.250	.750	.250	.750	.250	.600	.625	.528	.000	.800	.777	.792	.818

Traffic Data Service

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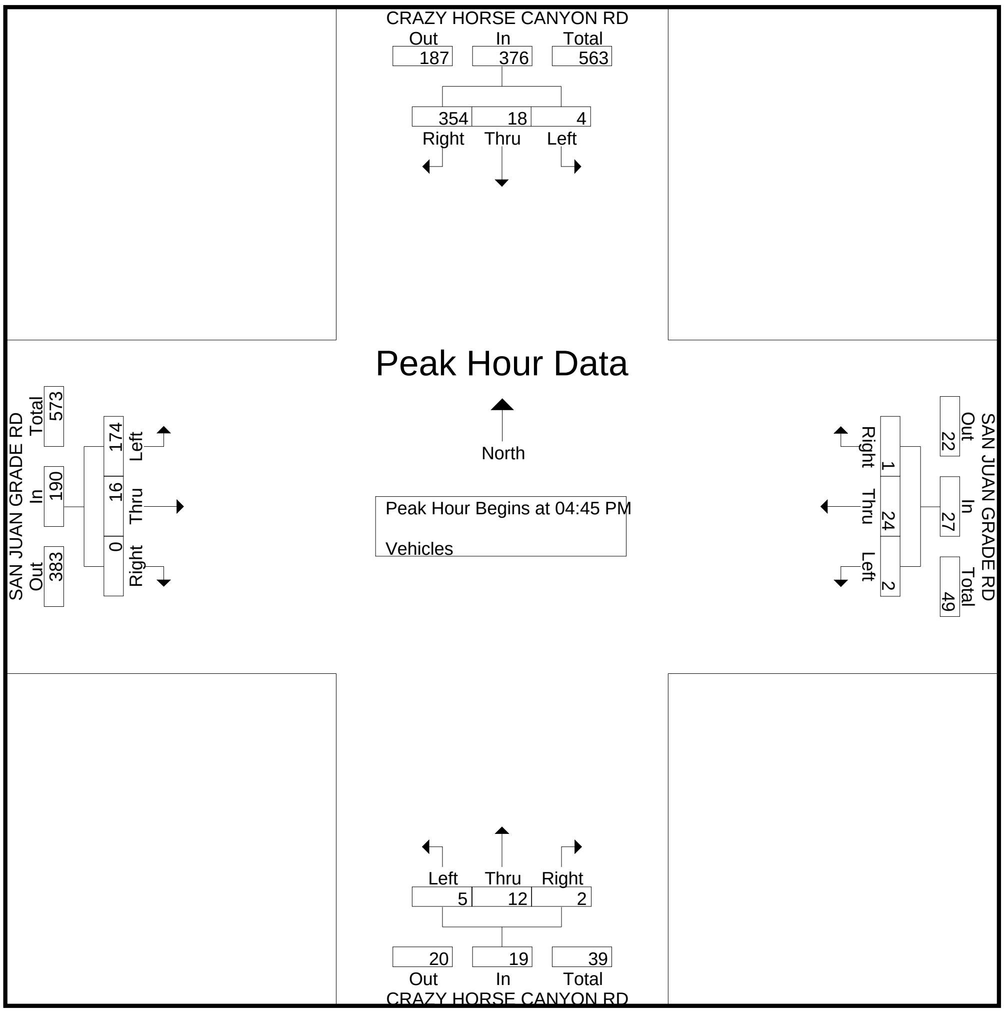

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File Name : 6PM FINAL
Site Code : 00000006
Start Date : 11/17/2015
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Groups Printed- Vehicles

	HERBERT RD Southbound					SAN JUAN GRADE RD Westbound					HERBERT RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	2	0	0	2	1	29	69	0	99	20	0	4	0	24	4	16	1	0	21	146
04:15 PM	7	1	0	0	8	0	17	40	0	57	33	0	4	0	37	7	14	0	0	21	123
04:30 PM	4	0	0	0	4	1	24	60	0	85	23	0	1	0	24	3	24	0	0	27	140
04:45 PM	1	1	0	0	2	0	30	71	1	102	37	1	1	0	39	5	19	1	0	25	168
Total	12	4	0	0	16	2	100	240	1	343	113	1	10	0	124	19	73	2	0	94	577
05:00 PM	4	11	3	0	18	0	49	102	0	151	33	0	2	0	35	7	17	0	0	24	228
05:15 PM	8	4	0	0	12	0	31	70	0	101	31	0	3	0	34	8	12	0	0	20	167
05:30 PM	0	0	0	0	0	0	24	55	0	79	42	0	3	0	45	6	17	0	0	23	147
05:45 PM	0	0	0	0	0	0	23	69	0	92	15	0	1	0	16	4	15	0	0	19	127
Total	12	15	3	0	30	0	127	296	0	423	121	0	9	0	130	25	61	0	0	86	669
Grand Total	24	19	3	0	46	2	227	536	1	766	234	1	19	0	254	44	134	2	0	180	1246
Apprch %	52.2	41.3	6.5	0		0.3	29.6	70	0.1		92.1	0.4	7.5	0		24.4	74.4	1.1	0		
Total %	1.9	1.5	0.2	0	3.7	0.2	18.2	43	0.1	61.5	18.8	0.1	1.5	0	20.4	3.5	10.8	0.2	0	14.4	

	HERBERT RD Southbound				SAN JUAN GRADE RD Westbound				HERBERT RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	1	0	2	0	30	71	101	37	**1**	1	39	5	**19**	**1**	**25**	167
05:00 PM	4	**11**	**3**	**18**	0	**49**	**102**	**151**	33	0	2	35	7	17	0	24	**228**
05:15 PM	**8**	4	0	12	0	31	70	101	31	0	**3**	34	**8**	12	0	20	167
05:30 PM	0	0	0	0	0	24	55	79	**42**	0	3	**45**	6	17	0	23	147
Total Volume	13	16	3	32	0	134	298	432	143	1	9	153	26	65	1	92	709
% App. Total	40.6	50	9.4		0	31	69		93.5	0.7	5.9		28.3	70.7	1.1		
PHF	.406	.364	.250	.444	.000	.684	.730	.715	.851	.250	.750	.850	.813	.855	.250	.920	.777

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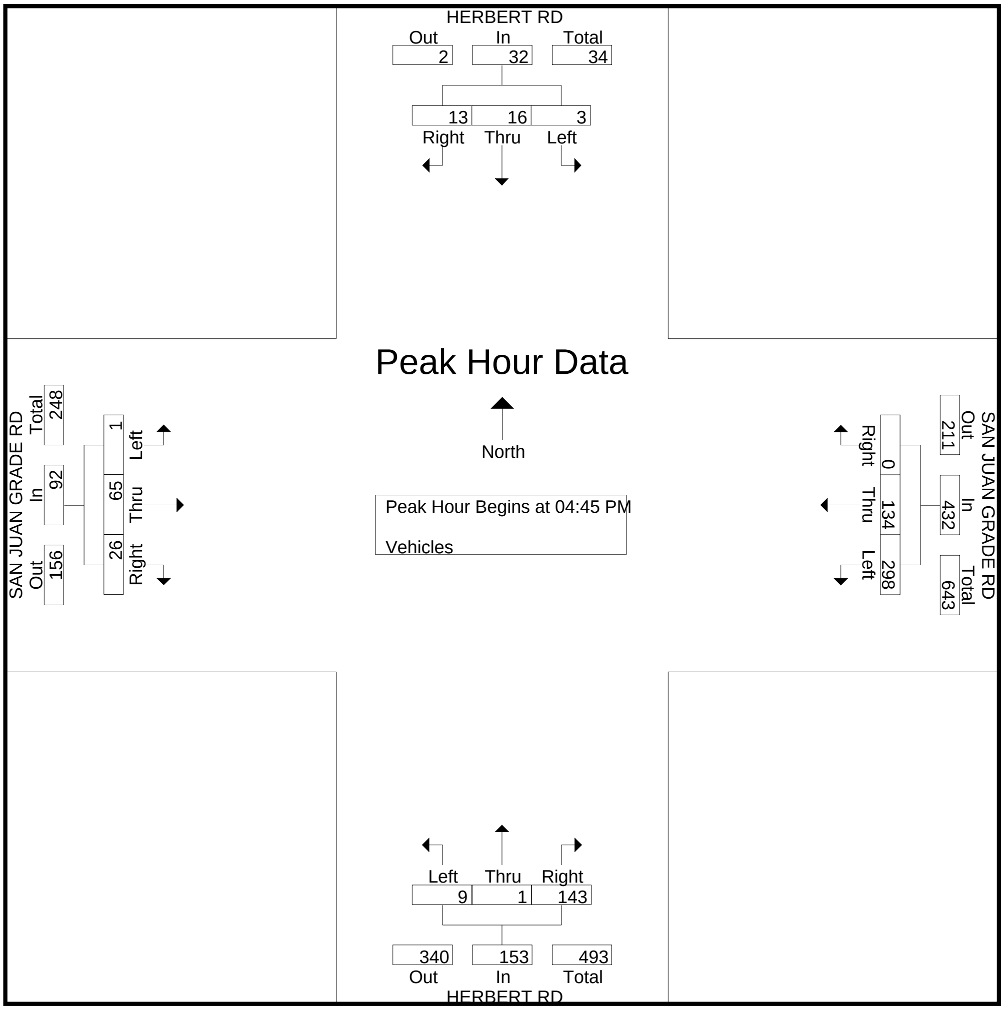

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File Name : 7PM FINAL
Site Code : 00000007
Start Date : 11/17/2015
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Groups Printed- Vehicles

	HERBERT RD Southbound					OLD STAGE RD Westbound					OLD STAGE RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	83	1	0	84	0	0	3	0	3	5	27	0	0	32	0	0	0	0	0	119
04:15 PM	0	42	0	0	42	0	0	5	0	5	5	37	0	0	42	0	0	0	0	0	89
04:30 PM	0	62	1	0	63	0	0	7	0	7	3	27	0	0	30	0	0	0	0	0	100
04:45 PM	0	79	0	0	79	0	0	6	0	6	2	40	0	0	42	0	0	0	0	0	127
Total	0	266	2	0	268	0	0	21	0	21	15	131	0	0	146	0	0	0	0	0	435
05:00 PM	0	119	0	0	119	0	0	5	0	5	4	36	0	0	40	0	0	0	0	0	164
05:15 PM	0	85	0	0	85	0	0	10	0	10	2	41	0	0	43	0	0	0	0	0	138
05:30 PM	0	59	0	0	59	0	0	4	0	4	2	48	0	0	50	0	0	0	0	0	113
05:45 PM	0	67	0	0	67	0	0	4	0	4	1	19	0	0	20	0	0	0	0	0	91
Total	0	330	0	0	330	0	0	23	0	23	9	144	0	0	153	0	0	0	0	0	506
Grand Total	0	596	2	0	598	0	0	44	0	44	24	275	0	0	299	0	0	0	0	0	941
Apprch %	0	99.7	0.3	0		0	0	100	0		8	92	0	0		0	0	0	0		
Total %	0	63.3	0.2	0	63.5	0	0	4.7	0	4.7	2.6	29.2	0	0	31.8	0	0	0	0	0	

	HERBERT RD Southbound				OLD STAGE RD Westbound				OLD STAGE RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	79	0	79	0	0	6	6	2	40	0	42	0	0	0	0	127
05:00 PM	0	**119**	0	**119**	0	0	5	5	**4**	36	0	40	0	0	0	0	**164**
05:15 PM	0	85	0	85	0	0	**10**	**10**	2	41	0	43	0	0	0	0	138
05:30 PM	0	59	0	59	0	0	4	4	2	**48**	0	**50**	0	0	0	0	113
Total Volume	0	342	0	342	0	0	25	25	10	165	0	175	0	0	0	0	542
% App. Total	0	100	0		0	0	100		5.7	94.3	0		0	0	0		
PHF	.000	.718	.000	.718	.000	.000	.625	.625	.625	.859	.000	.875	.000	.000	.000	.000	.826

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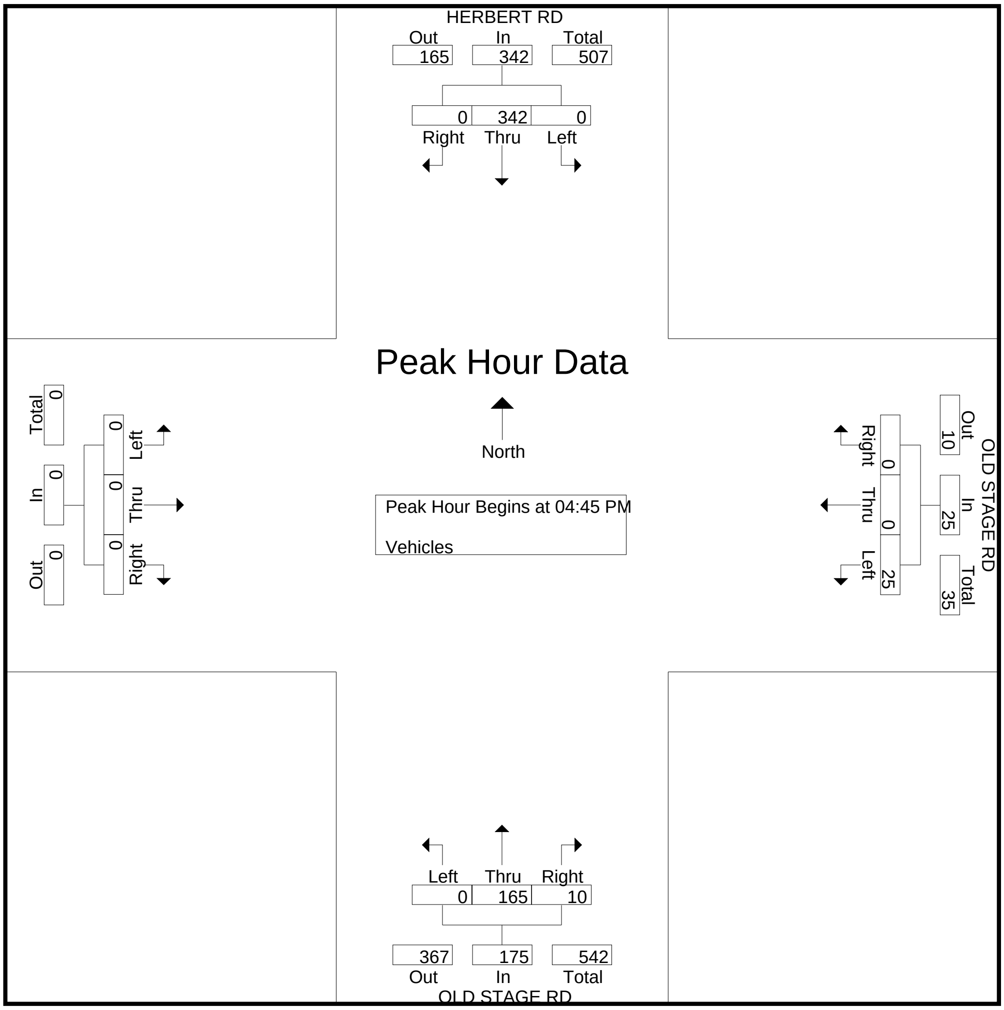

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File Name : 8PM FINAL
Site Code : 00000008
Start Date : 11/17/2015

Groups Printed- Vehicles

	HARRISON RD Southbound					RUSSELL RD Westbound					N MAIN ST Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	14	23	44	0	81	19	27	20	0	66	31	23	39	0	93	177	47	20	0	244	484
04:15 PM	18	36	43	0	97	22	20	31	0	73	23	14	51	0	88	130	51	19	0	200	458
04:30 PM	19	38	51	0	108	26	21	20	0	67	17	19	31	0	67	182	58	31	0	271	513
04:45 PM	20	40	62	1	123	31	18	16	1	66	33	20	53	0	106	182	63	23	0	268	563
Total	71	137	200	1	409	98	86	87	1	272	104	76	174	0	354	671	219	93	0	983	2018
05:00 PM	11	39	48	2	100	35	20	32	2	89	33	19	35	1	88	171	95	31	0	297	574
05:15 PM	9	33	65	3	110	19	18	26	2	65	25	23	42	0	90	156	84	55	0	295	560
05:30 PM	26	33	72	0	131	19	16	23	0	58	44	24	50	0	118	170	53	40	0	263	570
05:45 PM	16	45	57	0	118	25	11	24	0	60	31	15	36	0	82	159	57	26	0	242	502
Total	62	150	242	5	459	98	65	105	4	272	133	81	163	1	378	656	289	152	0	1097	2206
Grand Total	133	287	442	6	868	196	151	192	5	544	237	157	337	1	732	1327	508	245	0	2080	4224
Apprch %	15.3	33.1	50.9	0.7		36	27.8	35.3	0.9		32.4	21.4	46	0.1		63.8	24.4	11.8	0		
Total %	3.1	6.8	10.5	0.1	20.5	4.6	3.6	4.5	0.1	12.9	5.6	3.7	8	0	17.3	31.4	12	5.8	0	49.2	

	HARRISON RD Southbound				RUSSELL RD Westbound				N MAIN ST Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	20	**40**	62	122	31	18	16	65	33	20	**53**	106	**182**	63	23	268	561
05:00 PM	11	39	48	98	**35**	**20**	**32**	**87**	33	19	35	87	171	**95**	31	**297**	569
05:15 PM	9	33	65	107	19	18	26	63	25	23	42	90	156	84	**55**	295	555
05:30 PM	**26**	33	**72**	**131**	19	16	23	58	**44**	**24**	50	**118**	170	53	40	263	**570**
Total Volume	66	145	247	458	104	72	97	273	135	86	180	401	679	295	149	1123	2255
% App. Total	14.4	31.7	53.9		38.1	26.4	35.5		33.7	21.4	44.9		60.5	26.3	13.3		
PHF	.635	.906	.858	.874	.743	.900	.758	.784	.767	.896	.849	.850	.933	.776	.677	.945	.989

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File Name : 8PM FINAL
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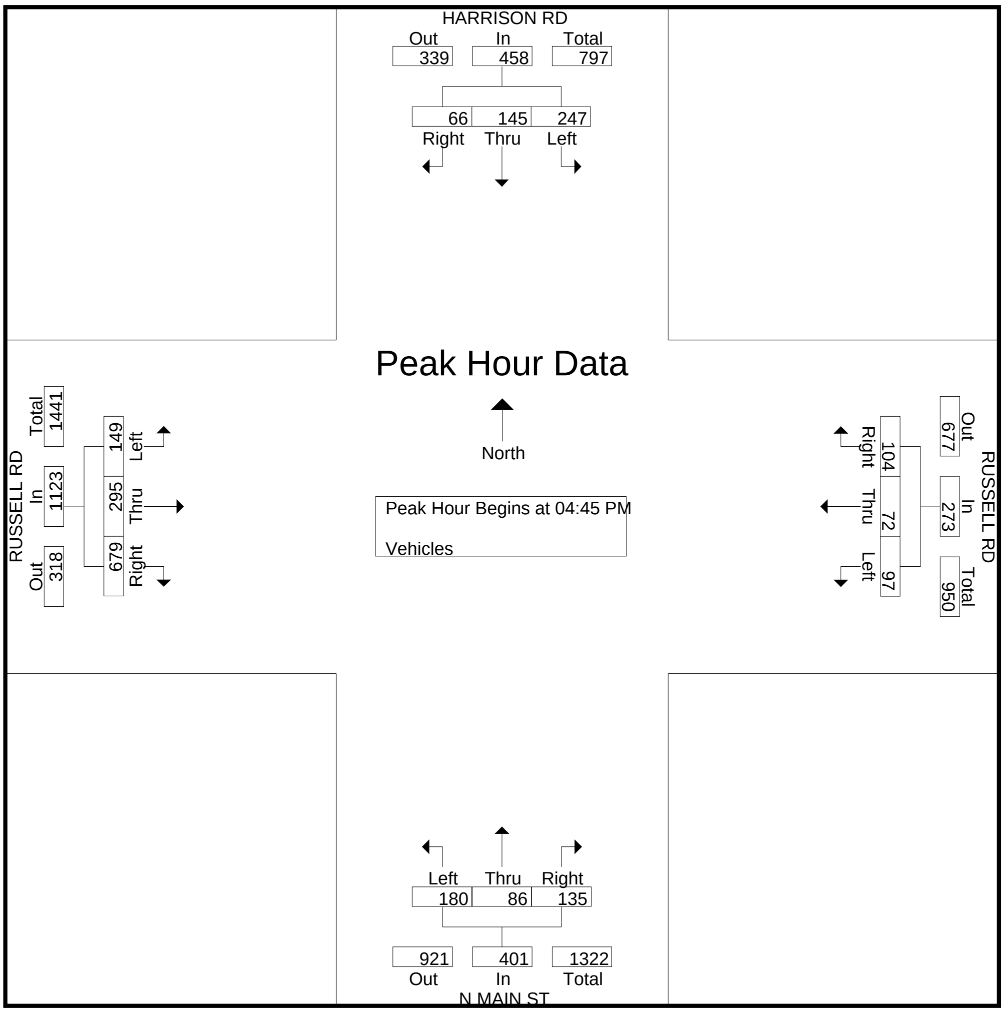

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File Name : 9PM FINAL
Site Code : 00000009
Start Date : 11/17/2015
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Groups Printed- Vehicles

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	1	1	0	5	1	52	6	0	59	5	0	14	1	20	20	89	1	0	110	194
04:15 PM	2	1	4	0	7	2	62	6	0	70	2	0	9	1	12	25	84	1	0	110	199
04:30 PM	3	0	2	0	5	0	39	6	0	45	8	0	9	0	17	22	100	0	0	122	189
04:45 PM	0	1	1	0	2	4	59	10	0	73	6	0	12	2	20	27	122	1	0	150	245
Total	8	3	8	0	19	7	212	28	0	247	21	0	44	4	69	94	395	3	0	492	827
05:00 PM	0	0	0	0	0	4	76	8	0	88	6	0	11	0	17	31	124	2	2	159	264
05:15 PM	1	0	0	0	1	13	56	8	0	77	9	11	16	0	36	25	138	5	1	169	283
05:30 PM	1	3	2	0	6	6	65	8	0	79	4	6	13	0	23	22	122	5	2	151	259
05:45 PM	6	4	5	0	15	6	55	7	0	68	9	11	6	0	26	23	104	3	2	132	241
Total	8	7	7	0	22	29	252	31	0	312	28	28	46	0	102	101	488	15	7	611	1047
Grand Total	16	10	15	0	41	36	464	59	0	559	49	28	90	4	171	195	883	18	7	1103	1874
Apprch %	39	24.4	36.6	0		6.4	83	10.6	0		28.7	16.4	52.6	2.3		17.7	80.1	1.6	0.6		
Total %	0.9	0.5	0.8	0	2.2	1.9	24.8	3.1	0	29.8	2.6	1.5	4.8	0.2	9.1	10.4	47.1	1	0.4	58.9	

	VAN BUREN AVE Southbound				RUSSELL RD Westbound				VAN BUREN AVE Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	1	1	2	4	59	**10**	73	6	0	12	18	27	122	1	150	243
05:00 PM	0	0	0	0	4	**76**	8	**88**	6	0	11	17	**31**	124	2	157	262
05:15 PM	**1**	0	0	1	**13**	56	8	77	**9**	**11**	**16**	**36**	25	**138**	**5**	**168**	**282**
05:30 PM	1	**3**	**2**	**6**	6	65	8	79	4	6	13	23	22	122	5	149	257
Total Volume	2	4	3	9	27	256	34	317	25	17	52	94	105	506	13	624	1044
% App. Total	22.2	44.4	33.3		8.5	80.8	10.7		26.6	18.1	55.3		16.8	81.1	2.1		
PHF	.500	.333	.375	.375	.519	.842	.850	.901	.694	.386	.813	.653	.847	.917	.650	.929	.926

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File Name : 9PM FINAL
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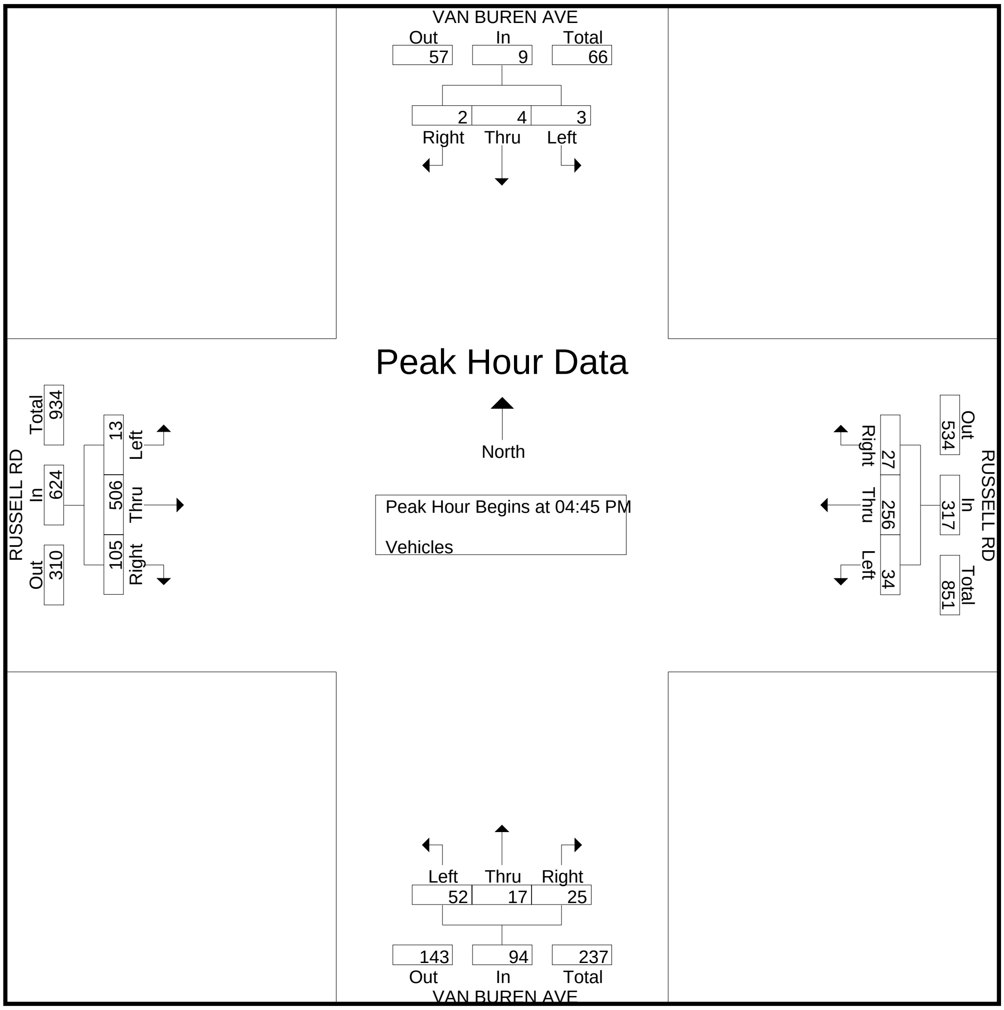

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File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/17/2015
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					ROGGE RD Westbound					SAN JUAN GRADE RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	46	13	0	59	6	1	34	0	41	26	48	0	0	74	2	1	1	0	4	178
04:15 PM	0	58	3	0	61	4	1	31	0	36	32	42	0	1	75	0	0	1	0	1	173
04:30 PM	1	58	14	0	73	8	1	40	0	49	39	53	1	0	93	0	1	0	0	1	216
04:45 PM	0	53	10	1	64	10	0	36	0	46	47	47	1	0	95	1	0	1	0	2	207
Total	1	215	40	1	257	28	3	141	0	172	144	190	2	1	337	3	2	3	0	8	774
05:00 PM	0	128	44	0	172	7	1	47	0	55	54	33	1	0	88	1	2	1	0	4	319
05:15 PM	0	75	13	0	88	13	0	35	0	48	65	45	0	0	110	1	1	6	0	8	254
05:30 PM	0	66	13	0	79	6	0	36	0	42	56	56	0	0	112	1	2	0	0	3	236
05:45 PM	0	41	9	0	50	4	0	32	0	36	42	41	1	0	84	1	2	0	0	3	173
Total	0	310	79	0	389	30	1	150	0	181	217	175	2	0	394	4	7	7	0	18	982
Grand Total	1	525	119	1	646	58	4	291	0	353	361	365	4	1	731	7	9	10	0	26	1756
Apprch %	0.2	81.3	18.4	0.2		16.4	1.1	82.4	0		49.4	49.9	0.5	0.1		26.9	34.6	38.5	0		
Total %	0.1	29.9	6.8	0.1	36.8	3.3	0.2	16.6	0	20.1	20.6	20.8	0.2	0.1	41.6	0.4	0.5	0.6	0	1.5	

	SAN JUAN GRADE RD Southbound				ROGGE RD Westbound				SAN JUAN GRADE RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	53	10	63	10	0	36	46	47	47	**1**	95	**1**	0	1	2	206
05:00 PM	0	**128**	**44**	**172**	7	**1**	**47**	**55**	54	33	1	88	1	**2**	1	4	**319**
05:15 PM	0	75	13	88	**13**	0	35	48	**65**	45	0	110	1	1	**6**	**8**	254
05:30 PM	0	66	13	79	6	0	36	42	56	**56**	0	**112**	1	2	0	3	236
Total Volume	0	322	80	402	36	1	154	191	222	181	2	405	4	5	8	17	1015
% App. Total	0	80.1	19.9		18.8	0.5	80.6		54.8	44.7	0.5		23.5	29.4	47.1		
PHF	.000	.629	.455	.584	.692	.250	.819	.868	.854	.808	.500	.904	1.00	.625	.333	.531	.795

Traffic Data Service

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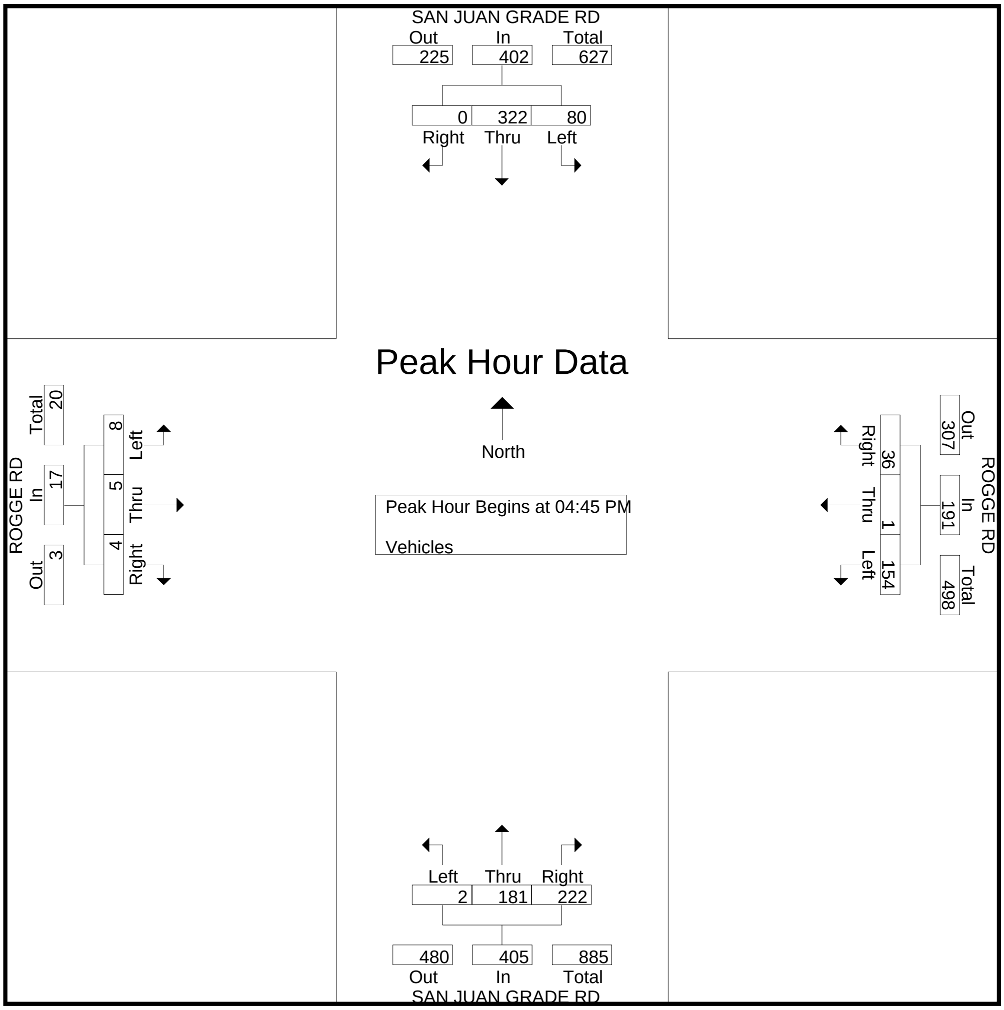
File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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File Name : 11PM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	37	74	0	0	111	0	0	0	0	0	0	61	27	0	88	42	0	46	0	88	287
04:15 PM	39	72	0	0	111	0	0	0	0	0	0	61	32	0	93	44	0	42	0	86	290
04:30 PM	35	85	0	0	120	0	0	0	0	0	0	65	15	0	80	47	0	51	1	99	299
04:45 PM	41	67	0	0	108	0	0	0	0	0	0	84	35	0	119	50	0	66	0	116	343
Total	152	298	0	0	450	0	0	0	0	0	0	271	109	0	380	183	0	205	1	389	1219
05:00 PM	64	133	0	0	197	0	0	0	0	0	0	85	34	0	119	66	0	59	0	125	441
05:15 PM	37	98	0	0	135	0	0	0	0	0	0	75	43	0	118	61	0	73	0	134	387
05:30 PM	49	75	0	0	124	0	0	0	0	0	0	76	43	0	119	64	0	62	0	126	369
05:45 PM	40	54	0	0	94	0	0	0	0	0	0	72	36	0	108	52	0	59	0	111	313
Total	190	360	0	0	550	0	0	0	0	0	0	308	156	0	464	243	0	253	0	496	1510
Grand Total	342	658	0	0	1000	0	0	0	0	0	0	579	265	0	844	426	0	458	1	885	2729
Apprch %	34.2	65.8	0	0		0	0	0	0		0	68.6	31.4	0		48.1	0	51.8	0.1		
Total %	12.5	24.1	0	0	36.6	0	0	0	0	0	0	21.2	9.7	0	30.9	15.6	0	16.8	0	32.4	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	41	67	0	108	0	0	0	0	0	84	35	**119**	50	0	66	116	343
05:00 PM	**64**	**133**	0	**197**	0	0	0	0	0	**85**	34	119	**66**	0	59	125	**441**
05:15 PM	37	98	0	135	0	0	0	0	0	75	**43**	118	61	0	**73**	**134**	387
05:30 PM	49	75	0	124	0	0	0	0	0	76	43	119	64	0	62	126	369
Total Volume	191	373	0	564	0	0	0	0	0	320	155	475	241	0	260	501	1540
% App. Total	33.9	66.1	0		0	0	0		0	67.4	32.6		48.1	0	51.9		
PHF	.746	.701	.000	.716	.000	.000	.000	.000	.000	.941	.901	.998	.913	.000	.890	.935	.873

Traffic Data Service

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File Name : 11PM FINAL
Site Code : 00000011
Start Date : 11/17/2015
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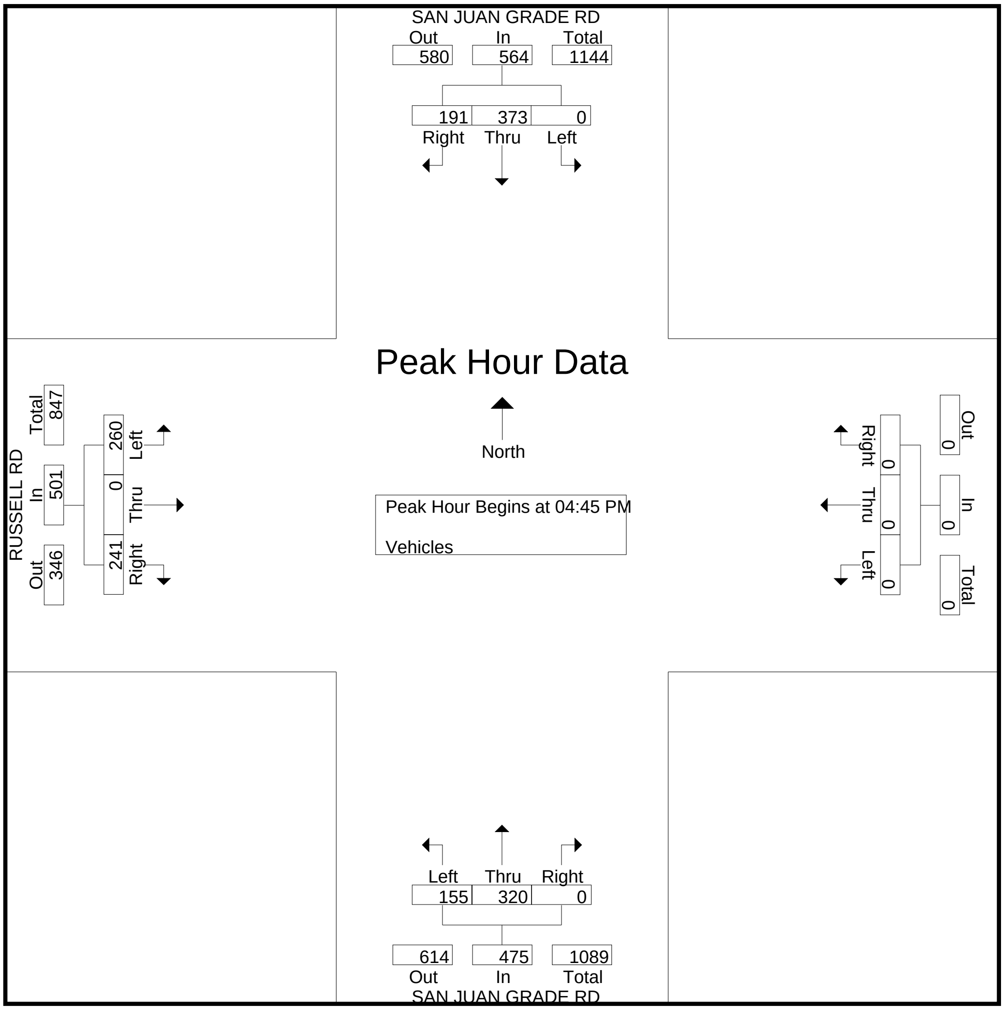

Traffic Data Service

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File Name : 12PM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	8	76	0	0	84	0	0	0	0	0	0	39	29	0	68	28	0	5	0	33	185
04:15 PM	9	46	0	0	55	0	0	0	0	0	0	37	23	0	60	30	0	8	0	38	153
04:30 PM	19	84	0	0	103	0	0	0	0	0	0	28	29	0	57	45	0	13	0	58	218
04:45 PM	16	80	0	0	96	0	0	0	0	0	0	44	22	0	66	57	0	17	0	74	236
Total	52	286	0	0	338	0	0	0	0	0	0	148	103	0	251	160	0	43	0	203	792
05:00 PM	17	120	0	0	137	0	0	0	0	0	0	26	25	0	51	73	0	12	0	85	273
05:15 PM	16	82	0	0	98	0	0	0	0	0	0	35	29	0	64	64	0	26	0	90	252
05:30 PM	18	73	0	0	91	0	0	0	0	0	0	41	23	0	64	55	0	16	0	71	226
05:45 PM	7	59	0	0	66	0	0	0	0	0	0	20	22	0	42	35	0	12	0	47	155
Total	58	334	0	0	392	0	0	0	0	0	0	122	99	0	221	227	0	66	0	293	906
Grand Total	110	620	0	0	730	0	0	0	0	0	0	270	202	0	472	387	0	109	0	496	1698
Apprch %	15.1	84.9	0	0		0	0	0	0		0	57.2	42.8	0		78	0	22	0		
Total %	6.5	36.5	0	0	43	0	0	0	0	0	0	15.9	11.9	0	27.8	22.8	0	6.4	0	29.2	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	16	80	0	96	0	0	0	0	0	**44**	22	**66**	57	0	17	74	236
05:00 PM	17	**120**	0	**137**	0	0	0	0	0	26	25	51	**73**	0	12	85	**273**
05:15 PM	16	82	0	98	0	0	0	0	0	35	**29**	64	64	0	**26**	**90**	252
05:30 PM	**18**	73	0	91	0	0	0	0	0	41	23	64	55	0	16	71	226
Total Volume	67	355	0	422	0	0	0	0	0	146	99	245	249	0	71	320	987
% App. Total	15.9	84.1	0		0	0	0		0	59.6	40.4		77.8	0	22.2		
PHF	.931	.740	.000	.770	.000	.000	.000	.000	.000	.830	.853	.928	.853	.000	.683	.889	.904

Traffic Data Service

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File Name : 12PM FINAL
Site Code : 00000012
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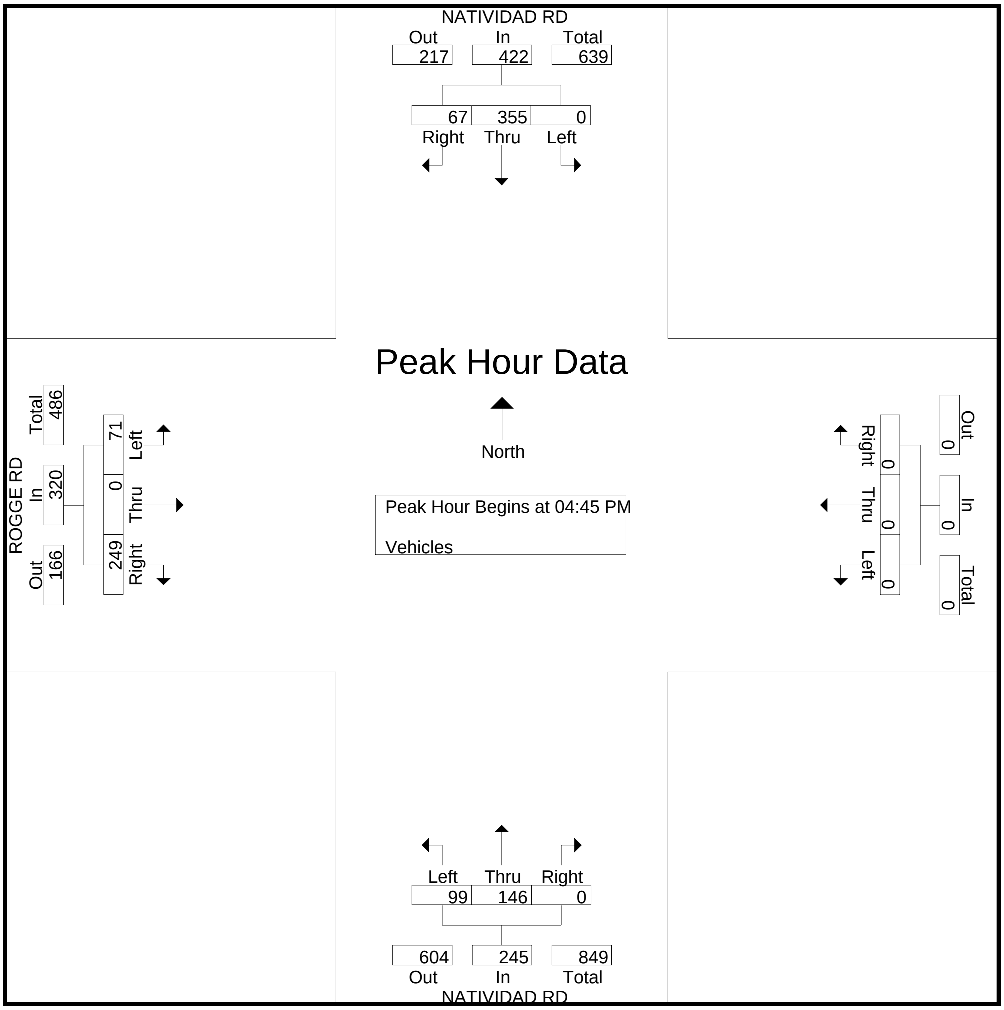

Traffic Data Service

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File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/18/2015

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	6	104	0	0	110	0	0	0	0	0	0	105	26	0	131	24	0	0	0	24	265
04:15 PM	2	108	0	0	110	0	0	0	0	0	0	110	37	0	147	19	0	3	0	22	279
04:30 PM	2	110	0	0	112	0	0	0	0	0	0	87	36	0	123	22	0	2	0	24	259
04:45 PM	1	146	0	0	147	0	0	0	0	0	0	95	31	0	126	33	0	1	0	34	307
Total	11	468	0	0	479	0	0	0	0	0	0	397	130	0	527	98	0	6	0	104	1110
05:00 PM	9	175	0	0	184	0	0	0	0	0	0	101	42	0	143	35	0	2	0	37	364
05:15 PM	6	162	0	0	168	0	0	0	0	0	0	109	37	0	146	33	0	3	0	36	350
05:30 PM	3	148	0	0	151	0	0	0	0	0	0	117	37	0	154	35	0	0	0	35	340
05:45 PM	1	109	0	0	110	0	0	0	0	0	0	103	32	0	135	22	0	3	0	25	270
Total	19	594	0	0	613	0	0	0	0	0	0	430	148	0	578	125	0	8	0	133	1324
Grand Total	30	1062	0	0	1092	0	0	0	0	0	0	827	278	0	1105	223	0	14	0	237	2434
Apprch %	2.7	97.3	0	0		0	0	0	0		0	74.8	25.2	0		94.1	0	5.9	0		
Total %	1.2	43.6	0	0	44.9	0	0	0	0	0	0	34	11.4	0	45.4	9.2	0	0.6	0	9.7	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				VAN BUREN AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	146	0	147	0	0	0	0	0	95	31	126	33	0	1	34	307
05:00 PM	**9**	**175**	0	**184**	0	0	0	0	0	101	**42**	143	**35**	0	2	**37**	**364**
05:15 PM	6	162	0	168	0	0	0	0	0	109	37	146	33	0	**3**	36	350
05:30 PM	3	148	0	151	0	0	0	0	0	**117**	37	**154**	35	0	0	35	340
Total Volume	19	631	0	650	0	0	0	0	0	422	147	569	136	0	6	142	1361
% App. Total	2.9	97.1	0		0	0	0		0	74.2	25.8		95.8	0	4.2		
PHF	.528	.901	.000	.883	.000	.000	.000	.000	.000	.902	.875	.924	.971	.000	.500	.959	.935

Traffic Data Service

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File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/18/2015
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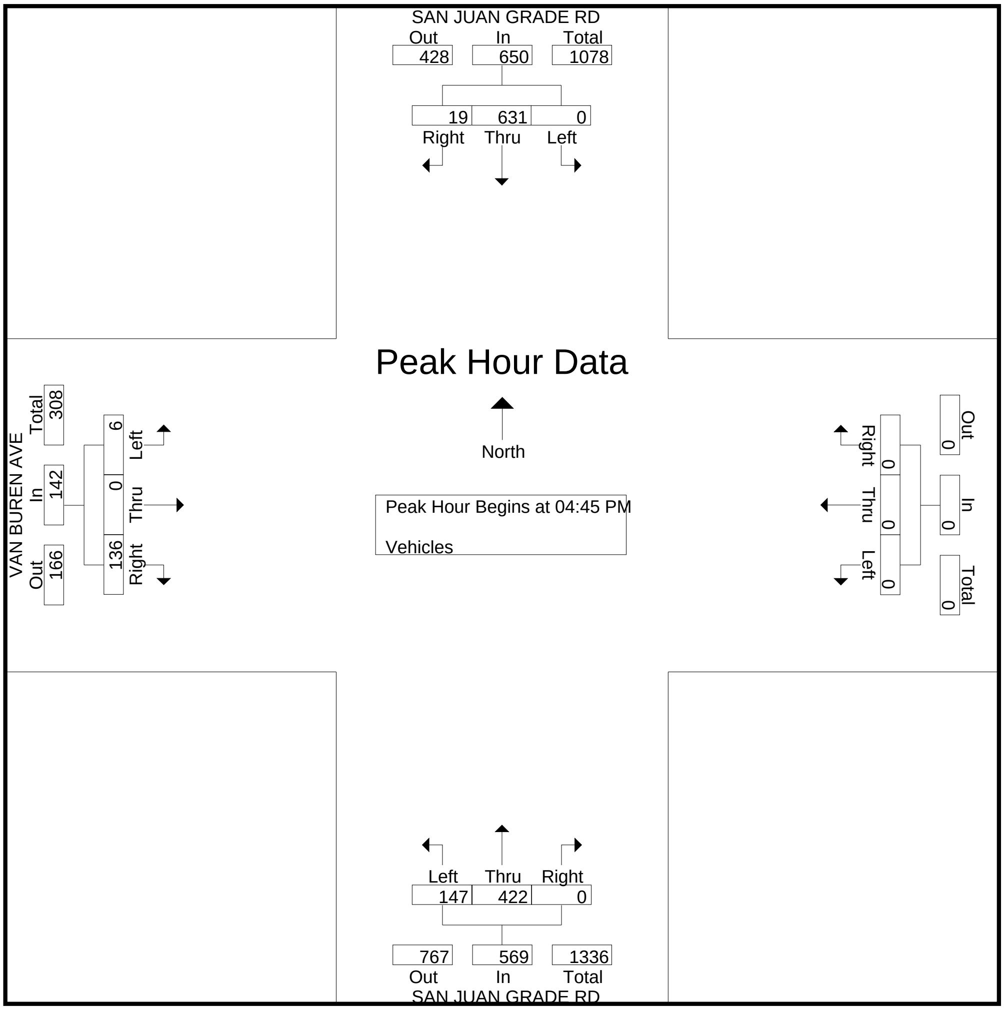

Traffic Data Service

Campbell, CA
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tdsbay@cs.com

File Name : 15PM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					US-101 SB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	46	0	144	4	194	125	174	0	0	299	0	0	0	0	0	37	159	0	0	196	689
04:15 PM	44	0	130	0	174	130	143	0	0	273	0	0	0	0	0	45	162	0	0	207	654
04:30 PM	27	0	134	0	161	143	140	0	0	283	0	0	0	0	0	41	169	0	0	210	654
04:45 PM	48	1	109	0	158	148	156	0	0	304	0	0	0	0	0	38	196	0	0	234	696
Total	165	1	517	4	687	546	613	0	0	1159	0	0	0	0	0	161	686	0	0	847	2693
05:00 PM	42	1	124	0	167	143	148	0	0	291	0	0	0	0	0	47	228	0	0	275	733
05:15 PM	36	0	155	0	191	144	152	0	0	296	0	0	0	2	2	58	181	0	0	239	728
05:30 PM	40	0	146	0	186	149	138	0	0	287	0	0	0	1	1	48	199	0	0	247	721
05:45 PM	39	0	133	0	172	142	138	0	0	280	0	0	0	0	0	51	174	0	0	225	677
Total	157	1	558	0	716	578	576	0	0	1154	0	0	0	3	3	204	782	0	0	986	2859
Grand Total	322	2	1075	4	1403	1124	1189	0	0	2313	0	0	0	3	3	365	1468	0	0	1833	5552
Apprch %	23	0.1	76.6	0.3		48.6	51.4	0	0		0	0	0	100		19.9	80.1	0	0		
Total %	5.8	0	19.4	0.1	25.3	20.2	21.4	0	0	41.7	0	0	0	0.1	0.1	6.6	26.4	0	0	33	

	US-101 SB RAMPS Southbound				BORONDA RD Westbound				US-101 SB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**48**	**1**	109	158	148	**156**	0	**304**	0	0	0	0	38	196	0	234	696
05:00 PM	42	1	124	167	143	148	0	291	0	0	0	0	47	**228**	0	**275**	**733**
05:15 PM	36	0	**155**	**191**	144	152	0	296	0	0	0	0	**58**	181	0	239	726
05:30 PM	40	0	146	186	**149**	138	0	287	0	0	0	0	48	199	0	247	720
Total Volume	166	2	534	702	584	594	0	1178	0	0	0	0	191	804	0	995	2875
% App. Total	23.6	0.3	76.1		49.6	50.4	0		0	0	0		19.2	80.8	0		
PHF	.865	.500	.861	.919	.980	.952	.000	.969	.000	.000	.000	.000	.823	.882	.000	.905	.981

Traffic Data Service

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File Name : 15PM FINAL
Site Code : 00000015
Start Date : 1/14/2016
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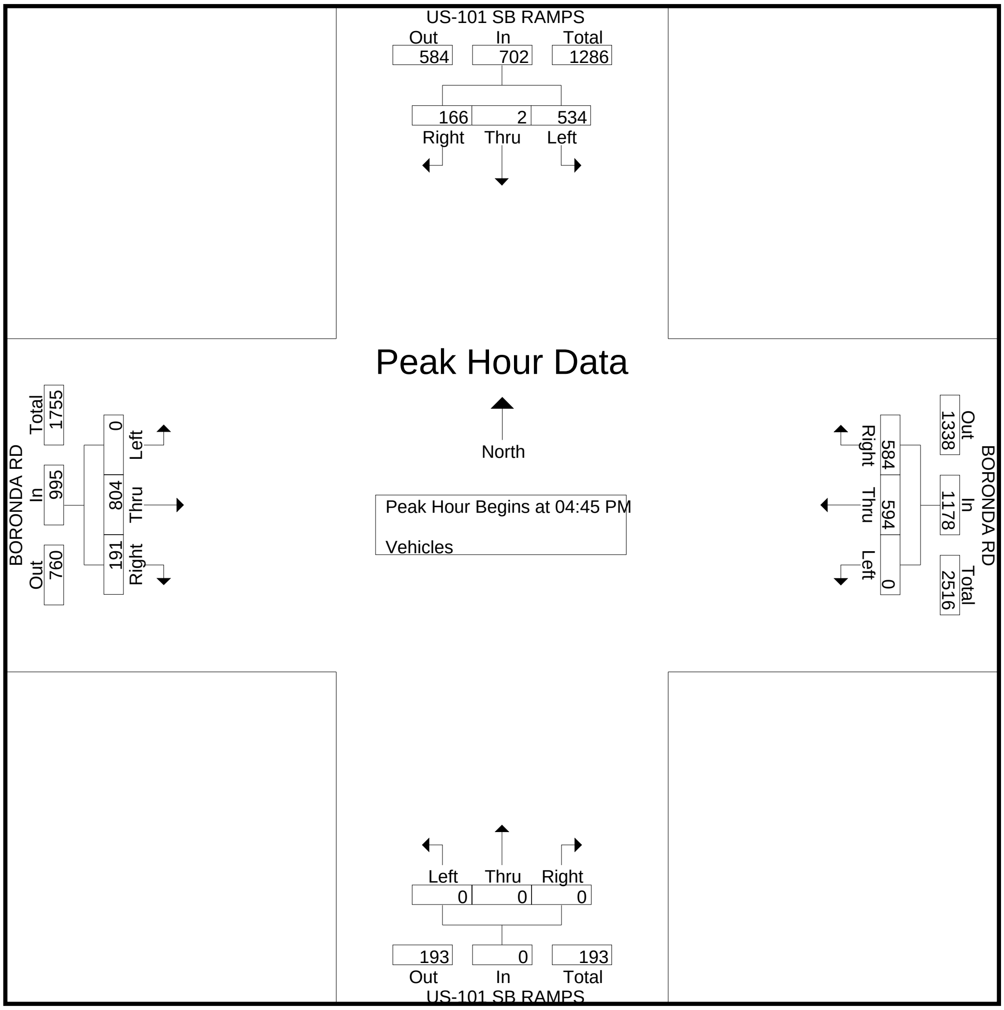

Traffic Data Service

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File Name : 16PM FINAL
Site Code : 00000016
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	US-101 NB RAMPS Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	109	248	0	0	357	206	0	43	0	249	41	275	0	0	316	922
04:15 PM	0	0	0	4	4	99	243	0	0	342	226	0	27	1	254	39	247	1	0	287	887
04:30 PM	0	0	0	0	0	91	254	0	0	345	203	0	30	0	233	49	280	0	0	329	907
04:45 PM	0	0	0	0	0	110	278	0	0	388	253	0	34	0	287	45	274	0	0	319	994
Total	0	0	0	4	4	409	1023	0	0	1432	888	0	134	1	1023	174	1076	1	0	1251	3710
05:00 PM	0	0	0	0	0	111	263	0	0	374	252	0	25	0	277	44	289	0	0	333	984
05:15 PM	0	0	0	0	0	113	259	0	0	372	276	0	27	0	303	35	319	1	0	355	1030
05:30 PM	0	0	0	0	0	117	271	0	0	388	214	0	17	0	231	29	326	0	0	355	974
05:45 PM	0	0	0	0	0	81	256	0	0	337	236	0	30	0	266	36	270	0	0	306	909
Total	0	0	0	0	0	422	1049	0	0	1471	978	0	99	0	1077	144	1204	1	0	1349	3897
Grand Total	0	0	0	4	4	831	2072	0	0	2903	1866	0	233	1	2100	318	2280	2	0	2600	7607
Apprch %	0	0	0	100		28.6	71.4	0	0		88.9	0	11.1	0		12.2	87.7	0.1	0		
Total %	0	0	0	0.1	0.1	10.9	27.2	0	0	38.2	24.5	0	3.1	0	27.6	4.2	30	0	0	34.2	

	US-101 NB RAMPS Southbound				BORONDA RD Westbound				US-101 NB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	110	**278**	0	**388**	253	0	**34**	287	**45**	274	0	319	994
05:00 PM	0	0	0	0	111	263	0	374	252	0	25	277	44	289	0	333	984
05:15 PM	0	0	0	0	113	259	0	372	**276**	0	27	**303**	35	319	**1**	**355**	**1030**
05:30 PM	0	0	0	0	**117**	271	0	388	214	0	17	231	29	**326**	0	355	974
Total Volume	0	0	0	0	451	1071	0	1522	995	0	103	1098	153	1208	1	1362	3982
% App. Total	0	0	0		29.6	70.4	0		90.6	0	9.4		11.2	88.7	0.1		
PHF	.000	.000	.000	.000	.964	.963	.000	.981	.901	.000	.757	.906	.850	.926	.250	.959	.967

Traffic Data Service

Campbell, CA

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File Name : 16PM FINAL
Site Code : 00000016
Start Date : 1/14/2016
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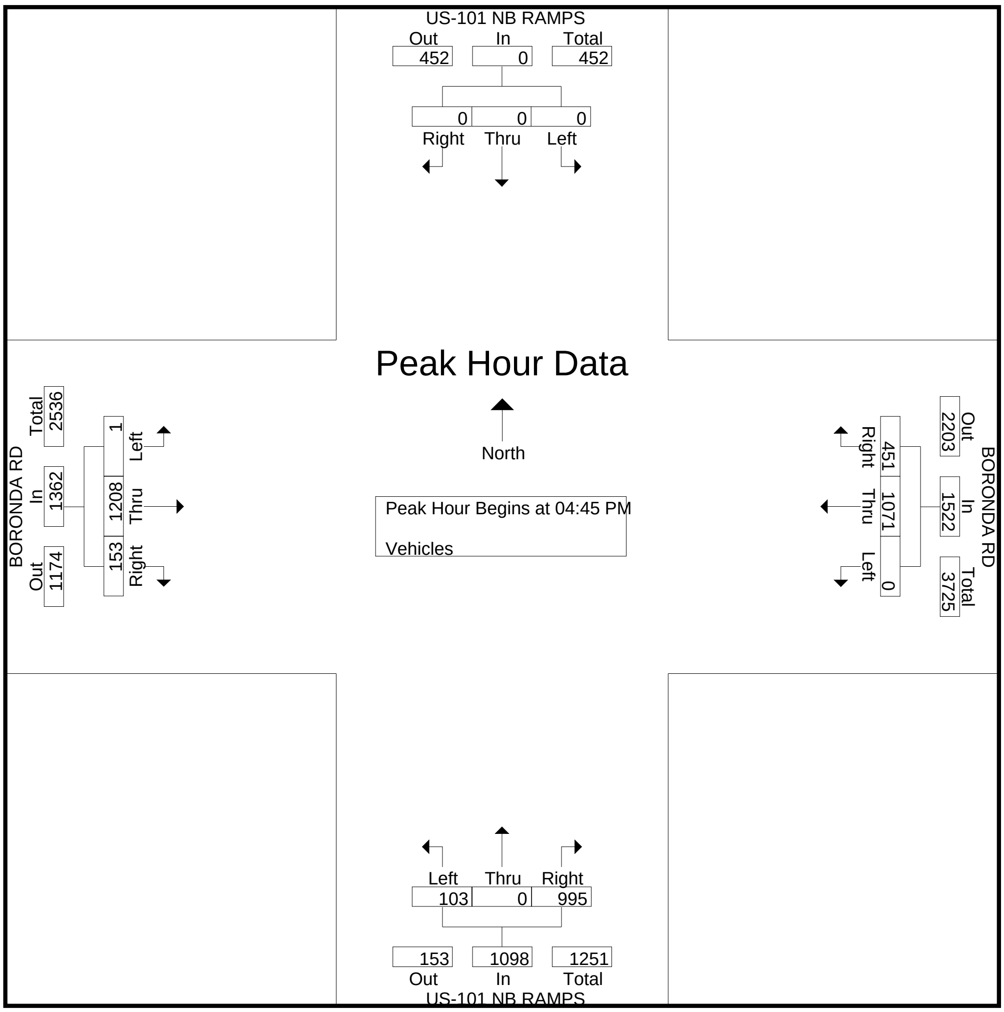

Traffic Data Service
Campbell, CA
(408) 377-2988
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File Name : 17PM FINAL
Site Code : 00000017
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E BORONDA RD Westbound					N MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	74	88	48	0	210	28	132	20	4	184	29	63	121	0	213	93	175	108	1	377	984
04:15 PM	61	77	34	3	175	28	151	9	2	190	28	90	136	0	254	100	163	117	2	382	1001
04:30 PM	85	66	44	1	196	38	134	18	2	192	13	65	112	3	193	97	191	91	3	382	963
04:45 PM	80	97	61	0	238	31	161	13	3	208	25	71	117	1	214	107	211	116	2	436	1096
Total	300	328	187	4	819	125	578	60	11	774	95	289	486	4	874	397	740	432	8	1577	4044
05:00 PM	75	91	66	0	232	39	116	12	1	168	29	65	159	0	253	91	171	114	3	379	1032
05:15 PM	84	107	51	2	244	36	143	16	4	199	24	72	130	1	227	113	270	156	3	542	1212
05:30 PM	87	81	52	0	220	27	117	15	0	159	19	90	156	0	265	129	205	134	1	469	1113
05:45 PM	89	94	56	0	239	36	88	13	0	137	24	62	119	0	205	100	191	128	0	419	1000
Total	335	373	225	2	935	138	464	56	5	663	96	289	564	1	950	433	837	532	7	1809	4357
Grand Total	635	701	412	6	1754	263	1042	116	16	1437	191	578	1050	5	1824	830	1577	964	15	3386	8401
Apprch %	36.2	40	23.5	0.3		18.3	72.5	8.1	1.1		10.5	31.7	57.6	0.3		24.5	46.6	28.5	0.4		
Total %	7.6	8.3	4.9	0.1	20.9	3.1	12.4	1.4	0.2	17.1	2.3	6.9	12.5	0.1	21.7	9.9	18.8	11.5	0.2	40.3	

	N MAIN ST Southbound				E BORONDA RD Westbound				N MAIN ST Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	80	97	61	238	31	**161**	13	**205**	25	71	117	213	107	211	116	434	1090
05:00 PM	75	91	**66**	232	**39**	116	12	167	**29**	65	**159**	253	91	171	114	376	1028
05:15 PM	84	**107**	51	**242**	36	143	**16**	195	24	72	130	226	113	**270**	**156**	**539**	**1202**
05:30 PM	**87**	81	52	220	27	117	15	159	19	**90**	156	**265**	**129**	205	134	468	1112
Total Volume	326	376	230	932	133	537	56	726	97	298	562	957	440	857	520	1817	4432
% App. Total	35	40.3	24.7		18.3	74	7.7		10.1	31.1	58.7		24.2	47.2	28.6		
PHF	.937	.879	.871	.963	.853	.834	.875	.885	.836	.828	.884	.903	.853	.794	.833	.843	.922

Traffic Data Service

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File Name : 17PM FINAL
Site Code : 00000017
Start Date : 1/14/2016
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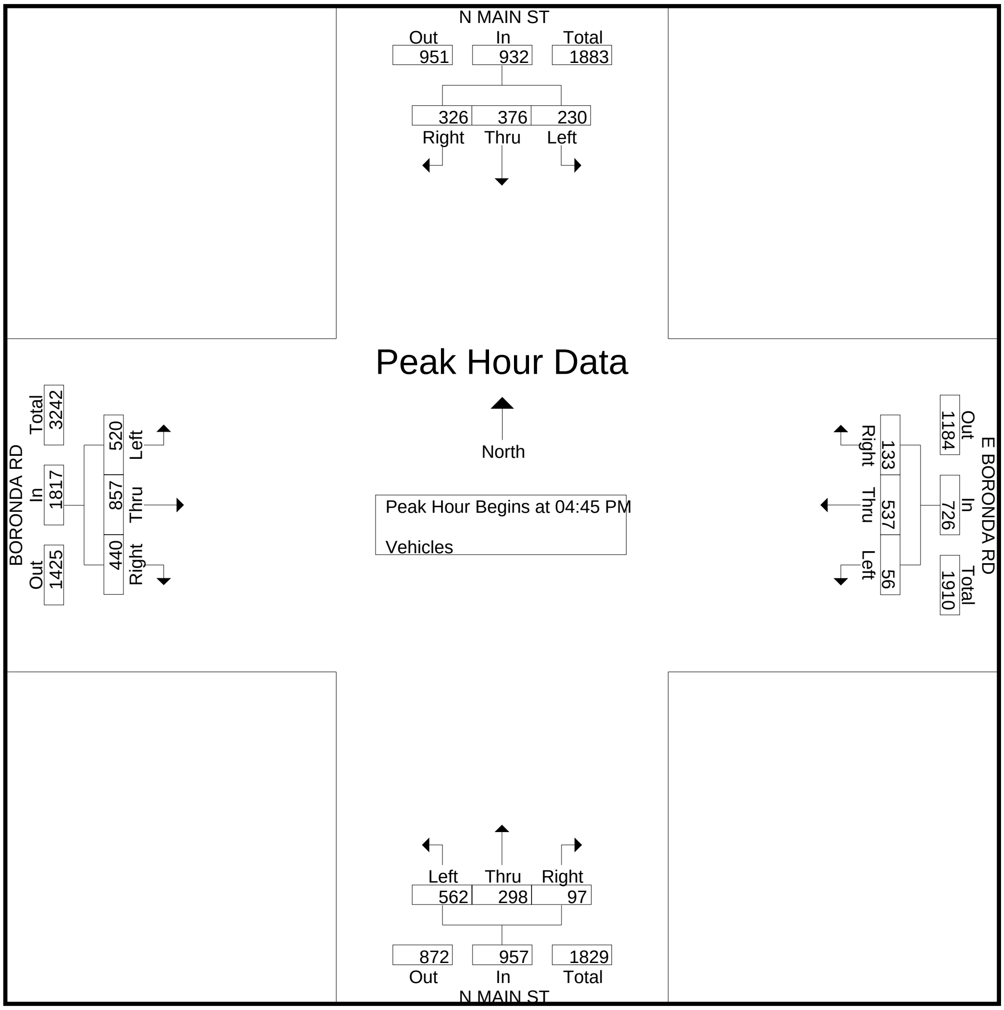

Traffic Data Service

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File Name : 18PM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					SAN JUAN GRADE RD Westbound					N MAIN ST Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	177	13	1	195	14	15	52	1	82	65	118	23	4	210	17	15	11	0	43	530
04:15 PM	6	179	12	0	197	13	13	52	8	86	62	129	18	1	210	18	17	8	0	43	536
04:30 PM	1	208	19	3	231	11	16	54	4	85	69	140	22	3	234	24	6	12	1	43	593
04:45 PM	5	219	23	1	248	14	16	64	1	95	62	143	27	3	235	11	13	9	1	34	612
Total	16	783	67	5	871	52	60	222	14	348	258	530	90	11	889	70	51	40	2	163	2271
05:00 PM	5	199	14	2	220	12	9	68	3	92	62	144	29	4	239	25	16	9	0	50	601
05:15 PM	3	234	19	0	256	15	14	101	2	132	68	149	29	0	246	18	20	13	1	52	686
05:30 PM	2	240	19	0	261	15	27	57	1	100	60	169	29	3	261	17	12	8	0	37	659
05:45 PM	3	207	16	2	228	11	17	52	2	82	84	140	41	0	265	22	10	12	1	45	620
Total	13	880	68	4	965	53	67	278	8	406	274	602	128	7	1011	82	58	42	2	184	2566
Grand Total	29	1663	135	9	1836	105	127	500	22	754	532	1132	218	18	1900	152	109	82	4	347	4837
Apprch %	1.6	90.6	7.4	0.5		13.9	16.8	66.3	2.9		28	59.6	11.5	0.9		43.8	31.4	23.6	1.2		
Total %	0.6	34.4	2.8	0.2	38	2.2	2.6	10.3	0.5	15.6	11	23.4	4.5	0.4	39.3	3.1	2.3	1.7	0.1	7.2	

	N MAIN ST Southbound				SAN JUAN GRADE RD Westbound				N MAIN ST Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**5**	199	14	218	12	9	68	89	62	144	29	235	**25**	16	9	50	592
05:15 PM	3	234	**19**	256	**15**	14	**101**	**130**	68	149	29	246	18	**20**	**13**	**51**	**683**
05:30 PM	2	**240**	19	**261**	15	**27**	57	99	60	**169**	29	258	17	12	8	37	655
05:45 PM	3	207	16	226	11	17	52	80	**84**	140	**41**	**265**	22	10	12	44	615
Total Volume	13	880	68	961	53	67	278	398	274	602	128	1004	82	58	42	182	2545
% App. Total	1.4	91.6	7.1		13.3	16.8	69.8		27.3	60	12.7		45.1	31.9	23.1		
PHF	.650	.917	.895	.920	.883	.620	.688	.765	.815	.891	.780	.947	.820	.725	.808	.892	.932

Traffic Data Service

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File Name : 18PM FINAL
Site Code : 00000018
Start Date : 11/18/2015
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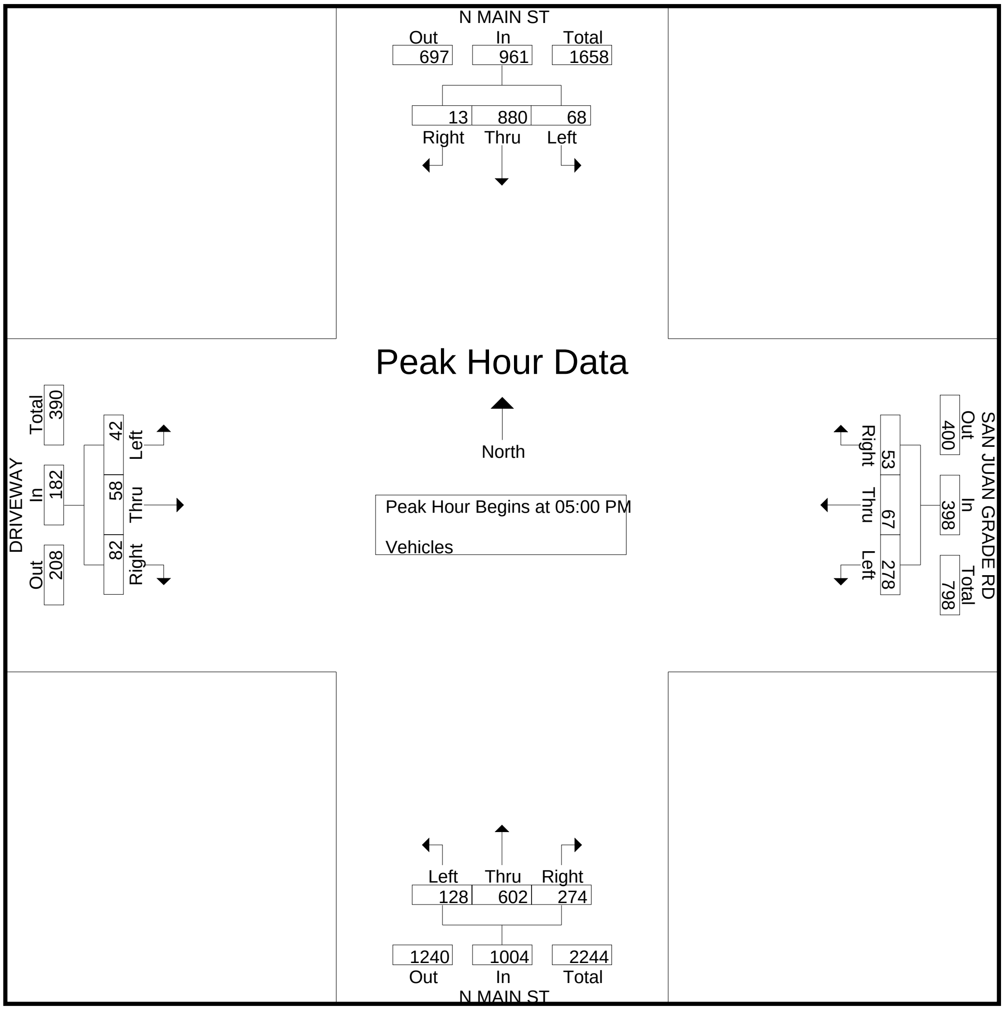

Traffic Data Service

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File Name : 19PM FINAL
Site Code : 00000019
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					E BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	49	47	65	0	161	35	97	17	0	149	9	59	44	0	112	16	185	51	2	254	676
04:15 PM	46	40	49	0	135	48	123	20	2	193	26	58	50	4	138	18	213	45	2	278	744
04:30 PM	41	48	72	0	161	45	116	25	2	188	17	58	50	1	126	26	198	40	2	266	741
04:45 PM	42	64	89	0	195	40	117	23	2	182	31	56	42	9	138	23	222	53	3	301	816
Total	178	199	275	0	652	168	453	85	6	712	83	231	186	14	514	83	818	189	9	1099	2977
05:00 PM	56	58	93	0	207	49	99	29	1	178	15	64	35	1	115	21	235	56	0	312	812
05:15 PM	59	73	107	0	239	40	131	31	0	202	25	70	48	3	146	23	235	50	1	309	896
05:30 PM	48	58	93	0	199	53	97	37	2	189	16	69	49	1	135	20	220	63	3	306	829
05:45 PM	45	40	75	0	160	47	109	27	2	185	7	75	41	0	123	22	221	43	0	286	754
Total	208	229	368	0	805	189	436	124	5	754	63	278	173	5	519	86	911	212	4	1213	3291
Grand Total	386	428	643	0	1457	357	889	209	11	1466	146	509	359	19	1033	169	1729	401	13	2312	6268
Apprch %	26.5	29.4	44.1	0		24.4	60.6	14.3	0.8		14.1	49.3	34.8	1.8		7.3	74.8	17.3	0.6		
Total %	6.2	6.8	10.3	0	23.2	5.7	14.2	3.3	0.2	23.4	2.3	8.1	5.7	0.3	16.5	2.7	27.6	6.4	0.2	36.9	

	SAN JUAN GRADE RD Southbound				E BORONDA RD Westbound				SAN JUAN GRADE RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	42	64	89	195	40	117	23	180	**31**	56	42	129	**23**	222	53	298	802
05:00 PM	56	58	93	207	49	99	29	177	15	64	35	114	21	**235**	56	**312**	810
05:15 PM	**59**	**73**	**107**	**239**	40	**131**	31	**202**	25	**70**	48	**143**	23	235	50	308	**892**
05:30 PM	48	58	93	199	**53**	97	**37**	187	16	69	**49**	134	20	220	**63**	303	823
Total Volume	205	253	382	840	182	444	120	746	87	259	174	520	87	912	222	1221	3327
% App. Total	24.4	30.1	45.5		24.4	59.5	16.1		16.7	49.8	33.5		7.1	74.7	18.2		
PHF	.869	.866	.893	.879	.858	.847	.811	.923	.702	.925	.888	.909	.946	.970	.881	.978	.932

Traffic Data Service

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File Name : 19PM FINAL
Site Code : 00000019
Start Date : 11/18/2015
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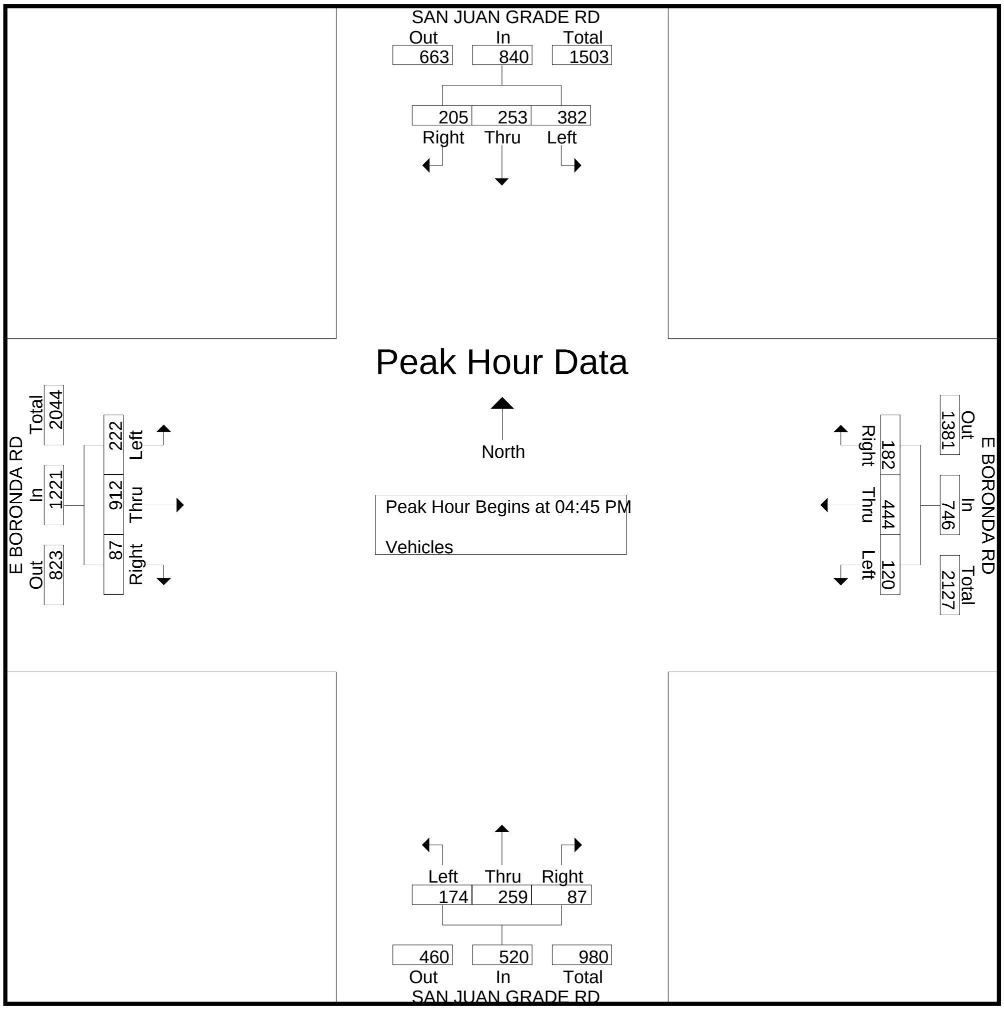

Traffic Data Service

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File Name : 20PM FINAL
Site Code : 00000020
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	MCKINNON ST Southbound					E BORONDA RD Westbound					MCKINNON ST Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	3	1	0	8	1	172	17	0	190	4	2	49	2	57	64	191	1	0	256	511
04:15 PM	3	2	0	0	5	0	174	18	0	192	5	0	36	4	45	94	197	1	0	292	534
04:30 PM	2	1	0	0	3	0	194	26	0	220	8	1	51	3	63	83	211	0	0	294	580
04:45 PM	5	1	1	0	7	0	167	23	1	191	11	2	57	2	72	103	217	1	0	321	591
Total	14	7	2	0	23	1	707	84	1	793	28	5	193	11	237	344	816	3	0	1163	2216
05:00 PM	3	3	1	0	7	0	185	24	0	209	2	0	40	0	42	88	225	0	0	313	571
05:15 PM	2	0	0	0	2	1	202	11	1	215	14	0	35	3	52	106	255	0	0	361	630
05:30 PM	1	0	0	0	1	0	195	18	0	213	10	0	46	0	56	121	230	0	0	351	621
05:45 PM	0	0	0	0	0	1	176	9	0	186	8	0	54	0	62	89	214	0	1	304	552
Total	6	3	1	0	10	2	758	62	1	823	34	0	175	3	212	404	924	0	1	1329	2374
Grand Total	20	10	3	0	33	3	1465	146	2	1616	62	5	368	14	449	748	1740	3	1	2492	4590
Apprch %	60.6	30.3	9.1	0		0.2	90.7	9	0.1		13.8	1.1	82	3.1		30	69.8	0.1	0		
Total %	0.4	0.2	0.1	0	0.7	0.1	31.9	3.2	0	35.2	1.4	0.1	8	0.3	9.8	16.3	37.9	0.1	0	54.3	

	MCKINNON ST Southbound				E BORONDA RD Westbound				MCKINNON ST Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**5**	1	**1**	**7**	0	167	23	190	11	**2**	**57**	**70**	103	217	**1**	321	588
05:00 PM	3	**3**	1	7	0	185	**24**	209	2	0	40	42	88	225	0	313	571
05:15 PM	2	0	0	2	**1**	**202**	11	**214**	**14**	0	35	49	106	**255**	0	**361**	**626**
05:30 PM	1	0	0	1	0	195	18	213	10	0	46	56	**121**	230	0	351	621
Total Volume	11	4	2	17	1	749	76	826	37	2	178	217	418	927	1	1346	2406
% App. Total	64.7	23.5	11.8		0.1	90.7	9.2		17.1	0.9	82		31.1	68.9	0.1		
PHF	.550	.333	.500	.607	.250	.927	.792	.965	.661	.250	.781	.775	.864	.909	.250	.932	.961

Traffic Data Service

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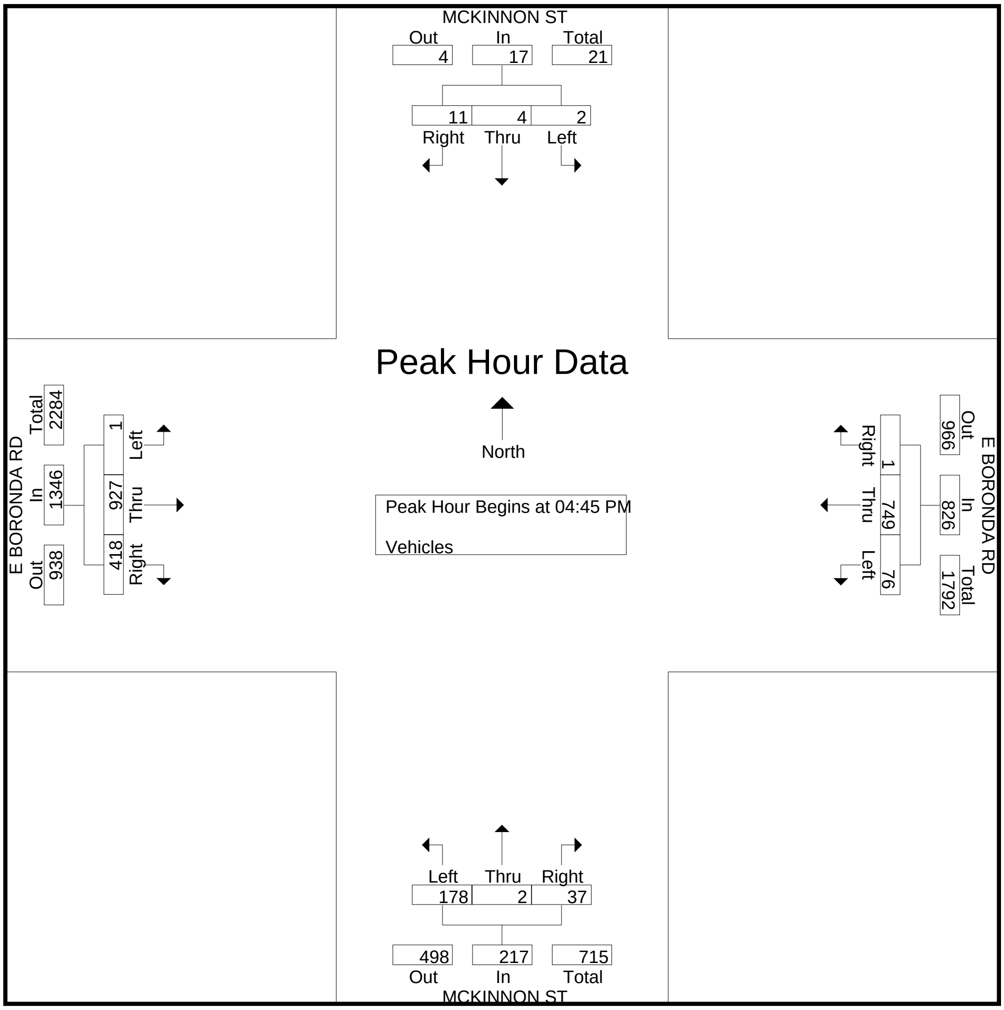
File Name : 20PM FINAL
Site Code : 00000020
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

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File Name : 21PM FINAL
Site Code : 00000021
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					EL DORADO DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	174	16	0	190	18	0	22	3	43	32	176	0	0	208	441
04:15 PM	0	0	0	0	0	0	158	16	0	174	17	0	30	2	49	36	143	0	0	179	402
04:30 PM	0	0	0	0	0	0	196	14	0	210	21	0	27	7	55	34	204	0	0	238	503
04:45 PM	0	0	0	0	0	0	162	7	0	169	15	0	29	0	44	30	209	0	0	239	452
Total	0	0	0	0	0	0	690	53	0	743	71	0	108	12	191	132	732	0	0	864	1798
05:00 PM	0	0	0	0	0	0	184	12	0	196	24	0	21	2	47	52	161	0	0	213	456
05:15 PM	0	0	0	0	0	0	179	14	0	193	16	0	40	0	56	55	188	0	0	243	492
05:30 PM	0	0	0	0	0	0	190	19	0	209	17	0	24	1	42	82	155	0	0	237	488
05:45 PM	0	0	0	0	0	0	148	15	0	163	23	0	42	0	65	62	174	0	0	236	464
Total	0	0	0	0	0	0	701	60	0	761	80	0	127	3	210	251	678	0	0	929	1900
Grand Total	0	0	0	0	0	0	1391	113	0	1504	151	0	235	15	401	383	1410	0	0	1793	3698
Apprch %	0	0	0	0		0	92.5	7.5	0		37.7	0	58.6	3.7		21.4	78.6	0	0		
Total %	0	0	0	0	0	0	37.6	3.1	0	40.7	4.1	0	6.4	0.4	10.8	10.4	38.1	0	0	48.5	

	Southbound				E BORONDA RD Westbound				EL DORADO DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	184	12	196	**24**	0	21	45	52	161	0	213	454
05:15 PM	0	0	0	0	0	179	14	193	16	0	40	56	55	**188**	0	**243**	**492**
05:30 PM	0	0	0	0	0	**190**	**19**	**209**	17	0	24	41	**82**	155	0	237	487
05:45 PM	0	0	0	0	0	148	15	163	23	0	**42**	**65**	62	174	0	236	464
Total Volume	0	0	0	0	0	701	60	761	80	0	127	207	251	678	0	929	1897
% App. Total	0	0	0		0	92.1	7.9		38.6	0	61.4		27	73	0		
PHF	.000	.000	.000	.000	.000	.922	.789	.910	.833	.000	.756	.796	.765	.902	.000	.956	.964

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File Name : 21PM FINAL
Site Code : 00000021
Start Date : 11/18/2015
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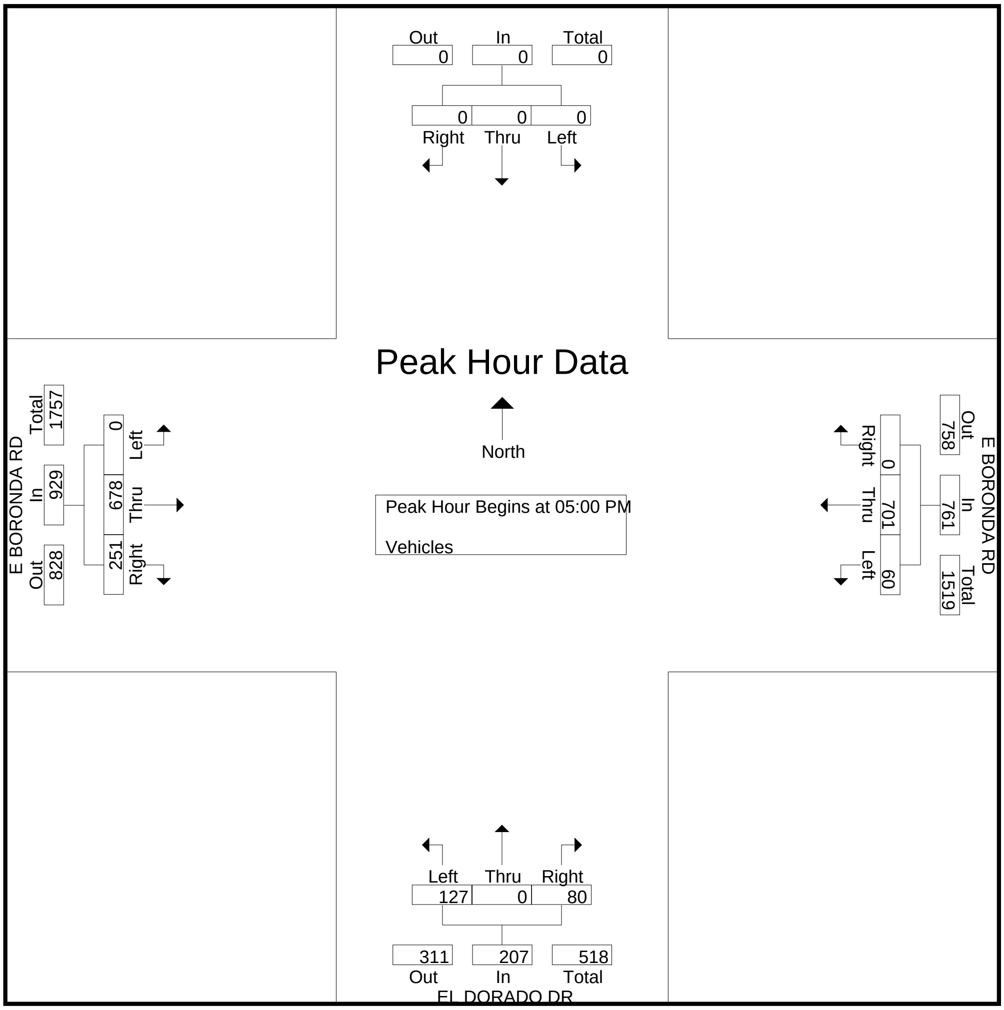

Traffic Data Service

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File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					E BORONDA RD Westbound					NATIVIDAD RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	7	31	61	0	99	22	170	50	0	242	74	34	43	1	152	33	186	5	0	224	717
04:15 PM	4	24	37	0	65	26	151	36	0	213	76	27	23	5	131	31	160	6	0	197	606
04:30 PM	8	59	68	0	135	32	152	51	0	235	73	25	28	0	126	29	150	5	0	184	680
04:45 PM	12	66	65	0	143	24	165	44	0	233	78	28	22	4	132	19	186	6	0	211	719
Total	31	180	231	0	442	104	638	181	0	923	301	114	116	10	541	112	682	22	0	816	2722
05:00 PM	6	77	78	0	161	21	165	60	0	246	95	26	26	0	147	28	173	5	0	206	760
05:15 PM	11	72	85	0	168	33	164	55	0	252	119	30	36	0	185	16	182	1	0	199	804
05:30 PM	6	68	64	0	138	33	152	42	0	227	104	34	31	0	169	17	162	3	0	182	716
05:45 PM	2	44	61	0	107	14	167	55	0	236	107	23	17	0	147	32	172	3	0	207	697
Total	25	261	288	0	574	101	648	212	0	961	425	113	110	0	648	93	689	12	0	794	2977
Grand Total	56	441	519	0	1016	205	1286	393	0	1884	726	227	226	10	1189	205	1371	34	0	1610	5699
Apprch %	5.5	43.4	51.1	0		10.9	68.3	20.9	0		61.1	19.1	19	0.8		12.7	85.2	2.1	0		
Total %	1	7.7	9.1	0	17.8	3.6	22.6	6.9	0	33.1	12.7	4	4	0.2	20.9	3.6	24.1	0.6	0	28.3	

	NATIVIDAD RD Southbound				E BORONDA RD Westbound				NATIVIDAD RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**12**	66	65	143	24	**165**	44	233	78	28	22	128	19	**186**	**6**	**211**	715
05:00 PM	6	**77**	78	161	21	165	**60**	246	95	26	26	147	**28**	173	5	206	760
05:15 PM	11	72	**85**	**168**	**33**	164	55	**252**	**119**	30	**36**	**185**	16	182	1	199	**804**
05:30 PM	6	68	64	138	33	152	42	227	104	**34**	31	169	17	162	3	182	716
Total Volume	35	283	292	610	111	646	201	958	396	118	115	629	80	703	15	798	2995
% App. Total	5.7	46.4	47.9		11.6	67.4	21		63	18.8	18.3		10	88.1	1.9		
PHF	.729	.919	.859	.908	.841	.979	.838	.950	.832	.868	.799	.850	.714	.945	.625	.945	.931

Traffic Data Service

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File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/17/2015
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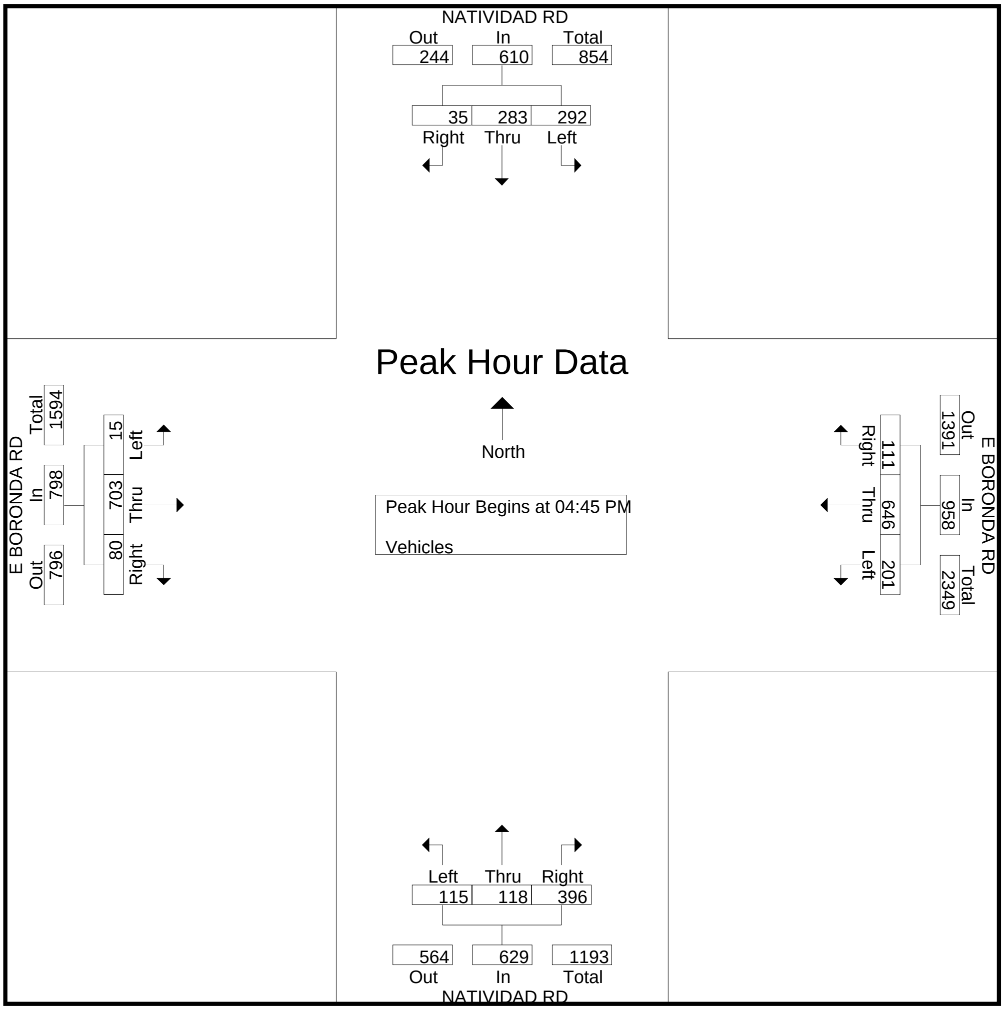

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File Name : 23PM FINAL
Site Code : 00000023
Start Date : 11/17/2015

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					INDEPENDENCE BLVD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	158	1	0	159	12	0	69	0	81	94	231	0	0	325	565
04:15 PM	0	0	0	0	0	0	131	4	0	135	16	0	75	0	91	79	196	0	0	275	501
04:30 PM	0	0	0	0	0	0	164	4	0	168	8	0	85	1	94	97	181	0	0	278	540
04:45 PM	0	0	0	0	0	0	178	1	0	179	10	0	57	2	69	104	223	0	0	327	575
Total	0	0	0	0	0	0	631	10	0	641	46	0	286	3	335	374	831	0	0	1205	2181
05:00 PM	0	0	0	0	0	0	181	3	0	184	4	0	73	1	78	103	239	0	0	342	604
05:15 PM	0	0	0	0	0	0	150	5	0	155	4	0	90	0	94	106	245	0	0	351	600
05:30 PM	0	0	0	0	0	0	163	6	0	169	17	0	91	0	108	117	215	0	0	332	609
05:45 PM	0	0	0	0	0	0	153	1	0	154	14	0	67	0	81	111	240	0	0	351	586
Total	0	0	0	0	0	0	647	15	0	662	39	0	321	1	361	437	939	0	0	1376	2399
Grand Total	0	0	0	0	0	0	1278	25	0	1303	85	0	607	4	696	811	1770	0	0	2581	4580
Apprch %	0	0	0	0		0	98.1	1.9	0		12.2	0	87.2	0.6		31.4	68.6	0	0		
Total %	0	0	0	0	0	0	27.9	0.5	0	28.4	1.9	0	13.3	0.1	15.2	17.7	38.6	0	0	56.4	

	Southbound				E BORONDA RD Westbound				INDEPENDENCE BLVD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	**181**	3	**184**	4	0	73	77	103	239	0	342	603
05:15 PM	0	0	0	0	0	150	5	155	4	0	90	94	106	**245**	0	**351**	600
05:30 PM	0	0	0	0	0	163	**6**	169	**17**	0	**91**	**108**	**117**	215	0	332	**609**
05:45 PM	0	0	0	0	0	153	1	154	14	0	67	81	111	240	0	351	586
Total Volume	0	0	0	0	0	647	15	662	39	0	321	360	437	939	0	1376	2398
% App. Total	0	0	0		0	97.7	2.3		10.8	0	89.2		31.8	68.2	0		
PHF	.000	.000	.000	.000	.000	.894	.625	.899	.574	.000	.882	.833	.934	.958	.000	.980	.984

Traffic Data Service

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File Name : 23PM FINAL
Site Code : 00000023
Start Date : 11/17/2015
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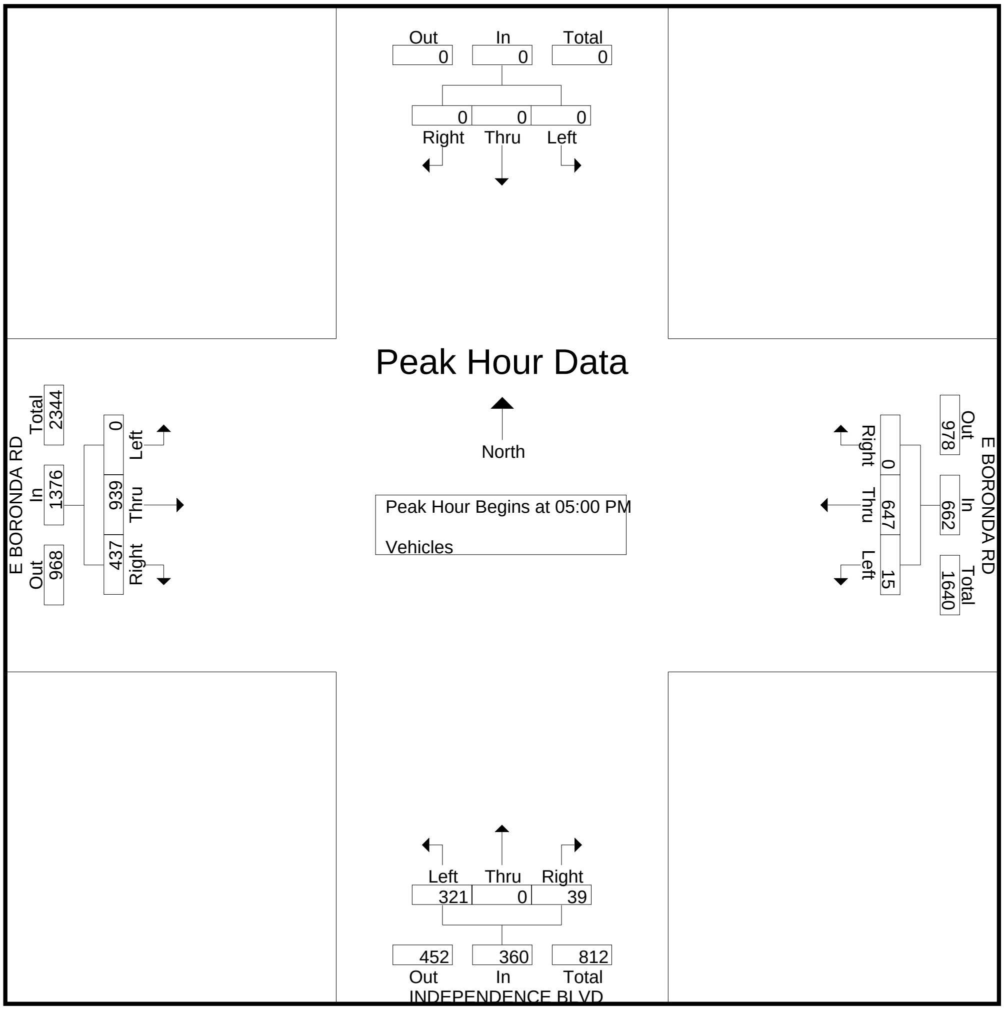

Traffic Data Service

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File Name : 24PM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					HEMINGWAY DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	137	10	0	147	5	0	28	1	34	41	197	0	0	238	419
04:15 PM	0	0	0	0	0	0	125	6	0	131	2	0	12	1	15	36	171	0	0	207	353
04:30 PM	0	0	0	0	0	0	147	4	0	151	3	0	18	2	23	32	153	0	0	185	359
04:45 PM	0	0	0	0	0	0	153	7	0	160	6	0	21	2	29	47	190	0	0	237	426
Total	0	0	0	0	0	0	562	27	0	589	16	0	79	6	101	156	711	0	0	867	1557
05:00 PM	0	0	0	0	0	0	165	10	0	175	5	0	17	0	22	43	198	0	0	241	438
05:15 PM	0	0	0	0	0	0	117	6	0	123	3	0	24	4	31	34	212	0	0	246	400
05:30 PM	0	0	0	0	0	0	166	4	0	170	1	0	14	2	17	45	193	0	0	238	425
05:45 PM	0	0	0	0	0	0	144	2	0	146	4	0	13	0	17	47	210	0	0	257	420
Total	0	0	0	0	0	0	592	22	0	614	13	0	68	6	87	169	813	0	0	982	1683
Grand Total	0	0	0	0	0	0	1154	49	0	1203	29	0	147	12	188	325	1524	0	0	1849	3240
Apprch %	0	0	0	0		0	95.9	4.1	0		15.4	0	78.2	6.4		17.6	82.4	0	0		
Total %	0	0	0	0	0	0	35.6	1.5	0	37.1	0.9	0	4.5	0.4	5.8	10	47	0	0	57.1	

	Southbound				E BORONDA RD Westbound				HEMINGWAY DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	153	7	160	**6**	0	21	**27**	**47**	190	0	237	424
05:00 PM	0	0	0	0	0	165	**10**	**175**	5	0	17	22	43	198	0	241	**438**
05:15 PM	0	0	0	0	0	117	6	123	3	0	**24**	27	34	**212**	0	**246**	396
05:30 PM	0	0	0	0	0	**166**	4	170	1	0	14	15	45	193	0	238	423
Total Volume	0	0	0	0	0	601	27	628	15	0	76	91	169	793	0	962	1681
% App. Total	0	0	0		0	95.7	4.3		16.5	0	83.5		17.6	82.4	0		
PHF	.000	.000	.000	.000	.000	.905	.675	.897	.625	.000	.792	.843	.899	.935	.000	.978	.959

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File Name : 24PM FINAL
Site Code : 00000024
Start Date : 11/17/2015
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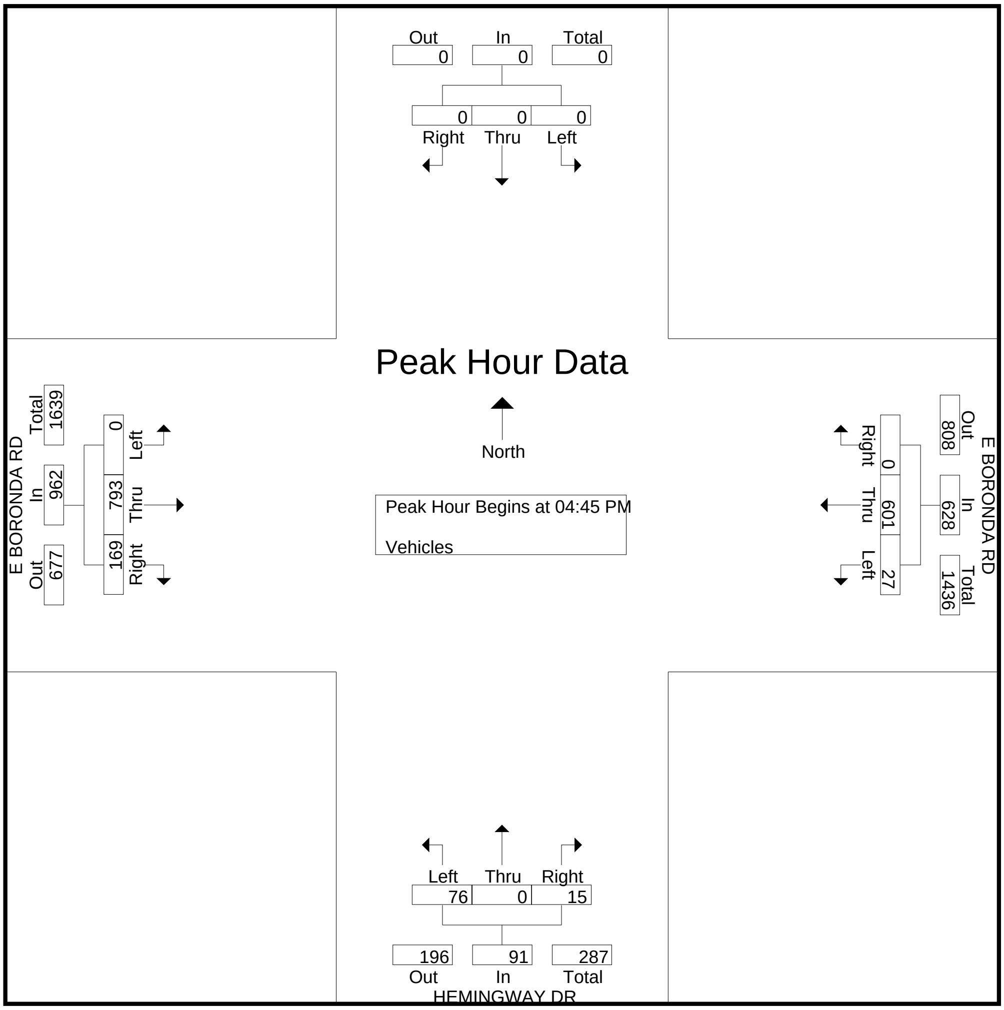

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File Name : 26PM FINAL
Site Code : 00000026
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E ALVIN DR Westbound					N MAIN ST Northbound					W ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	59	225	22	2	308	47	43	40	2	132	41	158	16	9	224	3	31	49	5	88	752
04:15 PM	50	231	27	0	308	44	30	46	3	123	56	188	22	3	269	8	38	38	0	84	784
04:30 PM	42	243	31	1	317	40	43	57	0	140	49	200	18	2	269	12	42	40	1	95	821
04:45 PM	50	220	32	1	303	53	46	57	0	156	55	193	28	4	280	6	39	53	5	103	842
Total	201	919	112	4	1236	184	162	200	5	551	201	739	84	18	1042	29	150	180	11	370	3199
05:00 PM	45	281	38	3	367	45	54	53	4	156	55	214	27	2	298	15	46	35	5	101	922
05:15 PM	46	261	53	2	362	45	34	42	4	125	66	232	34	7	339	23	65	60	4	152	978
05:30 PM	54	263	49	2	368	49	52	63	2	166	66	231	25	3	325	12	49	38	4	103	962
05:45 PM	48	258	56	1	363	56	46	43	3	148	64	224	32	3	323	22	52	56	1	131	965
Total	193	1063	196	8	1460	195	186	201	13	595	251	901	118	15	1285	72	212	189	14	487	3827
Grand Total	394	1982	308	12	2696	379	348	401	18	1146	452	1640	202	33	2327	101	362	369	25	857	7026
Apprch %	14.6	73.5	11.4	0.4		33.1	30.4	35	1.6		19.4	70.5	8.7	1.4		11.8	42.2	43.1	2.9		
Total %	5.6	28.2	4.4	0.2	38.4	5.4	5	5.7	0.3	16.3	6.4	23.3	2.9	0.5	33.1	1.4	5.2	5.3	0.4	12.2	

	N MAIN ST Southbound				E ALVIN DR Westbound				N MAIN ST Northbound				W ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	45	**281**	38	364	45	**54**	53	152	55	214	27	296	15	46	35	96	908
05:15 PM	46	261	53	360	45	34	42	121	**66**	**232**	**34**	**332**	**23**	**65**	**60**	**148**	**961**
05:30 PM	**54**	263	49	**366**	49	52	**63**	**164**	66	231	25	322	12	49	38	99	951
05:45 PM	48	258	**56**	362	**56**	46	43	145	64	224	32	320	22	52	56	130	957
Total Volume	193	1063	196	1452	195	186	201	582	251	901	118	1270	72	212	189	473	3777
% App. Total	13.3	73.2	13.5		33.5	32	34.5		19.8	70.9	9.3		15.2	44.8	40		
PHF	.894	.946	.875	.992	.871	.861	.798	.887	.951	.971	.868	.956	.783	.815	.788	.799	.983

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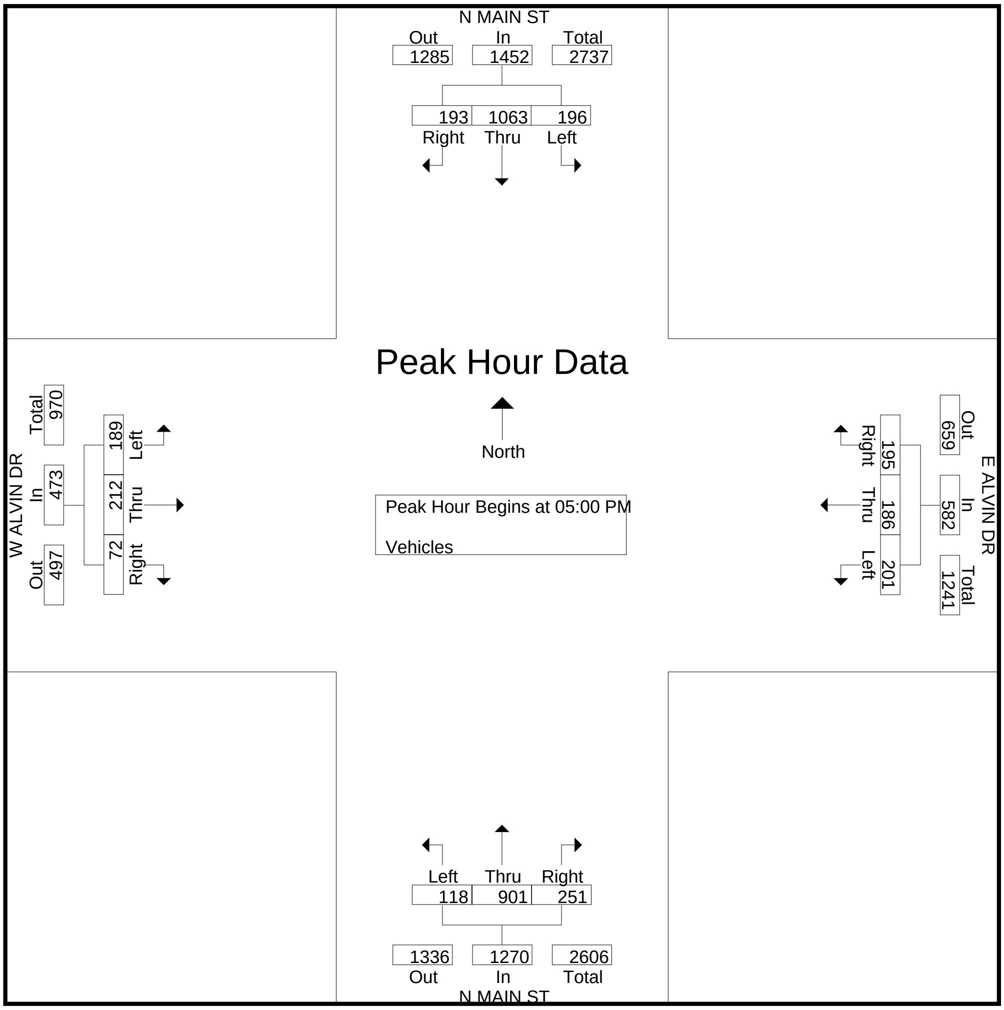
File Name : 26PM FINAL
Site Code : 00000026
Start Date : 11/18/2015
Page No : 2



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File Name : 27PM FINAL
Site Code : 00000027
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					E ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	13	132	1	3	149	0	0	0	0	0	0	196	86	0	282	59	0	32	1	92	523
04:15 PM	17	116	2	0	135	0	0	0	0	0	0	164	87	0	251	58	0	49	0	107	493
04:30 PM	19	125	2	0	146	0	0	0	0	0	0	172	96	0	268	62	0	41	0	103	517
04:45 PM	20	159	1	1	181	0	0	0	0	0	0	186	87	0	273	53	0	43	2	98	552
Total	69	532	6	4	611	0	0	0	0	0	0	718	356	0	1074	232	0	165	3	400	2085
05:00 PM	27	151	1	0	179	0	0	0	0	0	0	219	106	1	326	87	0	56	0	143	648
05:15 PM	26	173	3	0	202	0	0	0	0	0	0	193	96	1	290	82	0	55	0	137	629
05:30 PM	19	141	4	0	164	0	0	0	0	0	0	172	96	0	268	84	0	58	0	142	574
05:45 PM	22	154	1	1	178	0	0	0	0	0	0	152	90	0	242	99	0	72	0	171	591
Total	94	619	9	1	723	0	0	0	0	0	0	736	388	2	1126	352	0	241	0	593	2442
Grand Total	163	1151	15	5	1334	0	0	0	0	0	0	1454	744	2	2200	584	0	406	3	993	4527
Apprch %	12.2	86.3	1.1	0.4		0	0	0	0		0	66.1	33.8	0.1		58.8	0	40.9	0.3		
Total %	3.6	25.4	0.3	0.1	29.5	0	0	0	0	0	0	32.1	16.4	0	48.6	12.9	0	9	0.1	21.9	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				E ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**27**	151	1	179	0	0	0	0	0	**219**	**106**	**325**	87	0	56	143	**647**
05:15 PM	26	**173**	3	**202**	0	0	0	0	0	193	96	289	82	0	55	137	628
05:30 PM	19	141	**4**	164	0	0	0	0	0	172	96	268	84	0	58	142	574
05:45 PM	22	154	1	177	0	0	0	0	0	152	90	242	**99**	0	**72**	**171**	590
Total Volume	94	619	9	722	0	0	0	0	0	736	388	1124	352	0	241	593	2439
% App. Total	13	85.7	1.2		0	0	0		0	65.5	34.5		59.4	0	40.6		
PHF	.870	.895	.563	.894	.000	.000	.000	.000	.000	.840	.915	.865	.889	.000	.837	.867	.942

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File Name : 27PM FINAL
Site Code : 00000027
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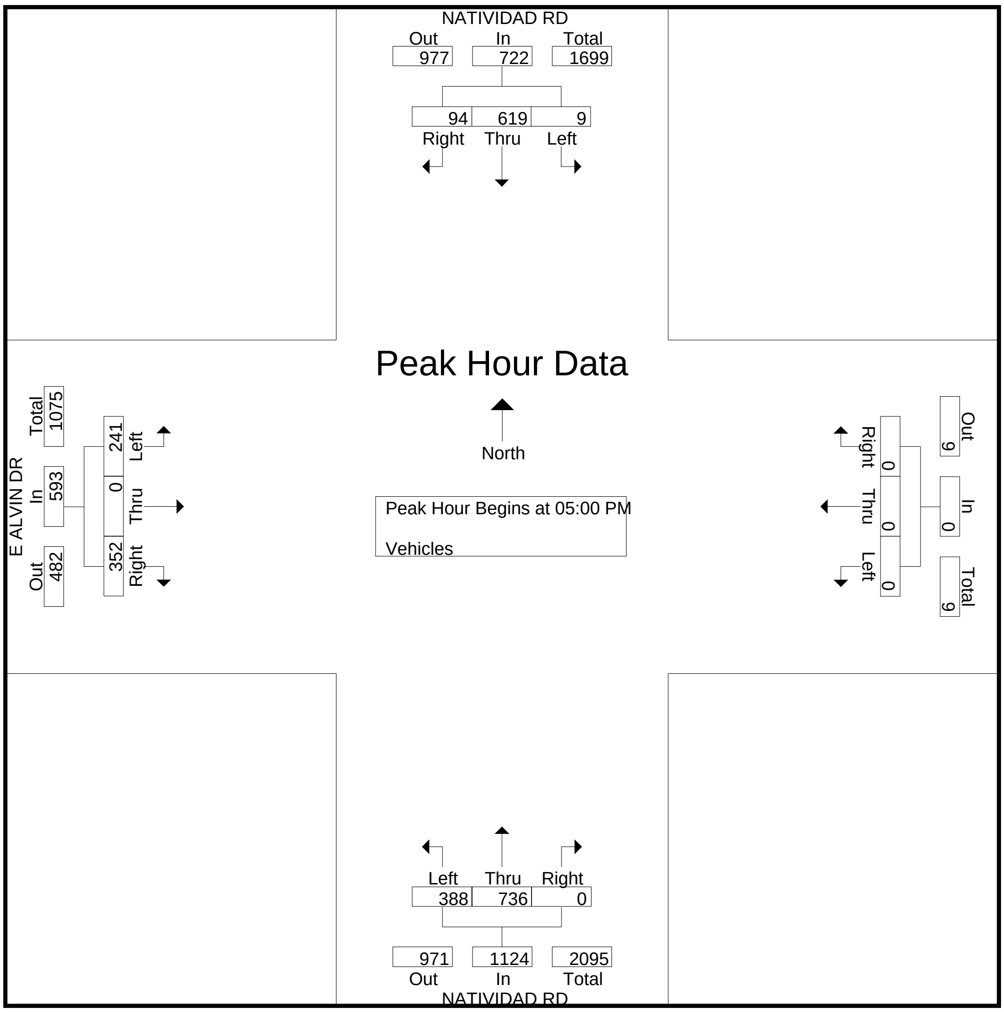

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File Name : 28PM FINAL
Site Code : 00000028
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	INDEPENDENCE BLVD Southbound					CONSTITUTION BLVD Westbound					DRIVEWAY Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	40	22	26	1	89	12	138	2	11	163	4	22	48	4	78	41	183	49	6	279	609
04:15 PM	53	26	17	1	97	17	129	6	5	157	2	22	40	0	64	40	156	52	1	249	567
04:30 PM	59	30	18	0	107	12	131	6	10	159	4	22	49	0	75	46	189	77	3	315	656
04:45 PM	39	18	14	0	71	13	131	1	6	151	5	28	35	1	69	50	176	60	1	287	578
Total	191	96	75	2	364	54	529	15	32	630	15	94	172	5	286	177	704	238	11	1130	2410
05:00 PM	51	40	21	0	112	19	134	3	11	167	7	23	42	3	75	53	183	63	1	300	654
05:15 PM	46	21	29	1	97	20	122	3	4	149	7	32	38	0	77	49	230	80	0	359	682
05:30 PM	61	28	16	4	109	19	148	4	1	172	4	18	35	0	57	39	208	68	3	318	656
05:45 PM	46	28	17	2	93	11	119	1	0	131	10	23	40	0	73	42	240	82	0	364	661
Total	204	117	83	7	411	69	523	11	16	619	28	96	155	3	282	183	861	293	4	1341	2653
Grand Total	395	213	158	9	775	123	1052	26	48	1249	43	190	327	8	568	360	1565	531	15	2471	5063
Apprch %	51	27.5	20.4	1.2		9.8	84.2	2.1	3.8		7.6	33.5	57.6	1.4		14.6	63.3	21.5	0.6		
Total %	7.8	4.2	3.1	0.2	15.3	2.4	20.8	0.5	0.9	24.7	0.8	3.8	6.5	0.2	11.2	7.1	30.9	10.5	0.3	48.8	

	INDEPENDENCE BLVD Southbound				CONSTITUTION BLVD Westbound				DRIVEWAY Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	51	**40**	21	**112**	19	134	3	156	7	23	**42**	72	**53**	183	63	299	639
05:15 PM	46	21	**29**	96	**20**	122	3	145	7	**32**	38	**77**	49	230	80	359	**677**
05:30 PM	**61**	28	16	105	19	**148**	**4**	**171**	4	18	35	57	39	208	68	315	648
05:45 PM	46	28	17	91	11	119	1	131	**10**	23	40	73	42	**240**	**82**	**364**	659
Total Volume	204	117	83	404	69	523	11	603	28	96	155	279	183	861	293	1337	2623
% App. Total	50.5	29	20.5		11.4	86.7	1.8		10	34.4	55.6		13.7	64.4	21.9		
PHF	.836	.731	.716	.902	.863	.883	.688	.882	.700	.750	.923	.906	.863	.897	.893	.918	.969

Traffic Data Service

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File Name : 28PM FINAL
Site Code : 00000028
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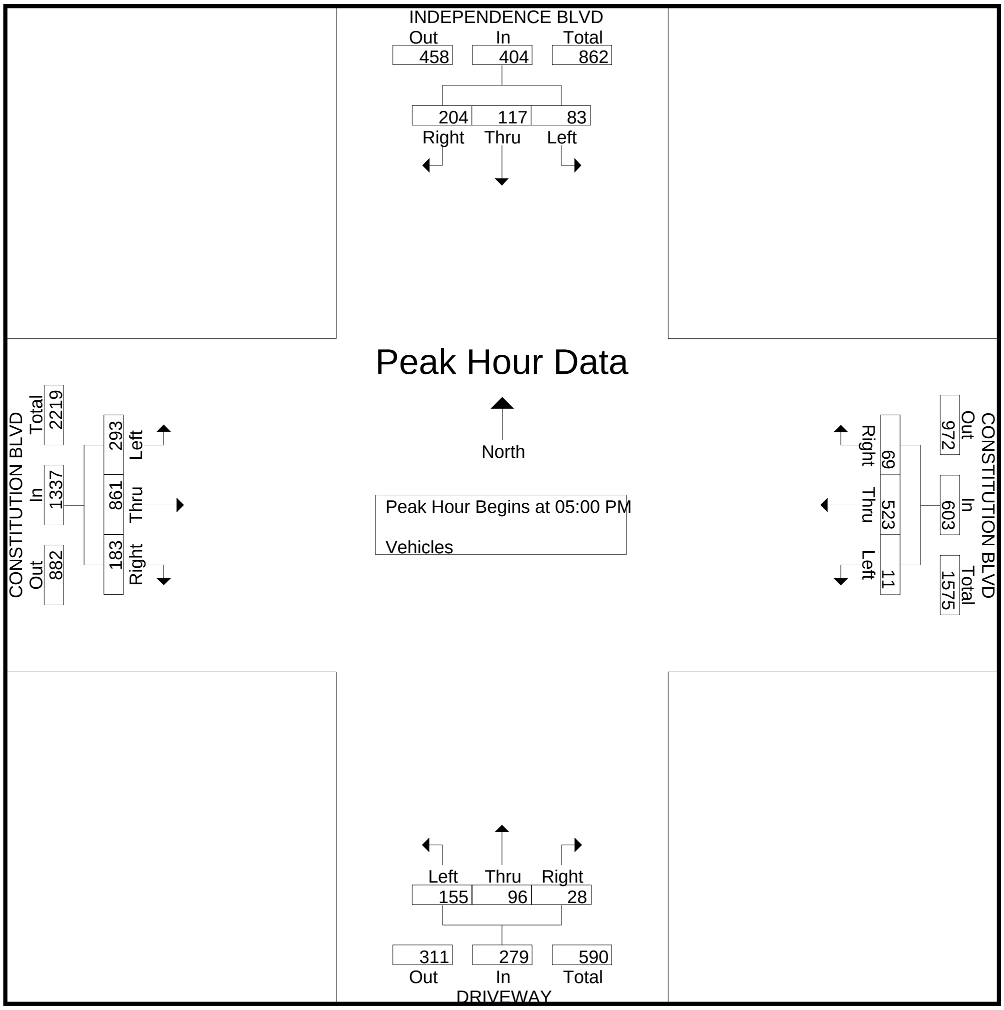

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File Name : 29PM FINAL
Site Code : 00000029
Start Date : 11/17/2015
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Groups Printed- Vehicles

	E BORONDA RD Southbound					Westbound					E BORONDA RD Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	38	149	0	0	187	0	0	0	0	0	0	112	13	0	125	26	0	33	2	61	373
04:15 PM	51	146	0	0	197	0	0	0	0	0	0	106	17	0	123	14	0	33	0	47	367
04:30 PM	35	119	0	0	154	0	0	0	0	0	0	121	10	0	131	25	0	31	0	56	341
04:45 PM	46	143	0	0	189	0	0	0	0	0	0	106	18	0	124	20	0	46	1	67	380
Total	170	557	0	0	727	0	0	0	0	0	0	445	58	0	503	85	0	143	3	231	1461
05:00 PM	48	145	0	0	193	0	0	0	0	0	0	120	14	0	134	30	0	52	1	83	410
05:15 PM	46	160	0	0	206	0	0	0	0	0	0	98	16	0	114	20	0	35	3	58	378
05:30 PM	38	162	0	0	200	0	0	0	0	0	0	109	12	0	121	25	0	51	0	76	397
05:45 PM	48	163	0	0	211	0	0	0	0	0	0	90	12	0	102	22	0	42	0	64	377
Total	180	630	0	0	810	0	0	0	0	0	0	417	54	0	471	97	0	180	4	281	1562
Grand Total	350	1187	0	0	1537	0	0	0	0	0	0	862	112	0	974	182	0	323	7	512	3023
Apprch %	22.8	77.2	0	0		0	0	0	0		0	88.5	11.5	0		35.5	0	63.1	1.4		
Total %	11.6	39.3	0	0	50.8	0	0	0	0	0	0	28.5	3.7	0	32.2	6	0	10.7	0.2	16.9	

	E BORONDA RD Southbound				Westbound				E BORONDA RD Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	46	143	0	189	0	0	0	0	0	106	**18**	124	20	0	46	66	379
05:00 PM	**48**	145	0	193	0	0	0	0	0	**120**	14	**134**	**30**	0	**52**	**82**	**409**
05:15 PM	46	160	0	**206**	0	0	0	0	0	98	16	114	20	0	35	55	375
05:30 PM	38	**162**	0	200	0	0	0	0	0	109	12	121	25	0	51	76	397
Total Volume	178	610	0	788	0	0	0	0	0	433	60	493	95	0	184	279	1560
% App. Total	22.6	77.4	0		0	0	0		0	87.8	12.2		34.1	0	65.9		
PHF	.927	.941	.000	.956	.000	.000	.000	.000	.000	.902	.833	.920	.792	.000	.885	.851	.954

Traffic Data Service

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File Name : 29PM FINAL
Site Code : 00000029
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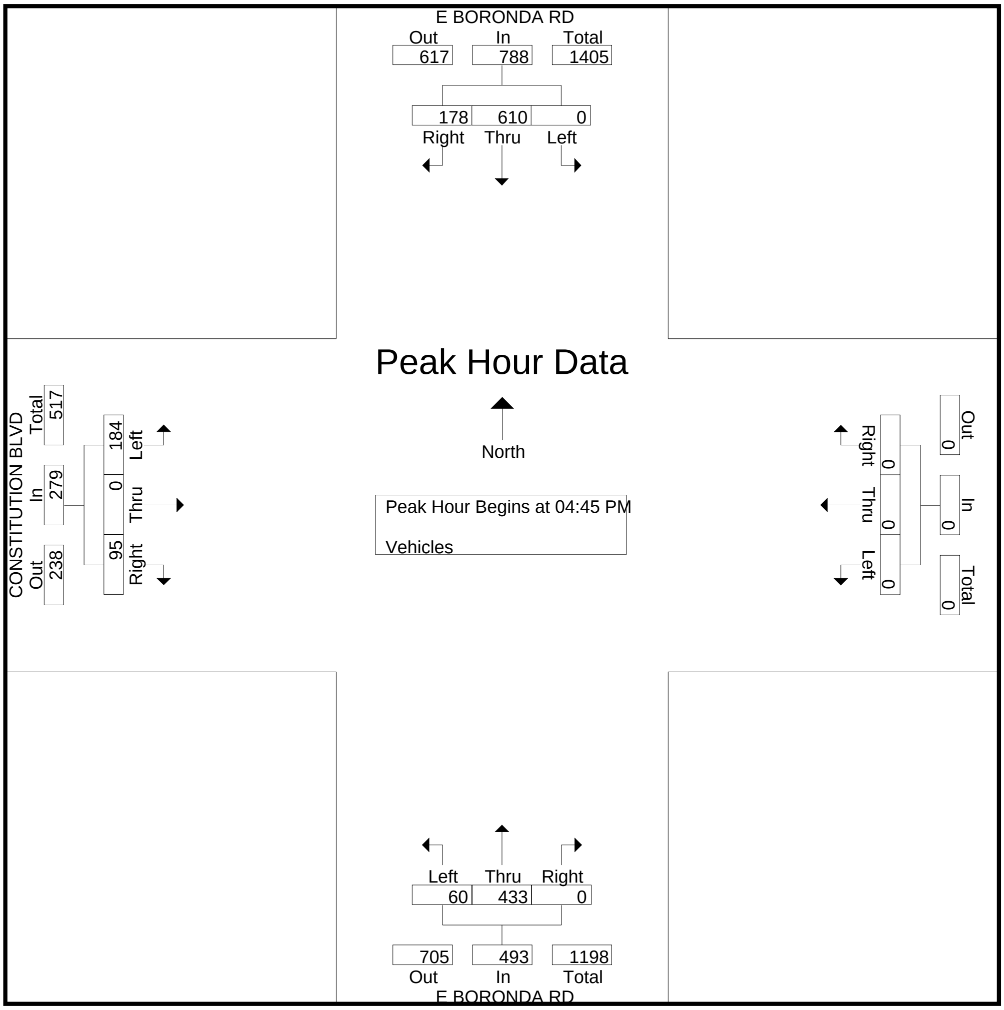

Traffic Data Service

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File Name : 30PM FINAL
Site Code : 00000030
Start Date : 1/14/2016
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Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					W LAUREL DR Westbound					US-101 SB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	79	0	71	0	150	30	254	0	0	284	0	0	0	0	0	96	332	0	0	428	862
04:15 PM	75	0	72	0	147	25	317	0	0	342	0	0	0	0	0	98	354	0	0	452	941
04:30 PM	72	0	76	0	148	38	305	0	0	343	0	0	0	0	0	115	351	0	0	466	957
04:45 PM	98	0	118	0	216	24	288	0	0	312	0	0	0	0	0	89	399	0	0	488	1016
Total	324	0	337	0	661	117	1164	0	0	1281	0	0	0	0	0	398	1436	0	0	1834	3776
05:00 PM	81	0	84	1	166	44	299	0	0	343	0	0	0	0	0	102	389	0	0	491	1000
05:15 PM	73	0	90	0	163	24	321	0	0	345	0	0	0	0	0	93	366	0	0	459	967
05:30 PM	87	0	64	0	151	24	242	0	0	266	0	0	0	0	0	80	364	0	0	444	861
05:45 PM	73	0	73	0	146	36	258	0	0	294	0	0	0	0	0	90	343	0	0	433	873
Total	314	0	311	1	626	128	1120	0	0	1248	0	0	0	0	0	365	1462	0	0	1827	3701
Grand Total	638	0	648	1	1287	245	2284	0	0	2529	0	0	0	0	0	763	2898	0	0	3661	7477
Apprch %	49.6	0	50.3	0.1		9.7	90.3	0	0		0	0	0	0		20.8	79.2	0	0		
Total %	8.5	0	8.7	0	17.2	3.3	30.5	0	0	33.8	0	0	0	0	0	10.2	38.8	0	0	49	

	US-101 SB RAMPS Southbound				W LAUREL DR Westbound				US-101 SB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	72	0	76	148	38	305	0	343	0	0	0	0	**115**	351	0	466	957
04:45 PM	**98**	0	**118**	**216**	24	288	0	312	0	0	0	0	89	**399**	0	488	**1016**
05:00 PM	81	0	84	165	**44**	299	0	343	0	0	0	0	102	389	0	**491**	999
05:15 PM	73	0	90	163	24	**321**	0	**345**	0	0	0	0	93	366	0	459	967
Total Volume	324	0	368	692	130	1213	0	1343	0	0	0	0	399	1505	0	1904	3939
% App. Total	46.8	0	53.2		9.7	90.3	0		0	0	0		21	79	0		
PHF	.827	.000	.780	.801	.739	.945	.000	.973	.000	.000	.000	.000	.867	.943	.000	.969	.969

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File Name : 30PM FINAL
Site Code : 00000030
Start Date : 1/14/2016
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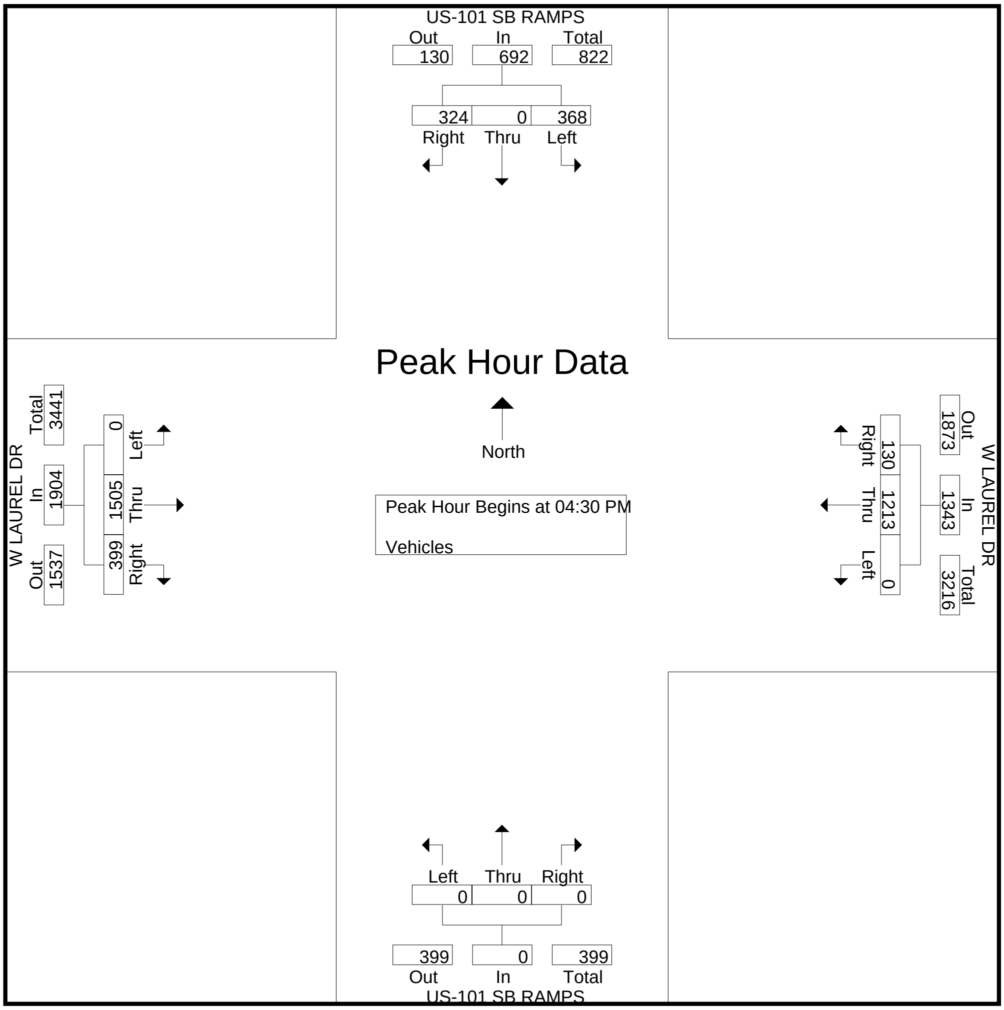

Traffic Data Service

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File Name : 31PM FINAL
Site Code : 00000031
Start Date : 1/14/2016
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Groups Printed- Vehicles

	US-101 NB RAMPS Southbound					W LAUREL DR Westbound					US-101 NB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	46	211	0	0	257	75	0	83	1	159	104	300	0	0	404	820
04:15 PM	0	0	0	2	2	58	257	0	0	315	73	0	92	0	165	101	322	0	0	423	905
04:30 PM	0	0	0	0	0	53	236	0	0	289	75	0	124	0	199	87	359	0	0	446	934
04:45 PM	0	0	0	1	1	50	226	1	0	277	95	0	107	1	203	110	388	0	0	498	979
Total	0	0	0	3	3	207	930	1	0	1138	318	0	406	2	726	402	1369	0	0	1771	3638
05:00 PM	0	0	0	2	2	56	236	0	0	292	90	0	92	0	182	105	362	0	0	467	943
05:15 PM	0	0	0	0	0	68	241	0	0	309	88	0	82	0	170	128	338	0	0	466	945
05:30 PM	0	0	0	0	0	45	183	0	0	228	75	0	80	0	155	96	326	0	0	422	805
05:45 PM	0	0	0	0	0	49	193	0	0	242	63	0	88	1	152	86	340	0	0	426	820
Total	0	0	0	2	2	218	853	0	0	1071	316	0	342	1	659	415	1366	0	0	1781	3513
Grand Total	0	0	0	5	5	425	1783	1	0	2209	634	0	748	3	1385	817	2735	0	0	3552	7151
Apprch %	0	0	0	100		19.2	80.7	0	0		45.8	0	54	0.2		23	77	0	0		
Total %	0	0	0	0.1	0.1	5.9	24.9	0	0	30.9	8.9	0	10.5	0	19.4	11.4	38.2	0	0	49.7	

	US-101 NB RAMPS Southbound				W LAUREL DR Westbound				US-101 NB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	53	236	0	289	75	0	**124**	199	87	359	0	446	934
04:45 PM	0	0	0	0	50	226	**1**	277	**95**	0	107	**202**	110	**388**	0	**498**	**977**
05:00 PM	0	0	0	0	56	236	0	292	90	0	92	182	105	362	0	467	941
05:15 PM	0	0	0	0	**68**	**241**	0	**309**	88	0	82	170	**128**	338	0	466	945
Total Volume	0	0	0	0	227	939	1	1167	348	0	405	753	430	1447	0	1877	3797
% App. Total	0	0	0		19.5	80.5	0.1		46.2	0	53.8		22.9	77.1	0		
PHF	.000	.000	.000	.000	.835	.974	.250	.944	.916	.000	.817	.932	.840	.932	.000	.942	.972

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File Name : 31PM FINAL
Site Code : 00000031
Start Date : 1/14/2016
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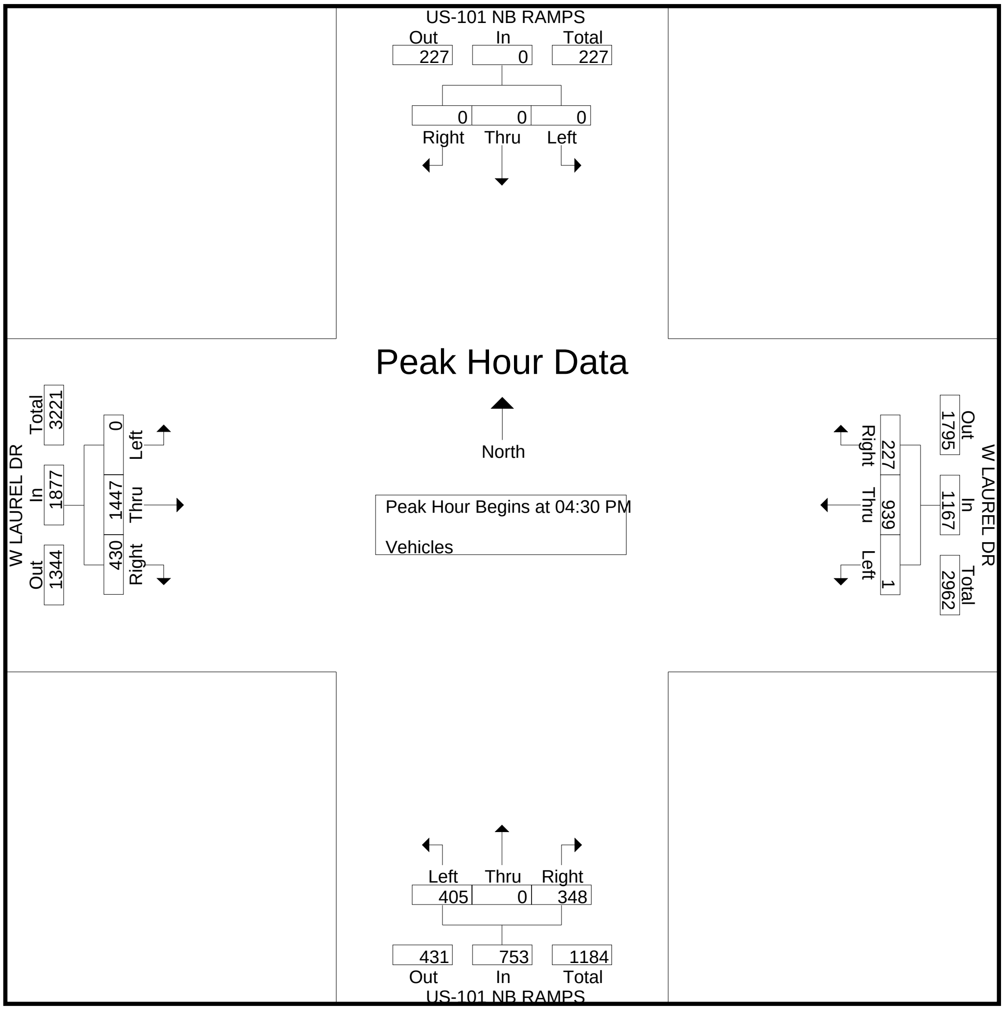

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File Name : 32PM FINAL
Site Code : 00000032
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E LAUREL DR Westbound					N MAIN ST Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	30	196	50	0	276	43	100	41	0	184	39	189	21	2	251	18	123	69	8	218	929
04:15 PM	45	188	74	2	309	34	134	30	0	198	47	207	39	1	294	28	146	56	3	233	1034
04:30 PM	42	208	79	0	329	35	108	48	3	194	32	214	22	2	270	22	143	60	7	232	1025
04:45 PM	32	194	62	0	288	51	118	32	1	202	37	235	44	3	319	38	160	67	5	270	1079
Total	149	786	265	2	1202	163	460	151	4	778	155	845	126	8	1134	106	572	252	23	953	4067
05:00 PM	41	204	61	2	308	43	118	36	1	198	55	213	30	5	303	35	172	53	5	265	1074
05:15 PM	48	227	67	0	342	43	131	41	1	216	59	215	40	1	315	28	142	55	4	229	1102
05:30 PM	31	214	74	1	320	38	94	44	0	176	48	256	29	0	333	18	155	49	1	223	1052
05:45 PM	42	213	76	1	332	57	97	46	0	200	29	232	37	1	299	24	157	67	0	248	1079
Total	162	858	278	4	1302	181	440	167	2	790	191	916	136	7	1250	105	626	224	10	965	4307
Grand Total	311	1644	543	6	2504	344	900	318	6	1568	346	1761	262	15	2384	211	1198	476	33	1918	8374
Apprch %	12.4	65.7	21.7	0.2		21.9	57.4	20.3	0.4		14.5	73.9	11	0.6		11	62.5	24.8	1.7		
Total %	3.7	19.6	6.5	0.1	29.9	4.1	10.7	3.8	0.1	18.7	4.1	21	3.1	0.2	28.5	2.5	14.3	5.7	0.4	22.9	

	N MAIN ST Southbound				E LAUREL DR Westbound				N MAIN ST Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	41	204	61	306	43	118	36	197	55	213	30	298	**35**	**172**	53	**260**	1061
05:15 PM	**48**	**227**	67	**342**	43	**131**	41	**215**	**59**	215	**40**	314	28	142	55	225	**1096**
05:30 PM	31	214	74	319	38	94	44	176	48	**256**	29	**333**	18	155	49	222	1050
05:45 PM	42	213	**76**	331	**57**	97	**46**	200	29	232	37	298	24	157	**67**	248	1077
Total Volume	162	858	278	1298	181	440	167	788	191	916	136	1243	105	626	224	955	4284
% App. Total	12.5	66.1	21.4		23	55.8	21.2		15.4	73.7	10.9		11	65.5	23.5		
PHF	.844	.945	.914	.949	.794	.840	.908	.916	.809	.895	.850	.933	.750	.910	.836	.918	.977

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File Name : 32PM FINAL
Site Code : 00000032
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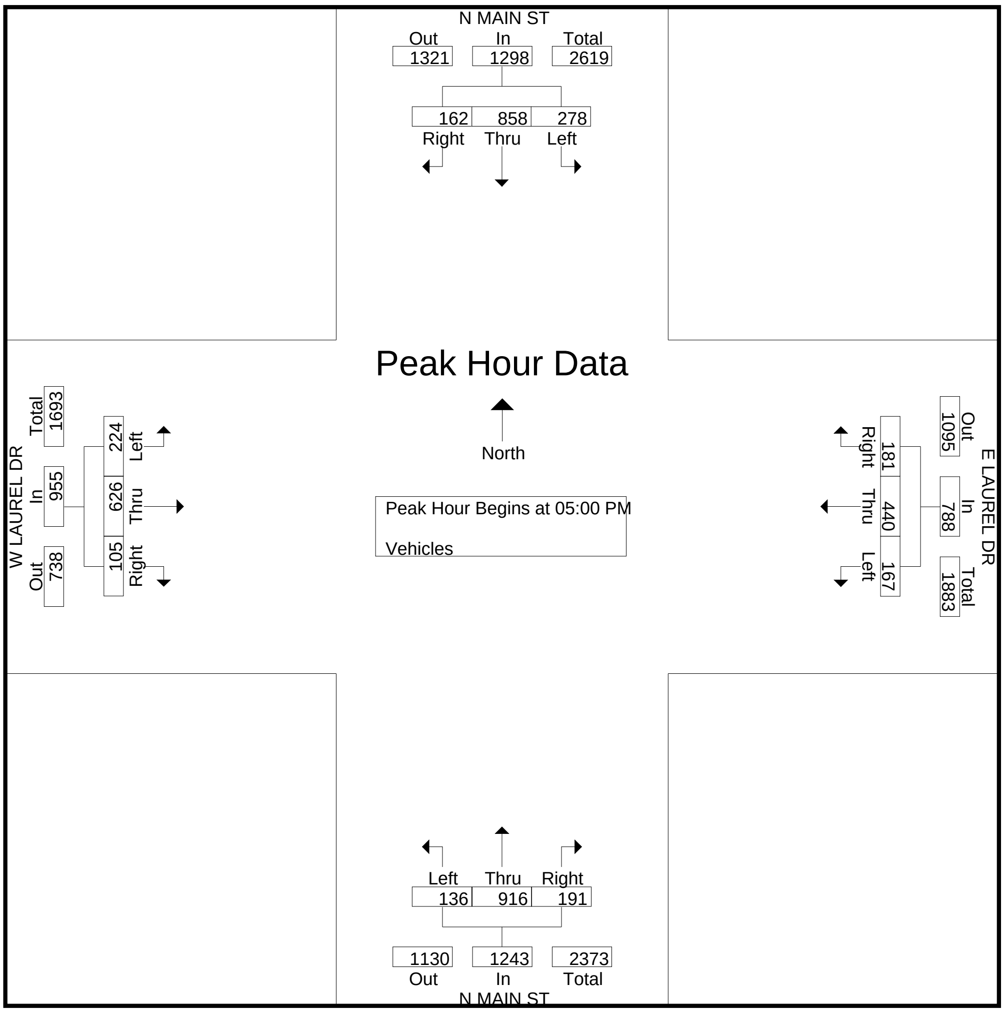

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File Name : 33PM FINAL
Site Code : 00000033
Start Date : 1/14/2016
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Groups Printed- Vehicles

	NATIVIDAD RD Southbound					E LAUREL DR Westbound					NATIVIDAD RD Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	18	99	51	0	168	80	141	144	4	369	172	156	6	5	339	16	140	23	1	180	1056
04:15 PM	30	119	85	0	234	76	150	122	0	348	175	142	18	1	336	14	166	16	0	196	1114
04:30 PM	26	133	97	0	256	97	142	154	8	401	185	139	17	3	344	14	172	30	0	216	1217
04:45 PM	17	121	92	1	231	109	140	155	2	406	185	181	24	3	393	23	174	28	0	225	1255
Total	91	472	325	1	889	362	573	575	14	1524	717	618	65	12	1412	67	652	97	1	817	4642
05:00 PM	16	171	106	1	294	120	140	155	0	415	215	144	20	1	380	21	174	25	1	221	1310
05:15 PM	14	131	117	0	262	117	144	153	1	415	184	167	20	1	372	17	181	22	0	220	1269
05:30 PM	16	104	91	1	212	101	113	151	3	368	185	154	24	0	363	11	187	25	1	224	1167
05:45 PM	14	100	98	1	213	116	131	150	2	399	197	148	24	3	372	15	185	22	0	222	1206
Total	60	506	412	3	981	454	528	609	6	1597	781	613	88	5	1487	64	727	94	2	887	4952
Grand Total	151	978	737	4	1870	816	1101	1184	20	3121	1498	1231	153	17	2899	131	1379	191	3	1704	9594
Apprch %	8.1	52.3	39.4	0.2		26.1	35.3	37.9	0.6		51.7	42.5	5.3	0.6		7.7	80.9	11.2	0.2		
Total %	1.6	10.2	7.7	0	19.5	8.5	11.5	12.3	0.2	32.5	15.6	12.8	1.6	0.2	30.2	1.4	14.4	2	0	17.8	

	NATIVIDAD RD Southbound				E LAUREL DR Westbound				NATIVIDAD RD Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**26**	133	97	256	97	142	154	393	185	139	17	341	14	172	**30**	216	1206
04:45 PM	17	121	92	230	109	140	**155**	404	185	**181**	**24**	**390**	**23**	174	28	**225**	1249
05:00 PM	16	**171**	106	**293**	**120**	140	155	**415**	**215**	144	20	379	21	174	25	220	**1307**
05:15 PM	14	131	**117**	262	117	**144**	153	414	184	167	20	371	17	**181**	22	220	1267
Total Volume	73	556	412	1041	443	566	617	1626	769	631	81	1481	75	701	105	881	5029
% App. Total	7	53.4	39.6		27.2	34.8	37.9		51.9	42.6	5.5		8.5	79.6	11.9		
PHF	.702	.813	.880	.888	.923	.983	.995	.980	.894	.872	.844	.949	.815	.968	.875	.979	.962

Traffic Data Service

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File Name : 33PM FINAL
Site Code : 00000033
Start Date : 1/14/2016
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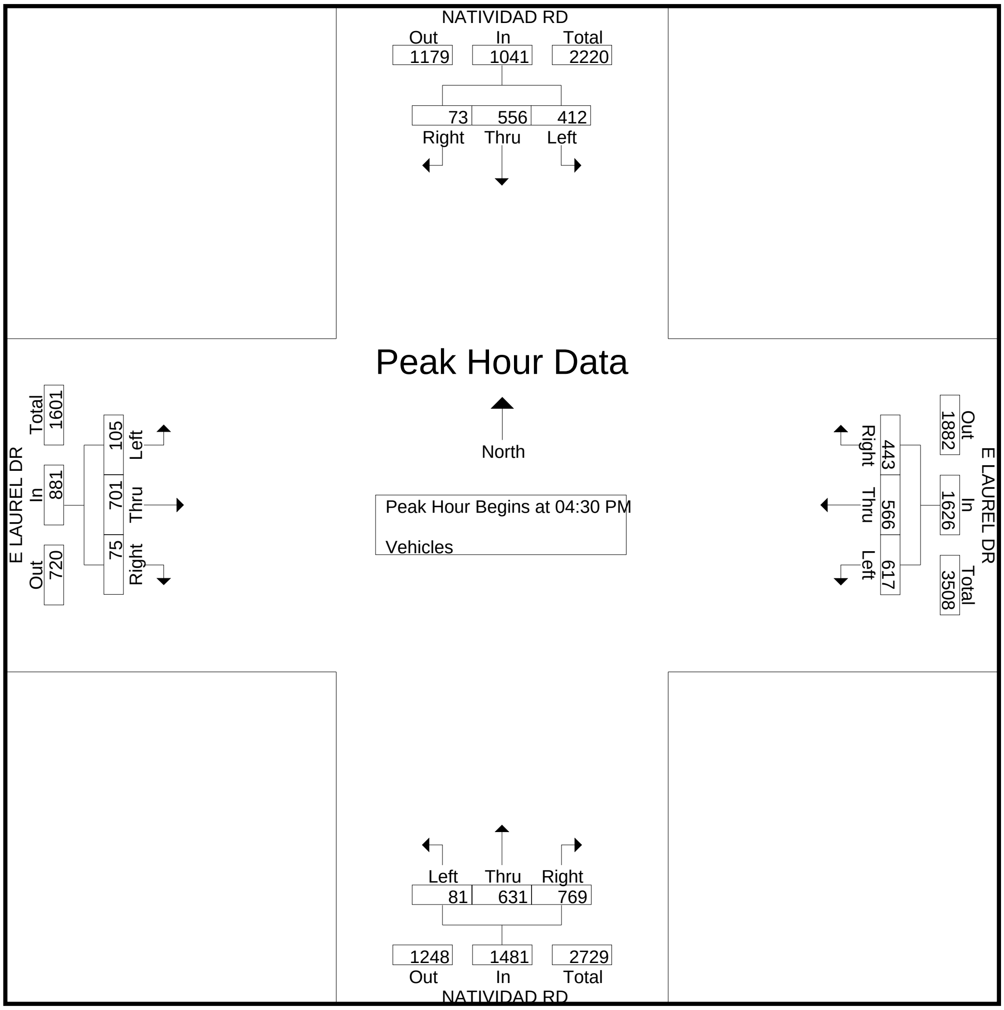

Traffic Data Service

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File Name : 34PM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	CONSTITUTION BLVD Southbound					E LAUREL DR Westbound					Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	205	0	52	0	257	61	165	0	0	226	0	0	0	0	0	0	150	239	0	389	872
04:15 PM	188	0	46	1	235	45	177	0	0	222	0	0	0	0	0	0	184	262	0	446	903
04:30 PM	212	0	64	0	276	59	191	0	0	250	0	0	0	0	0	0	192	290	0	482	1008
04:45 PM	187	0	41	0	228	65	171	0	0	236	0	0	0	0	0	0	193	262	0	455	919
Total	792	0	203	1	996	230	704	0	0	934	0	0	0	0	0	0	719	1053	0	1772	3702
05:00 PM	203	0	60	0	263	70	214	0	0	284	0	0	0	0	0	0	191	299	0	490	1037
05:15 PM	191	0	32	1	224	72	196	0	0	268	0	0	0	0	0	0	196	289	0	485	977
05:30 PM	226	0	63	0	289	71	166	0	0	237	0	0	0	0	0	0	198	280	0	478	1004
05:45 PM	170	0	41	0	211	59	174	0	0	233	0	0	0	0	0	0	199	306	0	505	949
Total	790	0	196	1	987	272	750	0	0	1022	0	0	0	0	0	0	784	1174	0	1958	3967
Grand Total	1582	0	399	2	1983	502	1454	0	0	1956	0	0	0	0	0	0	1503	2227	0	3730	7669
Apprch %	79.8	0	20.1	0.1		25.7	74.3	0	0		0	0	0	0		0	40.3	59.7	0		
Total %	20.6	0	5.2	0	25.9	6.5	19	0	0	25.5	0	0	0	0	0	0	19.6	29	0	48.6	

	CONSTITUTION BLVD Southbound				E LAUREL DR Westbound				Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	203	0	60	263	70	**214**	0	**284**	0	0	0	0	0	191	299	490	**1037**
05:15 PM	191	0	32	223	**72**	196	0	268	0	0	0	0	0	196	289	485	976
05:30 PM	**226**	0	**63**	**289**	71	166	0	237	0	0	0	0	0	198	280	478	1004
05:45 PM	170	0	41	211	59	174	0	233	0	0	0	0	0	**199**	**306**	**505**	949
Total Volume	790	0	196	986	272	750	0	1022	0	0	0	0	0	784	1174	1958	3966
% App. Total	80.1	0	19.9		26.6	73.4	0		0	0	0		0	40	60		
PHF	.874	.000	.778	.853	.944	.876	.000	.900	.000	.000	.000	.000	.000	.985	.959	.969	.956

Traffic Data Service

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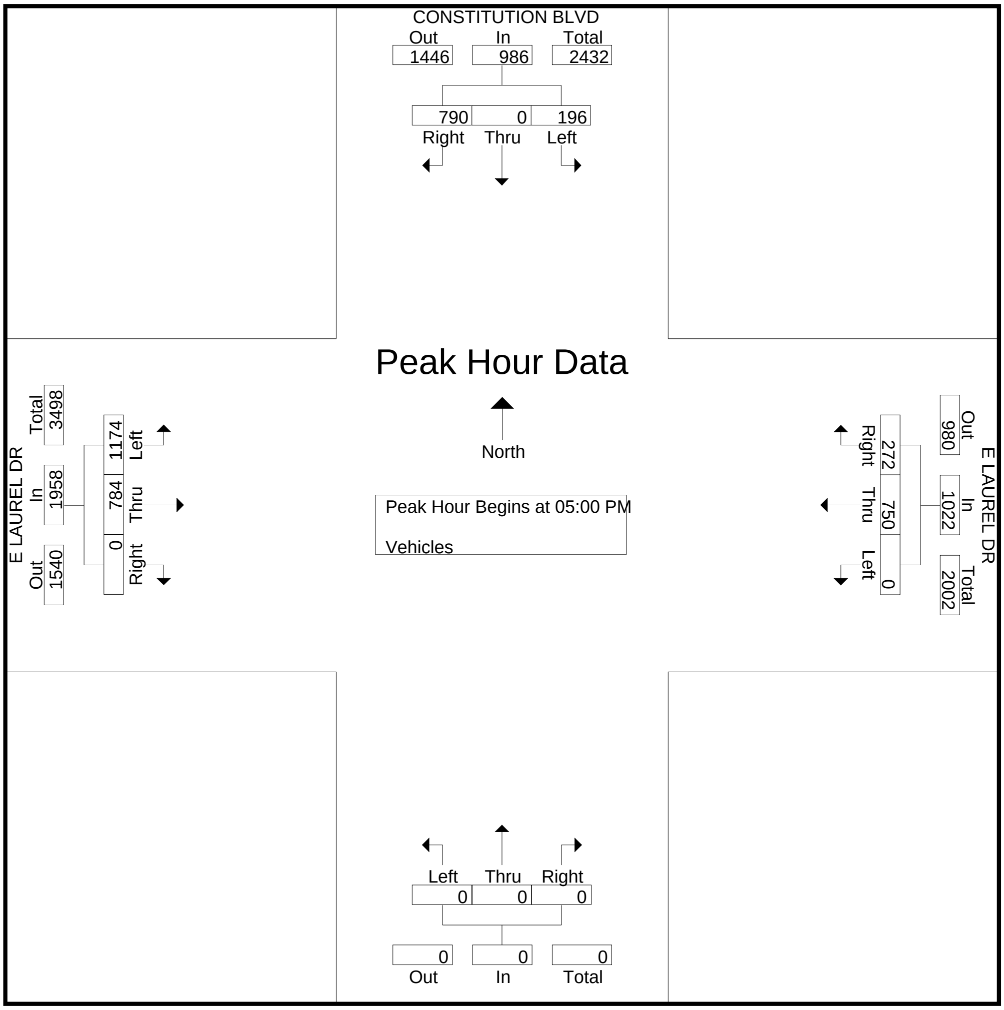
File Name : 34PM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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(408) 377-2988
tdsbay@cs.com

File Name : 35PM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	Southbound					E BORONDA RD Westbound					N SANBORN RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	59	15	0	74	7	0	52	3	62	34	77	0	0	111	247
04:15 PM	0	0	0	0	0	0	47	19	0	66	6	0	51	0	57	38	89	0	0	127	250
04:30 PM	0	0	0	0	0	0	69	24	0	93	6	0	49	1	56	31	75	0	0	106	255
04:45 PM	0	0	0	0	0	0	59	22	0	81	6	0	54	2	62	41	75	0	0	116	259
Total	0	0	0	0	0	0	234	80	0	314	25	0	206	6	237	144	316	0	0	460	1011
05:00 PM	0	0	0	0	0	0	75	25	0	100	9	0	35	3	47	48	81	0	0	129	276
05:15 PM	0	0	0	0	0	0	60	28	0	88	2	0	45	3	50	48	65	0	0	113	251
05:30 PM	0	0	0	0	0	0	53	19	0	72	5	0	35	0	40	61	89	0	0	150	262
05:45 PM	0	0	0	0	0	0	46	25	0	71	6	0	42	1	49	52	88	0	0	140	260
Total	0	0	0	0	0	0	234	97	0	331	22	0	157	7	186	209	323	0	0	532	1049
Grand Total	0	0	0	0	0	0	468	177	0	645	47	0	363	13	423	353	639	0	0	992	2060
Apprch %	0	0	0	0		0	72.6	27.4	0		11.1	0	85.8	3.1		35.6	64.4	0	0		
Total %	0	0	0	0	0	0	22.7	8.6	0	31.3	2.3	0	17.6	0.6	20.5	17.1	31	0	0	48.2	

	Southbound				E BORONDA RD Westbound				N SANBORN RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	**75**	25	**100**	**9**	0	35	44	48	81	0	129	**273**
05:15 PM	0	0	0	0	0	60	**28**	88	2	0	**45**	47	48	65	0	113	248
05:30 PM	0	0	0	0	0	53	19	72	5	0	35	40	**61**	**89**	0	**150**	262
05:45 PM	0	0	0	0	0	46	25	71	6	0	42	**48**	52	88	0	140	259
Total Volume	0	0	0	0	0	234	97	331	22	0	157	179	209	323	0	532	1042
% App. Total	0	0	0		0	70.7	29.3		12.3	0	87.7		39.3	60.7	0		
PHF	.000	.000	.000	.000	.000	.780	.866	.828	.611	.000	.872	.932	.857	.907	.000	.887	.954

Traffic Data Service

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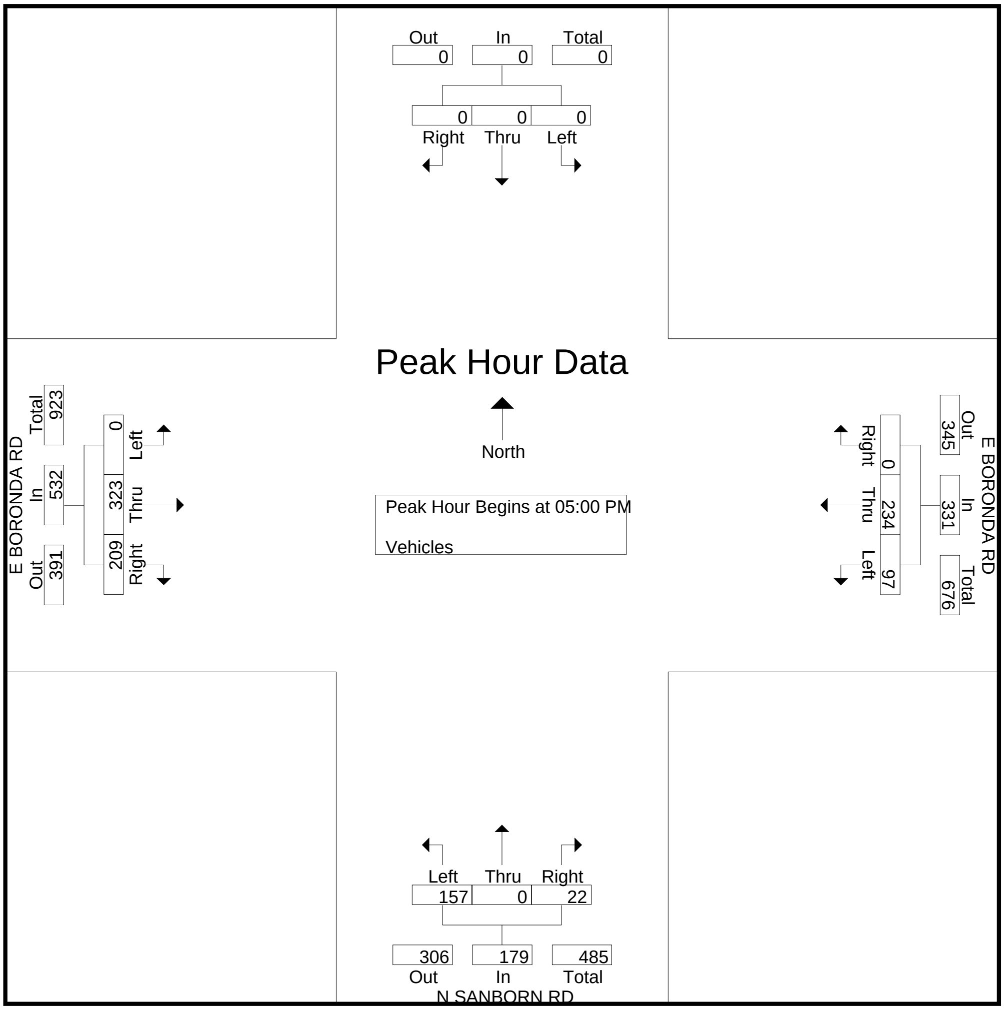
File Name : 35PM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

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File Name : 36PM FINAL
Site Code : 00000036
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	OLD STAGE RD Southbound					WILLIAMS RD Westbound					OLD STAGE RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	23	8	0	0	31	0	0	0	0	0	0	8	8	0	16	7	0	13	0	20	67
04:15 PM	22	6	0	0	28	0	0	0	0	0	0	6	9	0	15	10	0	14	0	24	67
04:30 PM	37	10	0	0	47	1	0	0	0	1	0	16	24	0	40	10	0	12	0	22	110
04:45 PM	39	10	0	0	49	0	0	0	0	0	0	15	39	0	54	9	0	20	0	29	132
Total	121	34	0	0	155	1	0	0	0	1	0	45	80	0	125	36	0	59	0	95	376
05:00 PM	73	5	0	0	78	0	0	0	0	0	0	12	13	0	25	12	0	9	0	21	124
05:15 PM	61	7	0	0	68	0	0	0	0	0	0	10	17	0	27	14	0	19	0	33	128
05:30 PM	35	11	0	0	46	0	0	0	0	0	0	5	11	0	16	15	0	12	0	27	89
05:45 PM	28	6	0	0	34	0	0	0	0	0	0	3	8	0	11	7	0	10	0	17	62
Total	197	29	0	0	226	0	0	0	0	0	0	30	49	0	79	48	0	50	0	98	403
Grand Total	318	63	0	0	381	1	0	0	0	1	0	75	129	0	204	84	0	109	0	193	779
Apprch %	83.5	16.5	0	0		100	0	0	0		0	36.8	63.2	0		43.5	0	56.5	0		
Total %	40.8	8.1	0	0	48.9	0.1	0	0	0	0.1	0	9.6	16.6	0	26.2	10.8	0	14	0	24.8	

	OLD STAGE RD Southbound				WILLIAMS RD Westbound				OLD STAGE RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	37	**10**	0	47	**1**	0	0	**1**	0	**16**	24	40	10	0	12	22	110
04:45 PM	39	10	0	49	0	0	0	0	0	15	**39**	**54**	9	0	**20**	29	**132**
05:00 PM	**73**	5	0	**78**	0	0	0	0	0	12	13	25	12	0	9	21	124
05:15 PM	61	7	0	68	0	0	0	0	0	10	17	27	**14**	0	19	**33**	128
Total Volume	210	32	0	242	1	0	0	1	0	53	93	146	45	0	60	105	494
% App. Total	86.8	13.2	0		100	0	0		0	36.3	63.7		42.9	0	57.1		
PHF	.719	.800	.000	.776	.250	.000	.000	.250	.000	.828	.596	.676	.804	.000	.750	.795	.936

Traffic Data Service

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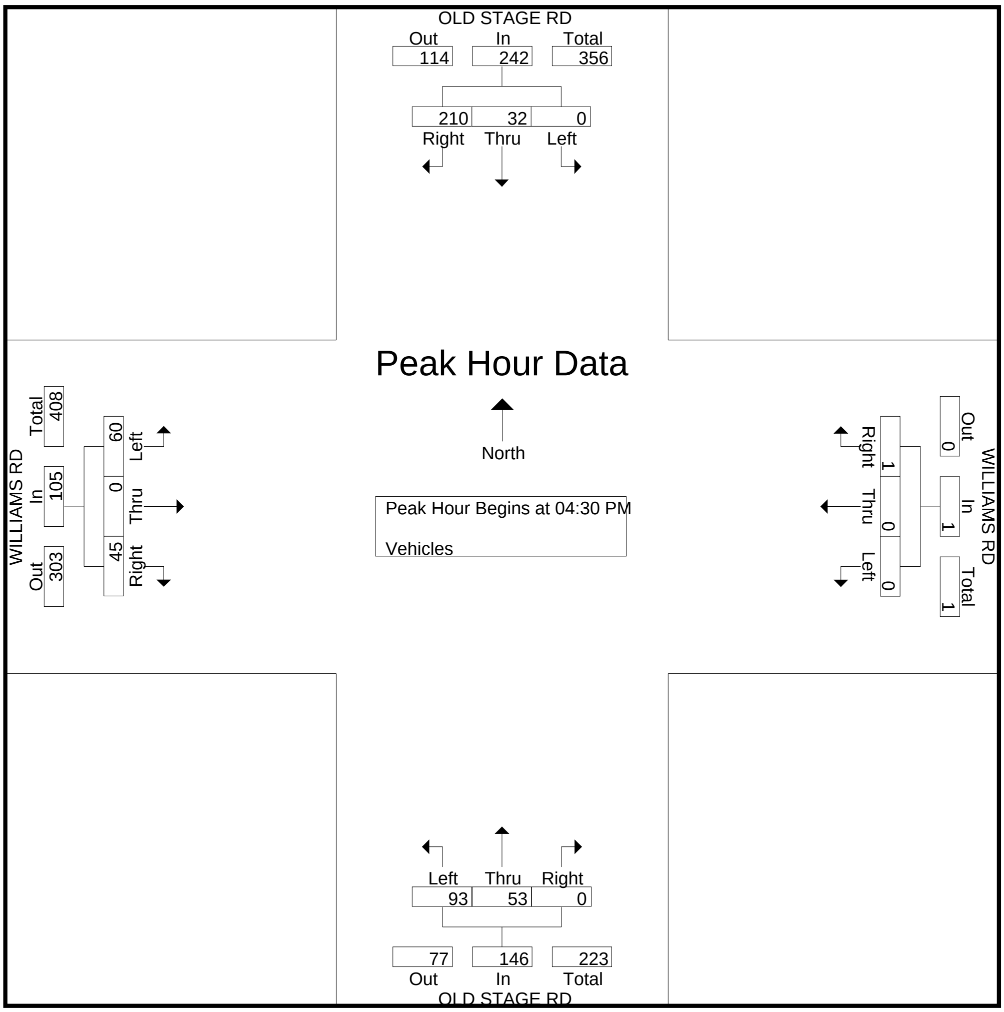
File Name : 36PM FINAL
Site Code : 00000036
Start Date : 11/17/2015



Traffic Data Service

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File Name : 37PM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E BERNAL DR Westbound					N MAIN ST Northbound					W BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	220	22	0	246	11	16	116	2	145	152	233	69	2	456	34	9	2	1	46	893
04:15 PM	9	215	21	2	247	14	16	119	5	154	125	199	75	2	401	30	6	8	0	44	846
04:30 PM	5	247	23	0	275	18	21	115	2	156	157	251	75	3	486	31	7	4	0	42	959
04:45 PM	5	227	17	0	249	19	21	128	2	170	153	236	69	3	461	38	3	7	2	50	930
Total	23	909	83	2	1017	62	74	478	11	625	587	919	288	10	1804	133	25	21	3	182	3628
05:00 PM	2	268	23	6	299	25	22	147	3	197	151	232	73	3	459	41	14	6	4	65	1020
05:15 PM	12	250	23	4	289	22	31	156	6	215	188	285	84	1	558	40	14	7	1	62	1124
05:30 PM	6	266	34	0	306	23	23	125	6	177	164	278	86	0	528	49	14	7	0	70	1081
05:45 PM	8	255	25	1	289	23	27	103	7	160	149	298	62	1	510	45	15	7	0	67	1026
Total	28	1039	105	11	1183	93	103	531	22	749	652	1093	305	5	2055	175	57	27	5	264	4251
Grand Total	51	1948	188	13	2200	155	177	1009	33	1374	1239	2012	593	15	3859	308	82	48	8	446	7879
Apprch %	2.3	88.5	8.5	0.6		11.3	12.9	73.4	2.4		32.1	52.1	15.4	0.4		69.1	18.4	10.8	1.8		
Total %	0.6	24.7	2.4	0.2	27.9	2	2.2	12.8	0.4	17.4	15.7	25.5	7.5	0.2	49	3.9	1	0.6	0.1	5.7	

	N MAIN ST Southbound				E BERNAL DR Westbound				N MAIN ST Northbound				W BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	**268**	23	293	**25**	22	147	194	151	232	73	456	41	14	6	61	1004
05:15 PM	**12**	250	23	285	22	**31**	**156**	**209**	**188**	285	84	**557**	40	14	**7**	61	**1112**
05:30 PM	6	266	**34**	**306**	23	23	125	171	164	278	**86**	528	**49**	14	7	**70**	1075
05:45 PM	8	255	25	288	23	27	103	153	149	**298**	62	509	45	**15**	7	67	1017
Total Volume	28	1039	105	1172	93	103	531	727	652	1093	305	2050	175	57	27	259	4208
% App. Total	2.4	88.7	9		12.8	14.2	73		31.8	53.3	14.9		67.6	22	10.4		
PHF	.583	.969	.772	.958	.930	.831	.851	.870	.867	.917	.887	.920	.893	.950	.964	.925	.946

Traffic Data Service

Campbell, CA

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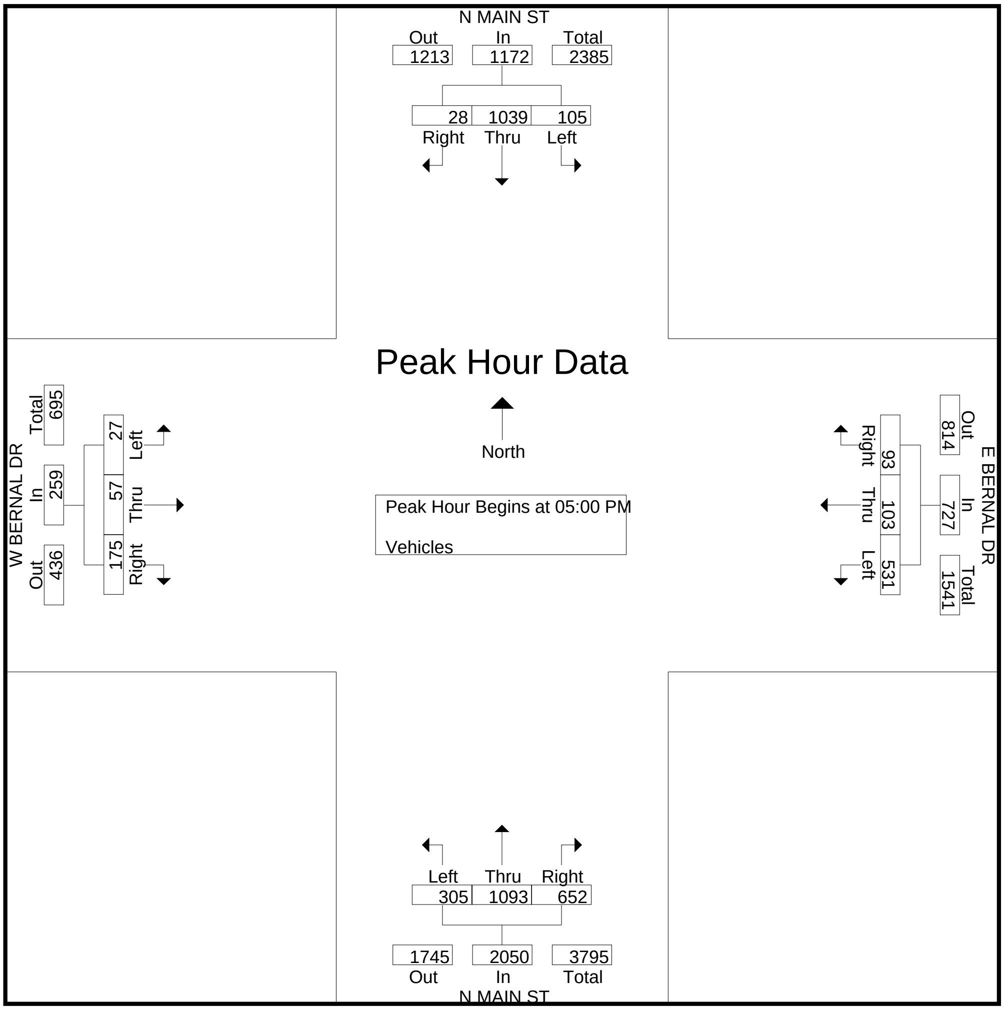
File Name : 37PM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

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File Name : 38PM FINAL
Site Code : 00000038
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	NATIVIDAD RD Southbound					LA POSADA WAY Westbound					SHERWOOD DR Northbound					E BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	81	174	4	0	259	3	0	1	0	4	5	256	24	1	286	20	3	88	0	111	660
04:15 PM	107	143	2	0	252	2	3	2	2	9	2	233	25	1	261	23	4	86	0	113	635
04:30 PM	109	177	3	0	289	5	4	1	0	10	2	287	21	0	310	15	5	94	0	114	723
04:45 PM	94	187	0	0	281	5	2	1	3	11	1	292	30	2	325	18	5	77	0	100	717
Total	391	681	9	0	1081	15	9	5	5	34	10	1068	100	4	1182	76	17	345	0	438	2735
05:00 PM	108	220	3	0	331	4	4	0	0	8	4	333	40	1	378	19	1	88	0	108	825
05:15 PM	102	176	3	0	281	0	4	2	4	10	1	321	52	3	377	14	4	86	0	104	772
05:30 PM	100	176	4	0	280	3	5	2	0	10	2	298	47	2	349	17	3	63	0	83	722
05:45 PM	79	182	3	0	264	2	3	1	0	6	0	237	21	0	258	18	6	83	0	107	635
Total	389	754	13	0	1156	9	16	5	4	34	7	1189	160	6	1362	68	14	320	0	402	2954
Grand Total	780	1435	22	0	2237	24	25	10	9	68	17	2257	260	10	2544	144	31	665	0	840	5689
Apprch %	34.9	64.1	1	0		35.3	36.8	14.7	13.2		0.7	88.7	10.2	0.4		17.1	3.7	79.2	0		
Total %	13.7	25.2	0.4	0	39.3	0.4	0.4	0.2	0.2	1.2	0.3	39.7	4.6	0.2	44.7	2.5	0.5	11.7	0	14.8	

	NATIVIDAD RD Southbound				LA POSADA WAY Westbound				SHERWOOD DR Northbound				E BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**109**	177	**3**	289	**5**	**4**	1	**10**	2	287	21	310	15	**5**	**94**	**114**	723
04:45 PM	94	187	0	281	5	2	1	8	1	292	30	323	18	5	77	100	712
05:00 PM	108	**220**	3	**331**	4	4	0	8	**4**	**333**	40	**377**	**19**	1	88	108	**824**
05:15 PM	102	176	3	281	0	4	**2**	6	1	321	**52**	374	14	4	86	104	765
Total Volume	413	760	9	1182	14	14	4	32	8	1233	143	1384	66	15	345	426	3024
% App. Total	34.9	64.3	0.8		43.8	43.8	12.5		0.6	89.1	10.3		15.5	3.5	81		
PHF	.947	.864	.750	.893	.700	.875	.500	.800	.500	.926	.688	.918	.868	.750	.918	.934	.917

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File Name : 38PM FINAL
Site Code : 00000038
Start Date : 1/14/2016
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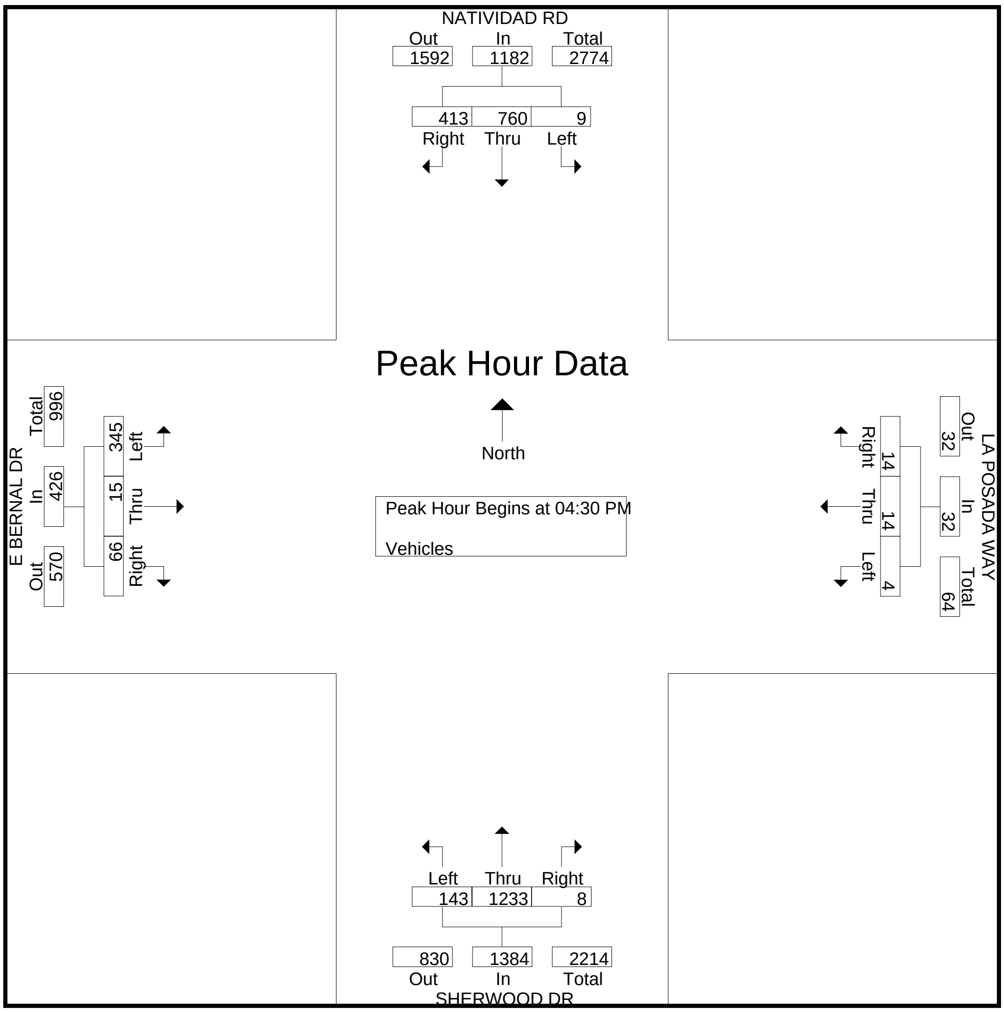

Traffic Data Service

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File Name : 39PM FINAL
Site Code : 00000039
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E LAUREL DR Southbound					N SANBORN RD Westbound					E LAUREL DR Northbound					N SANBORN RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	60	66	75	12	213	45	91	8	0	144	5	84	15	2	106	16	144	69	4	233	696
04:15 PM	62	66	76	10	214	62	113	3	0	178	8	68	11	8	95	12	155	57	13	237	724
04:30 PM	73	64	70	3	210	67	111	4	1	183	7	77	10	6	100	22	161	70	0	253	746
04:45 PM	83	56	77	7	223	50	110	8	0	168	14	70	19	0	103	11	147	92	6	256	750
Total	278	252	298	32	860	224	425	23	1	673	34	299	55	16	404	61	607	288	23	979	2916
05:00 PM	81	58	74	13	226	62	142	11	0	215	13	95	9	0	117	23	209	81	4	317	875
05:15 PM	84	62	72	9	227	57	127	8	6	198	16	73	22	2	113	14	186	83	0	283	821
05:30 PM	82	64	96	16	258	67	118	14	2	201	16	76	11	1	104	15	178	93	2	288	851
05:45 PM	59	71	81	4	215	66	105	11	0	182	10	68	18	5	101	15	164	78	7	264	762
Total	306	255	323	42	926	252	492	44	8	796	55	312	60	8	435	67	737	335	13	1152	3309
Grand Total	584	507	621	74	1786	476	917	67	9	1469	89	611	115	24	839	128	1344	623	36	2131	6225
Apprch %	32.7	28.4	34.8	4.1		32.4	62.4	4.6	0.6		10.6	72.8	13.7	2.9		6	63.1	29.2	1.7		
Total %	9.4	8.1	10	1.2	28.7	7.6	14.7	1.1	0.1	23.6	1.4	9.8	1.8	0.4	13.5	2.1	21.6	10	0.6	34.2	

	E LAUREL DR Southbound				N SANBORN RD Westbound				E LAUREL DR Northbound				N SANBORN RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	81	58	74	213	62	**142**	11	**215**	13	**95**	9	**117**	**23**	**209**	81	**313**	**858**
05:15 PM	**84**	62	72	218	57	127	8	192	**16**	73	**22**	111	14	186	83	283	804
05:30 PM	82	64	**96**	**242**	**67**	118	**14**	199	16	76	11	103	15	178	**93**	286	830
05:45 PM	59	**71**	81	211	66	105	11	182	10	68	18	96	15	164	78	257	746
Total Volume	306	255	323	884	252	492	44	788	55	312	60	427	67	737	335	1139	3238
% App. Total	34.6	28.8	36.5		32	62.4	5.6		12.9	73.1	14.1		5.9	64.7	29.4		
PHF	.911	.898	.841	.913	.940	.866	.786	.916	.859	.821	.682	.912	.728	.882	.901	.910	.943

Traffic Data Service

Campbell, CA
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File Name : 39PM FINAL
Site Code : 00000039
Start Date : 11/17/2015
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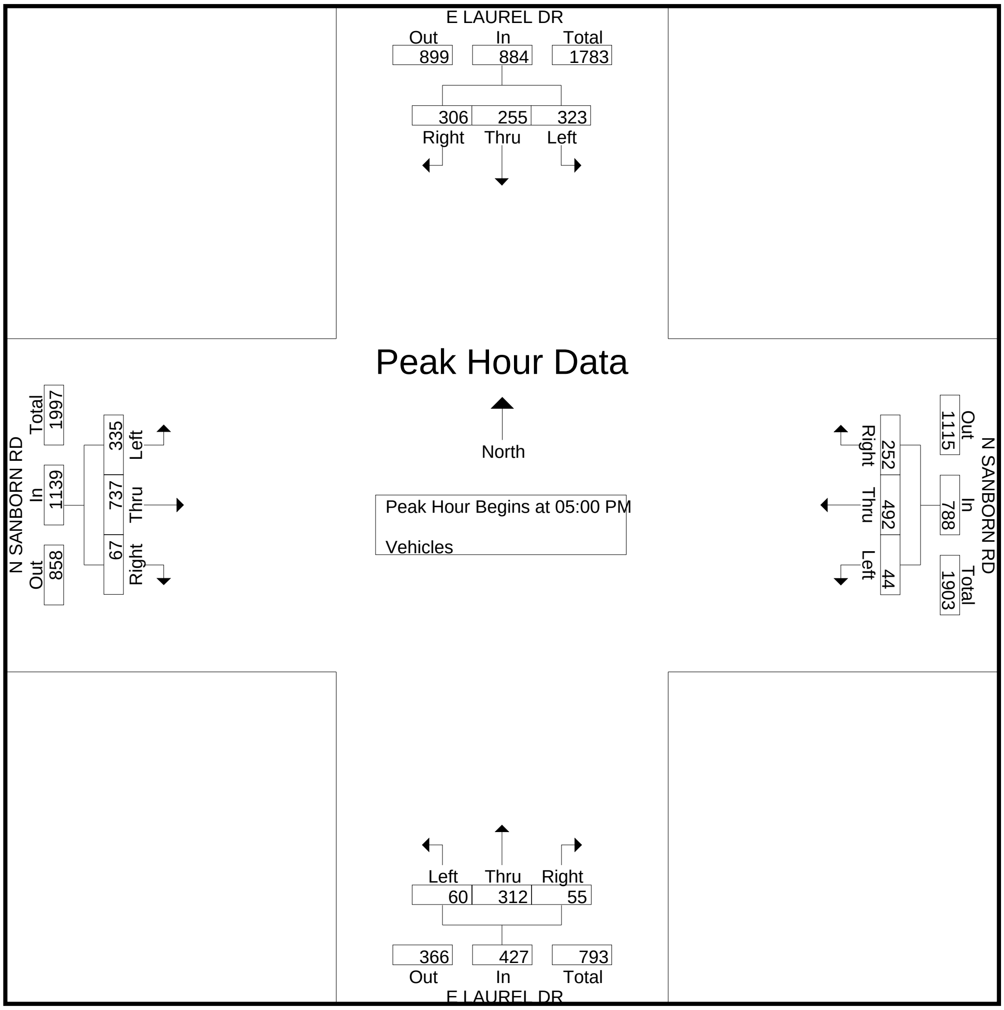

Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 40PM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E BORONDA RD Southbound					WILLIAMS RD Westbound					Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	68	0	10	0	78	9	26	0	0	35	0	0	0	0	0	0	17	60	0	77	190
04:15 PM	80	0	11	0	91	8	22	0	0	30	0	0	0	0	0	0	16	58	0	74	195
04:30 PM	46	0	4	0	50	31	63	0	0	94	0	0	0	0	0	0	14	56	0	70	214
04:45 PM	55	0	9	0	64	28	57	0	0	85	0	0	0	0	0	0	14	56	0	70	219
Total	249	0	34	0	283	76	168	0	0	244	0	0	0	0	0	0	61	230	0	291	818
05:00 PM	44	0	10	0	54	34	63	0	0	97	0	0	0	0	0	0	11	70	0	81	232
05:15 PM	62	0	12	0	74	18	58	0	0	76	0	0	0	0	0	0	26	74	0	100	250
05:30 PM	60	0	10	0	70	22	27	0	0	49	0	0	0	0	0	0	13	66	0	79	198
05:45 PM	76	0	12	0	88	8	30	0	0	38	0	0	0	0	0	0	7	44	0	51	177
Total	242	0	44	0	286	82	178	0	0	260	0	0	0	0	0	0	57	254	0	311	857
Grand Total	491	0	78	0	569	158	346	0	0	504	0	0	0	0	0	0	118	484	0	602	1675
Apprch %	86.3	0	13.7	0		31.3	68.7	0	0		0	0	0	0		0	19.6	80.4	0		
Total %	29.3	0	4.7	0	34	9.4	20.7	0	0	30.1	0	0	0	0	0	0	7	28.9	0	35.9	

	E BORONDA RD Southbound				WILLIAMS RD Westbound				Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	46	0	4	50	31	**63**	0	94	0	0	0	0	0	14	56	70	214
04:45 PM	55	0	9	64	28	57	0	85	0	0	0	0	0	14	56	70	219
05:00 PM	44	0	10	54	**34**	63	0	**97**	0	0	0	0	0	11	70	81	232
05:15 PM	**62**	0	**12**	**74**	18	58	0	76	0	0	0	0	0	**26**	**74**	**100**	**250**
Total Volume	207	0	35	242	111	241	0	352	0	0	0	0	0	65	256	321	915
% App. Total	85.5	0	14.5		31.5	68.5	0		0	0	0		0	20.2	79.8		
PHF	.835	.000	.729	.818	.816	.956	.000	.907	.000	.000	.000	.000	.000	.625	.865	.803	.915

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File Name : 40PM FINAL
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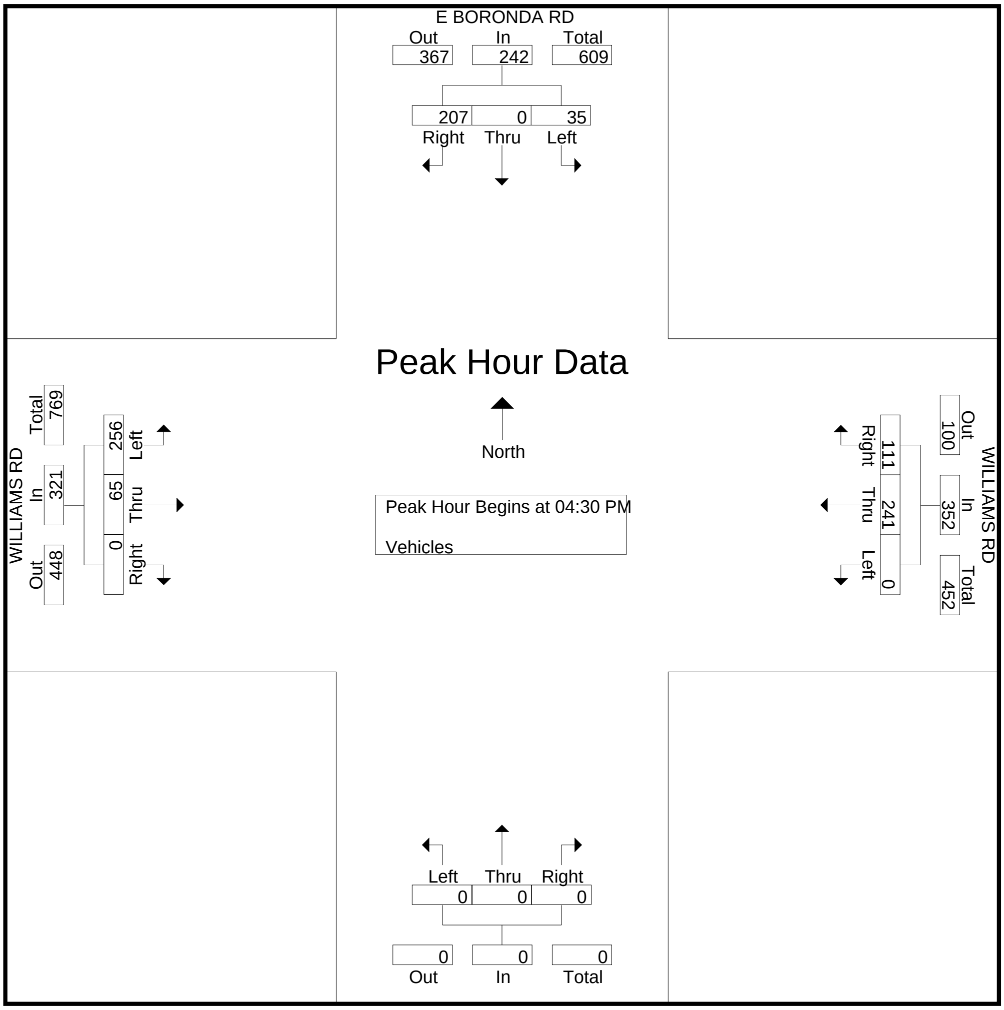

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File Name : 43PM FINAL
Site Code : 00000043
Start Date : 11/17/2015
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Groups Printed- Vehicles

	FREEDOM PKWY Southbound					WILLIAMS RD Westbound					FREEDOM PKWY Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	35	18	4	3	60	8	73	20	0	101	22	33	1	1	57	1	71	86	0	158	376
04:15 PM	45	20	1	6	72	13	65	27	0	105	19	30	0	1	50	1	60	81	5	147	374
04:30 PM	27	22	1	1	51	12	87	13	0	112	20	30	1	0	51	1	79	75	3	158	372
04:45 PM	37	15	1	1	54	16	93	19	0	128	21	32	0	0	53	1	71	88	1	161	396
Total	144	75	7	11	237	49	318	79	0	446	82	125	2	2	211	4	281	330	9	624	1518
05:00 PM	44	26	5	1	76	14	81	19	0	114	31	29	0	0	60	5	55	87	0	147	397
05:15 PM	54	11	4	1	70	12	90	25	0	127	25	32	3	0	60	6	94	77	0	177	434
05:30 PM	55	23	3	0	81	13	58	18	0	89	24	35	0	0	59	2	67	99	0	168	397
05:45 PM	42	26	3	0	71	11	69	30	0	110	11	25	0	0	36	2	55	77	0	134	351
Total	195	86	15	2	298	50	298	92	0	440	91	121	3	0	215	15	271	340	0	626	1579
Grand Total	339	161	22	13	535	99	616	171	0	886	173	246	5	2	426	19	552	670	9	1250	3097
Apprch %	63.4	30.1	4.1	2.4		11.2	69.5	19.3	0		40.6	57.7	1.2	0.5		1.5	44.2	53.6	0.7		
Total %	10.9	5.2	0.7	0.4	17.3	3.2	19.9	5.5	0	28.6	5.6	7.9	0.2	0.1	13.8	0.6	17.8	21.6	0.3	40.4	

	FREEDOM PKWY Southbound				WILLIAMS RD Westbound				FREEDOM PKWY Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	37	15	1	53	**16**	**93**	19	**128**	21	32	0	53	1	71	88	160	394
05:00 PM	44	**26**	**5**	75	14	81	19	114	**31**	29	0	**60**	5	55	87	147	396
05:15 PM	54	11	4	69	12	90	**25**	127	25	32	**3**	60	**6**	**94**	77	**177**	**433**
05:30 PM	**55**	23	3	**81**	13	58	18	89	24	**35**	0	59	2	67	**99**	168	397
Total Volume	190	75	13	278	55	322	81	458	101	128	3	232	14	287	351	652	1620
% App. Total	68.3	27	4.7		12	70.3	17.7		43.5	55.2	1.3		2.1	44	53.8		
PHF	.864	.721	.650	.858	.859	.866	.810	.895	.815	.914	.250	.967	.583	.763	.886	.921	.935

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File Name : 43PM FINAL
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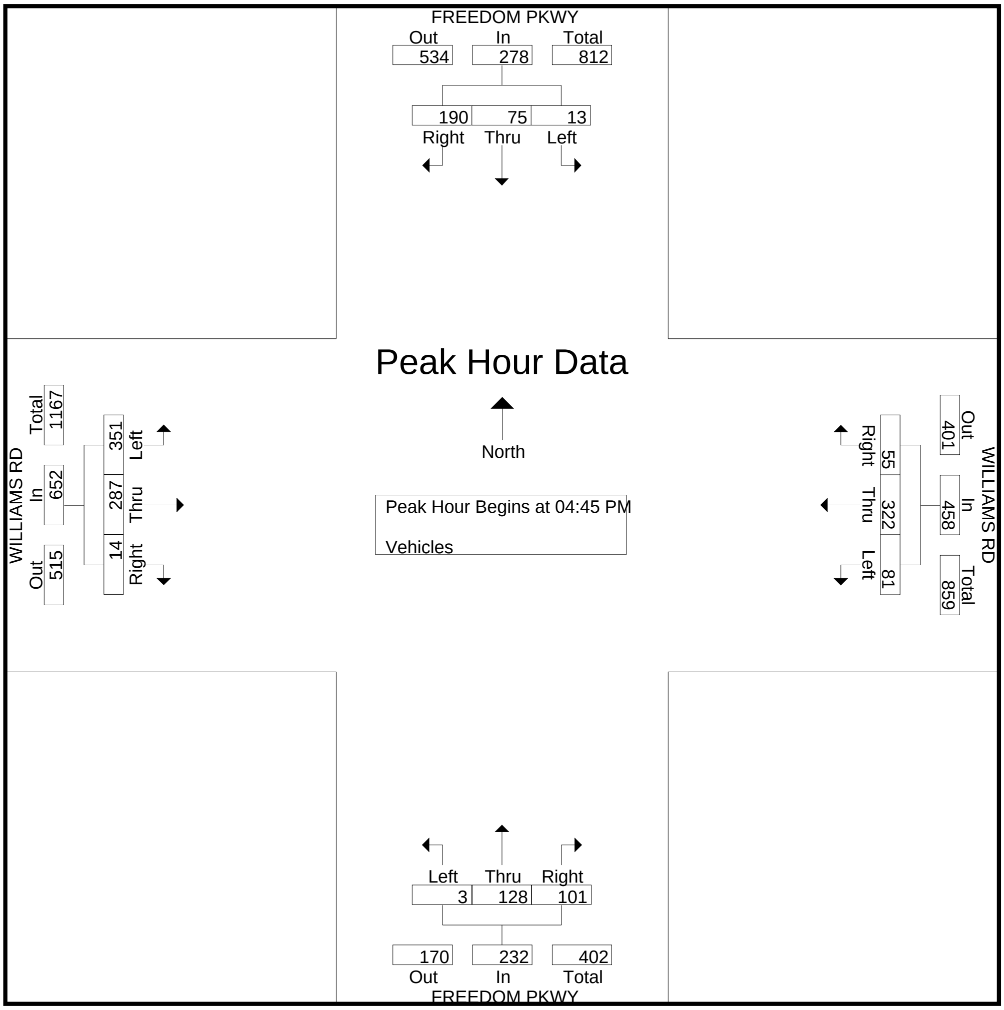

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File Name : 44PM FINAL
Site Code : 00000044
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	BARDIN WAY Southbound					WILLIAMS RD Westbound					BARDIN RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	5	2	5	18	30	2	142	35	23	202	68	1	61	7	137	18	156	12	4	190	559
04:15 PM	7	3	5	14	29	4	140	31	13	188	82	3	50	6	141	28	145	5	5	183	541
04:30 PM	10	2	4	19	35	4	147	28	7	186	73	2	70	7	152	22	151	7	4	184	557
04:45 PM	11	2	4	12	29	4	112	42	15	173	86	4	79	7	176	26	170	15	2	213	591
Total	33	9	18	63	123	14	541	136	58	749	309	10	260	27	606	94	622	39	15	770	2248
05:00 PM	15	1	6	15	37	6	156	29	0	191	68	2	69	1	140	22	157	16	5	200	568
05:15 PM	10	1	3	6	20	5	133	38	0	176	84	1	73	8	166	29	183	9	7	228	590
05:30 PM	7	1	8	6	22	5	117	45	0	167	61	3	56	0	120	24	167	13	1	205	514
05:45 PM	5	0	7	0	12	6	113	52	0	171	62	3	55	0	120	27	158	17	0	202	505
Total	37	3	24	27	91	22	519	164	0	705	275	9	253	9	546	102	665	55	13	835	2177
Grand Total	70	12	42	90	214	36	1060	300	58	1454	584	19	513	36	1152	196	1287	94	28	1605	4425
Apprch %	32.7	5.6	19.6	42.1		2.5	72.9	20.6	4		50.7	1.6	44.5	3.1		12.2	80.2	5.9	1.7		
Total %	1.6	0.3	0.9	2	4.8	0.8	24	6.8	1.3	32.9	13.2	0.4	11.6	0.8	26	4.4	29.1	2.1	0.6	36.3	

	BARDIN WAY Southbound				WILLIAMS RD Westbound				BARDIN RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	10	**2**	4	16	4	147	28	179	73	2	70	145	22	151	7	180	520
04:45 PM	11	2	4	17	4	112	**42**	158	**86**	**4**	**79**	**169**	26	170	15	211	555
05:00 PM	**15**	1	**6**	**22**	**6**	**156**	29	**191**	68	2	69	139	22	157	**16**	195	547
05:15 PM	10	1	3	14	5	133	38	176	84	1	73	158	**29**	**183**	9	**221**	**569**
Total Volume	46	6	17	69	19	548	137	704	311	9	291	611	99	661	47	807	2191
% App. Total	66.7	8.7	24.6		2.7	77.8	19.5		50.9	1.5	47.6		12.3	81.9	5.8		
PHF	.767	.750	.708	.784	.792	.878	.815	.921	.904	.563	.921	.904	.853	.903	.734	.913	.963

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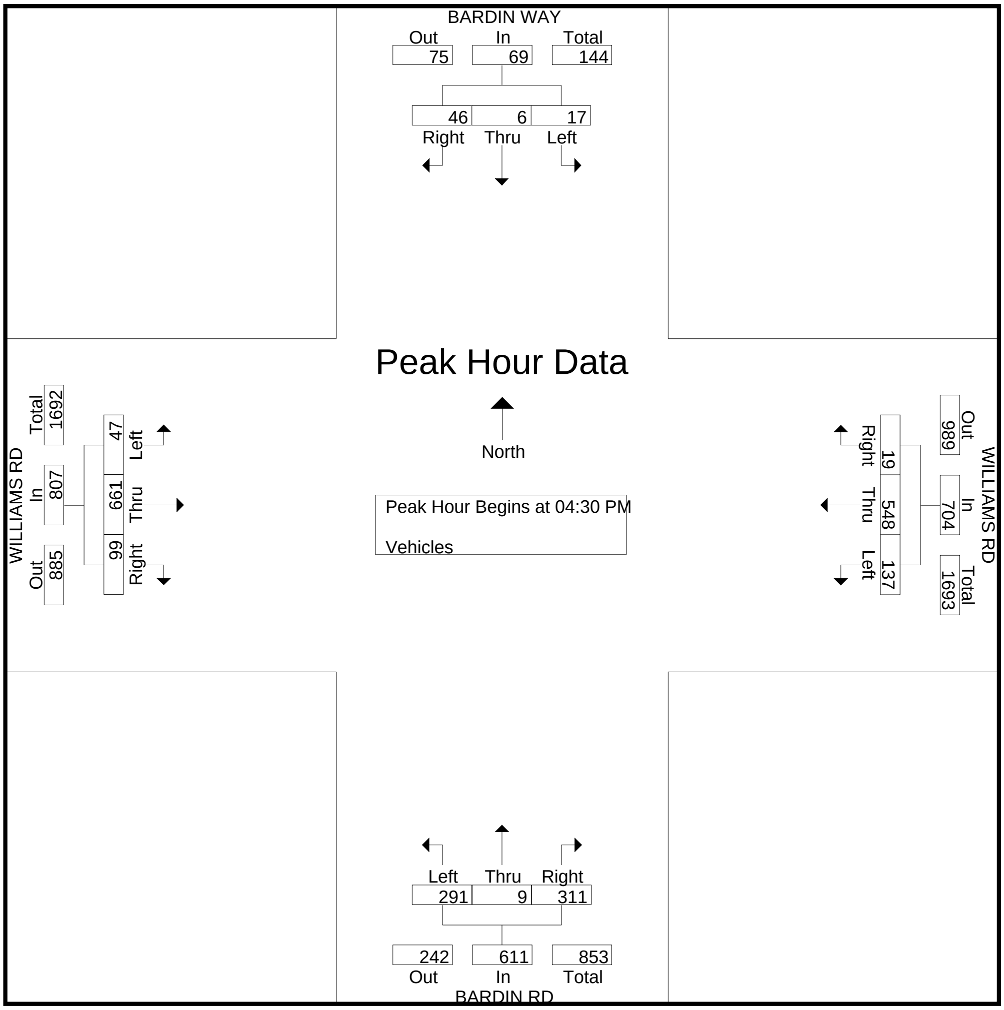

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File Name : 41PM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicles

	E MARKET ST Southbound					WILLIAMS RD Westbound					E MARKET ST Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	10	17	42	2	71	44	125	23	9	201	57	24	5	1	87	10	177	4	0	191	550
04:15 PM	10	17	37	0	64	33	150	33	9	225	58	27	10	2	97	15	171	6	0	192	578
04:30 PM	10	24	33	1	68	21	128	22	6	177	57	26	9	0	92	13	178	6	1	198	535
04:45 PM	14	30	50	1	95	37	110	31	3	181	68	38	8	4	118	14	204	5	1	224	618
Total	44	88	162	4	298	135	513	109	27	784	240	115	32	7	394	52	730	21	2	805	2281
05:00 PM	12	31	57	0	100	49	120	34	16	219	62	30	9	3	104	15	200	9	0	224	647
05:15 PM	8	27	45	2	82	26	116	23	0	165	63	30	14	0	107	15	212	3	2	232	586
05:30 PM	6	44	48	2	100	26	112	12	7	157	45	19	7	0	71	11	215	6	0	232	560
05:45 PM	6	33	57	2	98	25	106	25	8	164	29	20	7	12	68	18	187	12	2	219	549
Total	32	135	207	6	380	126	454	94	31	705	199	99	37	15	350	59	814	30	4	907	2342
Grand Total	76	223	369	10	678	261	967	203	58	1489	439	214	69	22	744	111	1544	51	6	1712	4623
Apprch %	11.2	32.9	54.4	1.5		17.5	64.9	13.6	3.9		59	28.8	9.3	3		6.5	90.2	3	0.4		
Total %	1.6	4.8	8	0.2	14.7	5.6	20.9	4.4	1.3	32.2	9.5	4.6	1.5	0.5	16.1	2.4	33.4	1.1	0.1	37	

	E MARKET ST Southbound				WILLIAMS RD Westbound				E MARKET ST Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**14**	30	50	94	37	110	31	178	**68**	**38**	8	**114**	14	204	5	223	609
05:00 PM	12	31	**57**	**100**	**49**	**120**	**34**	**203**	62	30	9	101	**15**	200	**9**	224	**628**
05:15 PM	8	27	45	80	26	116	23	165	63	30	**14**	107	15	212	3	230	582
05:30 PM	6	**44**	48	98	26	112	12	150	45	19	7	71	11	**215**	6	**232**	551
Total Volume	40	132	200	372	138	458	100	696	238	117	38	393	55	831	23	909	2370
% App. Total	10.8	35.5	53.8		19.8	65.8	14.4		60.6	29.8	9.7		6.1	91.4	2.5		
PHF	.714	.750	.877	.930	.704	.954	.735	.857	.875	.770	.679	.862	.917	.966	.639	.980	.943

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File Name : 41PM FINAL
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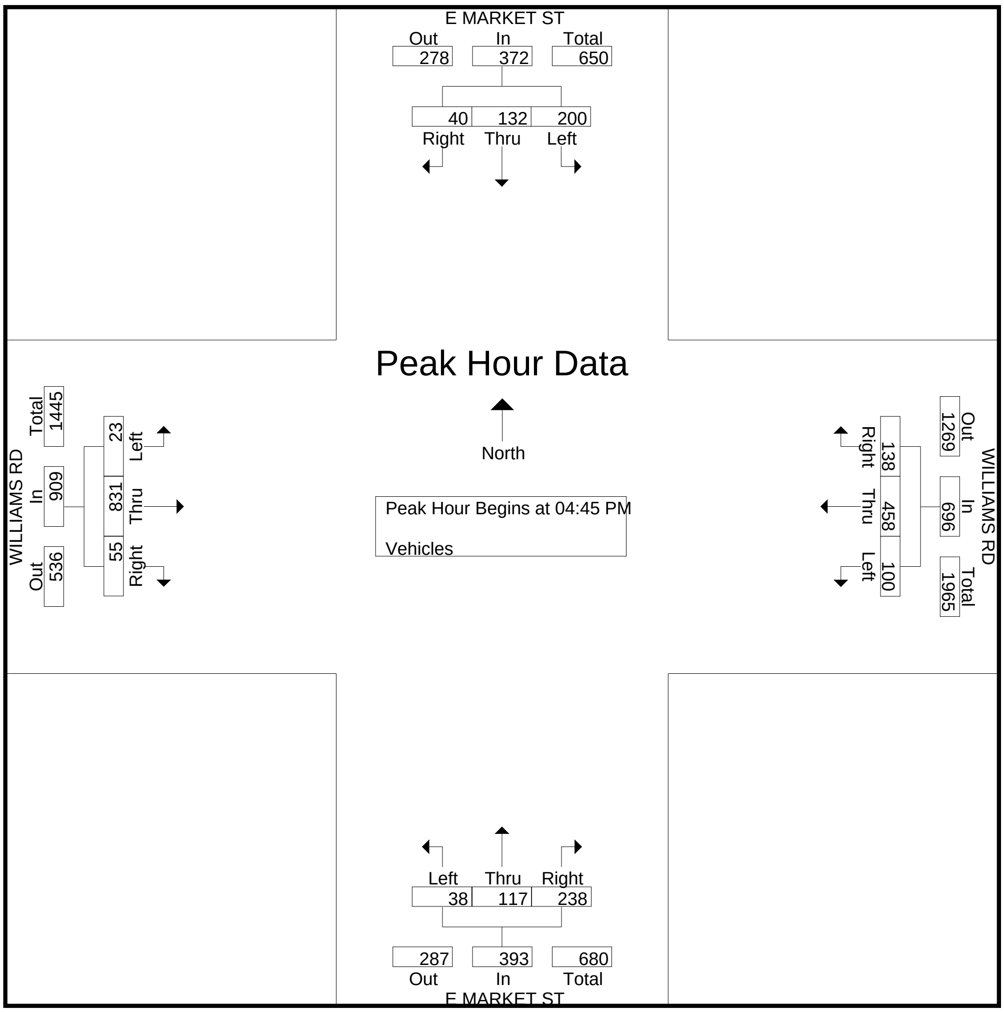

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File Name : 45PM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	WILLIAMS RD Southbound					E ALISAL ST Westbound					JOHN ST Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	44	67	0	1	112	3	20	36	0	59	43	99	5	7	154	5	27	49	1	82	407
04:15 PM	45	71	0	0	116	2	26	28	0	56	50	121	5	1	177	8	25	50	0	83	432
04:30 PM	52	61	2	3	118	4	41	34	0	79	48	123	5	5	181	6	27	66	0	99	477
04:45 PM	57	57	0	2	116	2	43	36	0	81	54	130	1	4	189	12	29	64	0	105	491
Total	198	256	2	6	462	11	130	134	0	275	195	473	16	17	701	31	108	229	1	369	1807
05:00 PM	37	64	0	3	104	1	41	35	0	77	67	114	5	6	192	11	29	57	0	97	470
05:15 PM	42	49	0	5	96	5	36	39	3	83	75	125	4	3	207	4	31	70	0	105	491
05:30 PM	30	71	0	0	101	2	26	41	1	70	60	143	8	1	212	13	25	65	0	103	486
05:45 PM	40	66	0	2	108	2	24	43	2	71	46	101	5	2	154	10	31	58	0	99	432
Total	149	250	0	10	409	10	127	158	6	301	248	483	22	12	765	38	116	250	0	404	1879
Grand Total	347	506	2	16	871	21	257	292	6	576	443	956	38	29	1466	69	224	479	1	773	3686
Apprch %	39.8	58.1	0.2	1.8		3.6	44.6	50.7	1		30.2	65.2	2.6	2		8.9	29	62	0.1		
Total %	9.4	13.7	0.1	0.4	23.6	0.6	7	7.9	0.2	15.6	12	25.9	1	0.8	39.8	1.9	6.1	13	0	21	

	WILLIAMS RD Southbound				E ALISAL ST Westbound				JOHN ST Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**57**	57	0	**114**	2	**43**	36	**81**	54	130	1	185	12	29	64	**105**	**485**
05:00 PM	37	64	0	101	1	41	35	77	67	114	5	186	11	29	57	97	461
05:15 PM	42	49	0	91	**5**	36	39	80	**75**	125	4	204	4	**31**	**70**	105	480
05:30 PM	30	**71**	0	101	2	26	**41**	69	60	**143**	**8**	**211**	**13**	25	65	103	484
Total Volume	166	241	0	407	10	146	151	307	256	512	18	786	40	114	256	410	1910
% App. Total	40.8	59.2	0		3.3	47.6	49.2		32.6	65.1	2.3		9.8	27.8	62.4		
PHF	.728	.849	.000	.893	.500	.849	.921	.948	.853	.895	.563	.931	.769	.919	.914	.976	.985

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File Name : 45PM FINAL
Site Code : 00000045
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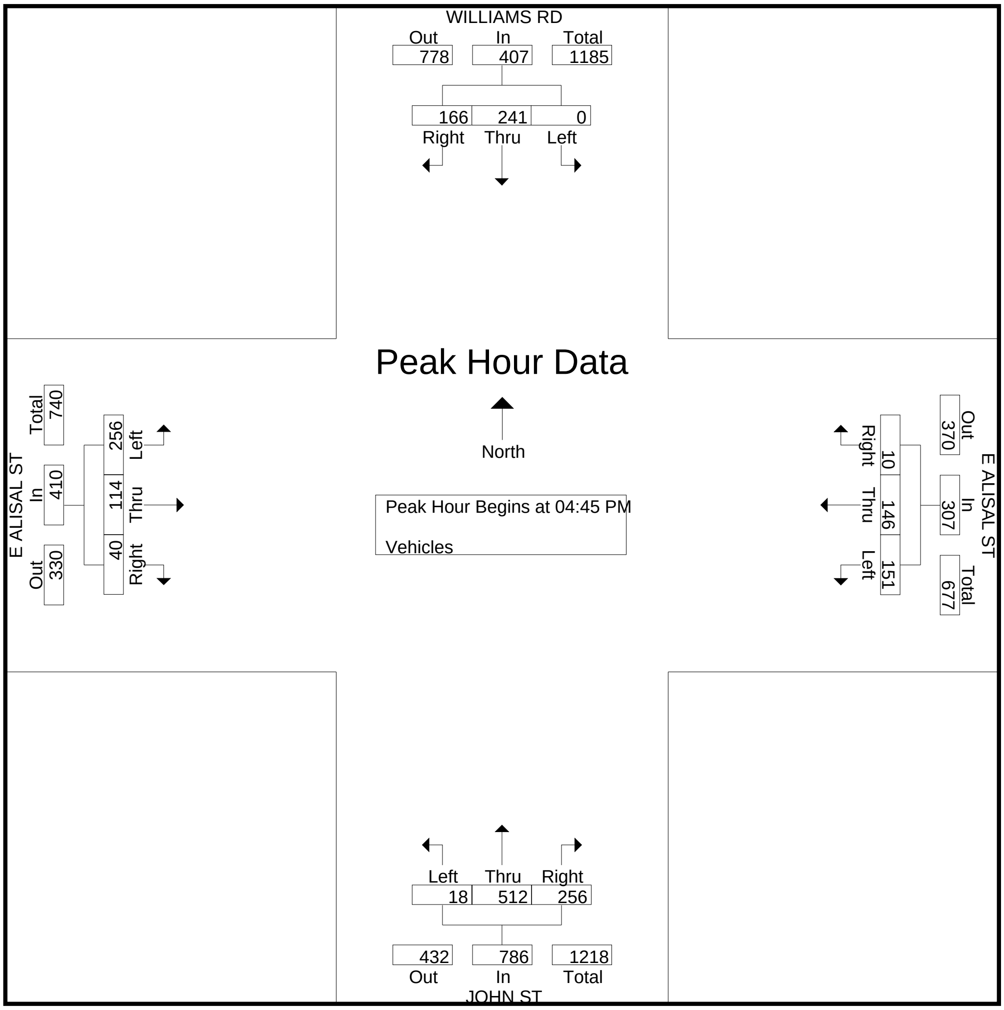

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File Name : 46PM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	S SANBORN RD Southbound					JOHN ST Westbound					S SANBORN RD Northbound					JOHN ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	41	120	2	2	165	5	56	43	3	107	121	175	28	1	325	25	67	25	1	118	715
04:15 PM	36	111	8	2	157	2	67	70	3	142	122	160	35	4	321	20	48	35	4	107	727
04:30 PM	34	115	3	1	153	9	53	55	5	122	120	202	29	6	357	27	51	27	3	108	740
04:45 PM	55	98	6	0	159	0	65	56	8	129	144	187	31	2	364	12	71	31	0	114	766
Total	166	444	19	5	634	16	241	224	19	500	507	724	123	13	1367	84	237	118	8	447	2948
05:00 PM	28	130	7	0	165	3	53	61	6	123	128	194	42	4	368	14	71	32	9	126	782
05:15 PM	42	84	5	0	131	7	56	41	1	105	153	197	40	0	390	24	71	29	0	124	750
05:30 PM	36	109	13	0	158	7	58	40	12	117	144	230	31	1	406	14	77	42	1	134	815
05:45 PM	39	79	7	0	125	1	70	51	2	124	140	158	33	0	331	14	62	33	1	110	690
Total	145	402	32	0	579	18	237	193	21	469	565	779	146	5	1495	66	281	136	11	494	3037
Grand Total	311	846	51	5	1213	34	478	417	40	969	1072	1503	269	18	2862	150	518	254	19	941	5985
Apprch %	25.6	69.7	4.2	0.4		3.5	49.3	43	4.1		37.5	52.5	9.4	0.6		15.9	55	27	2		
Total %	5.2	14.1	0.9	0.1	20.3	0.6	8	7	0.7	16.2	17.9	25.1	4.5	0.3	47.8	2.5	8.7	4.2	0.3	15.7	

	S SANBORN RD Southbound				JOHN ST Westbound				S SANBORN RD Northbound				JOHN ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**55**	98	6	159	0	**65**	56	**121**	144	187	31	362	12	71	31	114	756
05:00 PM	28	**130**	7	**165**	3	53	**61**	117	128	194	**42**	364	14	71	32	117	763
05:15 PM	42	84	5	131	**7**	56	41	104	**153**	197	40	390	**24**	71	29	124	749
05:30 PM	36	109	**13**	158	7	58	40	105	144	**230**	31	**405**	14	**77**	**42**	**133**	**801**
Total Volume	161	421	31	613	17	232	198	447	569	808	144	1521	64	290	134	488	3069
% App. Total	26.3	68.7	5.1		3.8	51.9	44.3		37.4	53.1	9.5		13.1	59.4	27.5		
PHF	.732	.810	.596	.929	.607	.892	.811	.924	.930	.878	.857	.939	.667	.942	.798	.917	.958

Traffic Data Service

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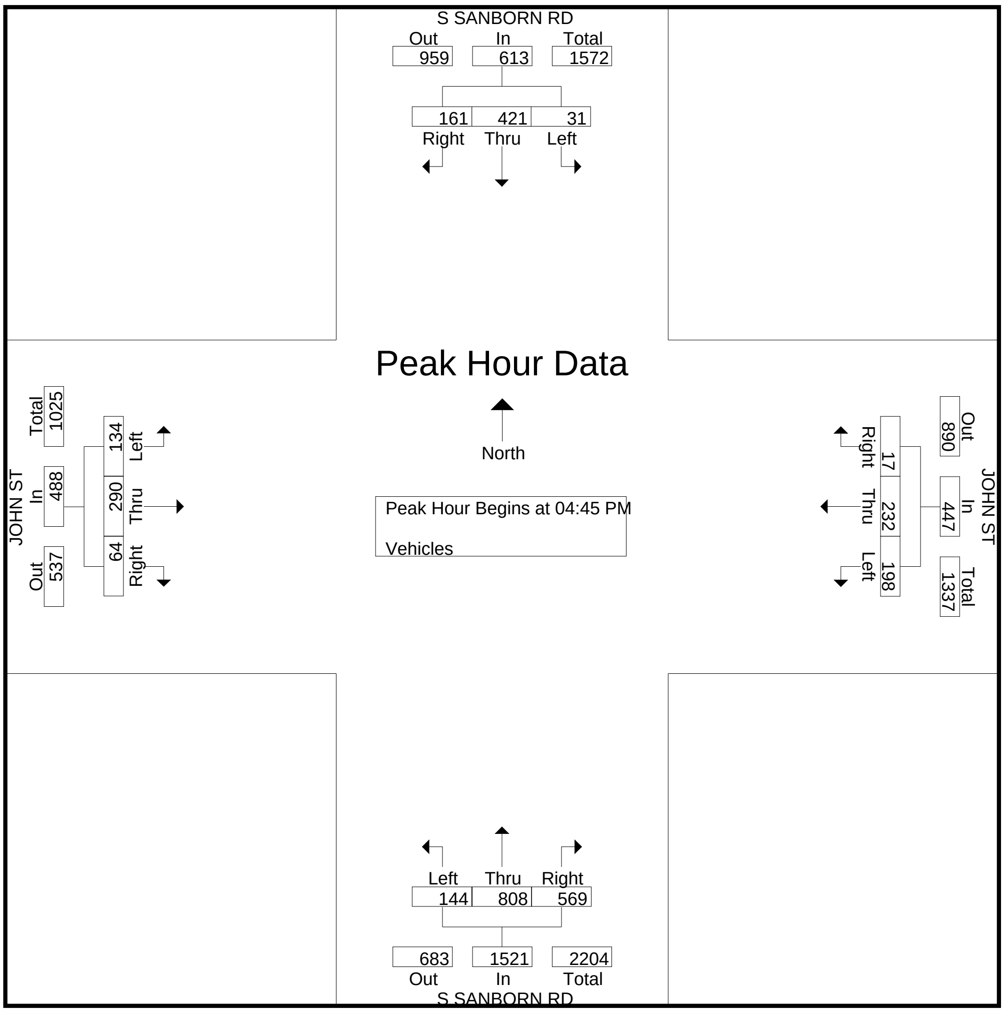
File Name : 46PM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 2



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File Name : 47PM FINAL
Site Code : 00000047
Start Date : 1/14/2016

Groups Printed- Vehicles

	BARDIN RD Southbound					DRIVEWAY Westbound					ALISAL RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	8	16	0	3	27	0	0	0	3	3	0	36	38	0	74	46	0	45	0	91	195
04:15 PM	15	15	0	3	33	0	0	0	2	2	0	28	44	0	72	55	0	46	0	101	208
04:30 PM	13	8	0	0	21	0	0	0	0	0	0	68	41	0	109	46	0	36	0	82	212
04:45 PM	18	12	0	2	32	0	0	0	0	0	0	73	70	0	143	53	0	55	0	108	283
Total	54	51	0	8	113	0	0	0	5	5	0	205	193	0	398	200	0	182	0	382	898
05:00 PM	10	16	0	1	27	0	0	0	0	0	0	53	55	0	108	51	0	48	0	99	234
05:15 PM	22	18	0	0	40	0	0	0	0	0	0	59	51	0	110	75	0	43	0	118	268
05:30 PM	13	16	0	4	33	0	0	0	0	0	0	40	34	0	74	59	0	51	0	110	217
05:45 PM	12	32	0	0	44	0	0	0	0	0	0	32	29	0	61	69	0	26	0	95	200
Total	57	82	0	5	144	0	0	0	0	0	0	184	169	0	353	254	0	168	0	422	919
Grand Total	111	133	0	13	257	0	0	0	5	5	0	389	362	0	751	454	0	350	0	804	1817
Apprch %	43.2	51.8	0	5.1		0	0	0	100		0	51.8	48.2	0		56.5	0	43.5	0		
Total %	6.1	7.3	0	0.7	14.1	0	0	0	0.3	0.3	0	21.4	19.9	0	41.3	25	0	19.3	0	44.2	

	BARDIN RD Southbound				DRIVEWAY Westbound				ALISAL RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	18	12	0	30	0	0	0	0	0	**73**	**70**	**143**	53	0	**55**	108	**281**
05:00 PM	10	16	0	26	0	0	0	0	0	53	55	108	51	0	48	99	233
05:15 PM	**22**	**18**	0	**40**	0	0	0	0	0	59	51	110	**75**	0	43	**118**	268
05:30 PM	13	16	0	29	0	0	0	0	0	40	34	74	59	0	51	110	213
Total Volume	63	62	0	125	0	0	0	0	0	225	210	435	238	0	197	435	995
% App. Total	50.4	49.6	0		0	0	0		0	51.7	48.3		54.7	0	45.3		
PHF	.716	.861	.000	.781	.000	.000	.000	.000	.000	.771	.750	.760	.793	.000	.895	.922	.885

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File Name : 47PM FINAL
Site Code : 00000047
Start Date : 1/14/2016
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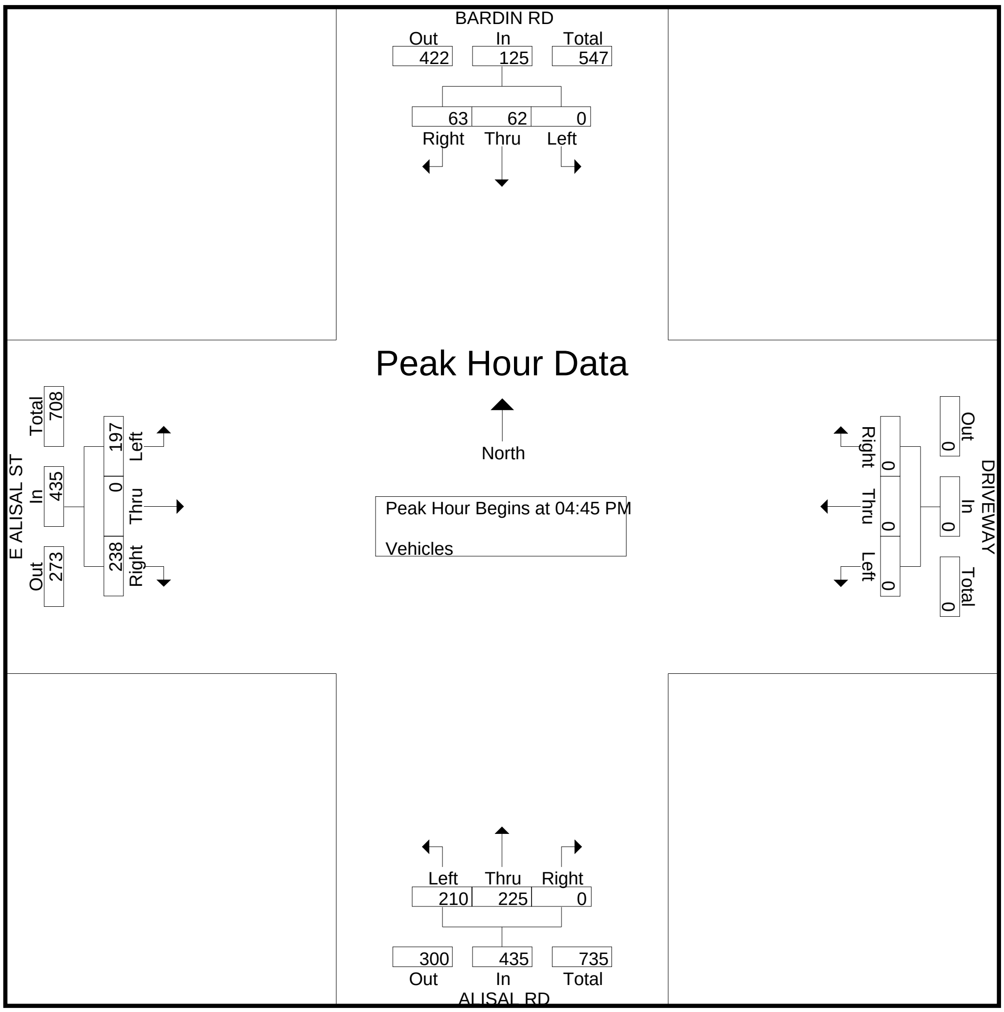

Traffic Data Service

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File Name : 48PM FINAL
Site Code : 00000048
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	SKYWAY BLVD Southbound					Westbound					SKYWAY BLVD Northbound					AIRPORT BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	47	0	0	0	47	0	0	0	0	0	0	2	6	0	8	2	0	136	0	138	193
04:15 PM	44	0	0	0	44	0	0	0	0	0	0	3	6	0	9	4	0	114	0	118	171
04:30 PM	35	1	0	0	36	0	0	0	0	0	0	4	2	0	6	6	0	152	0	158	200
04:45 PM	42	0	0	0	42	0	0	0	0	0	0	0	2	0	2	5	0	124	0	129	173
Total	168	1	0	0	169	0	0	0	0	0	0	9	16	0	25	17	0	526	0	543	737
05:00 PM	40	0	0	0	40	0	0	0	0	0	0	9	2	0	11	3	0	153	0	156	207
05:15 PM	41	0	0	0	41	0	0	0	0	0	0	1	2	0	3	0	0	118	0	118	162
05:30 PM	39	3	0	0	42	0	0	0	0	0	0	1	4	0	5	0	0	107	0	107	154
05:45 PM	28	2	0	0	30	0	0	0	0	0	0	0	1	0	1	4	0	66	0	70	101
Total	148	5	0	0	153	0	0	0	0	0	0	11	9	0	20	7	0	444	0	451	624
Grand Total	316	6	0	0	322	0	0	0	0	0	0	20	25	0	45	24	0	970	0	994	1361
Apprch %	98.1	1.9	0	0		0	0	0	0		0	44.4	55.6	0		2.4	0	97.6	0		
Total %	23.2	0.4	0	0	23.7	0	0	0	0	0	0	1.5	1.8	0	3.3	1.8	0	71.3	0	73	

	SKYWAY BLVD Southbound				Westbound				SKYWAY BLVD Northbound				AIRPORT BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**44**	0	0	**44**	0	0	0	0	0	3	**6**	9	4	0	114	118	171
04:30 PM	35	**1**	0	36	0	0	0	0	0	4	2	6	**6**	0	152	**158**	200
04:45 PM	42	0	0	42	0	0	0	0	0	0	2	2	5	0	124	129	173
05:00 PM	40	0	0	40	0	0	0	0	0	**9**	2	**11**	3	0	**153**	156	**207**
Total Volume	161	1	0	162	0	0	0	0	0	16	12	28	18	0	543	561	751
% App. Total	99.4	0.6	0		0	0	0		0	57.1	42.9		3.2	0	96.8		
PHF	.915	.250	.000	.920	.000	.000	.000	.000	.000	.444	.500	.636	.750	.000	.887	.888	.907

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File Name : 48PM FINAL
Site Code : 00000048
Start Date : 1/14/2016
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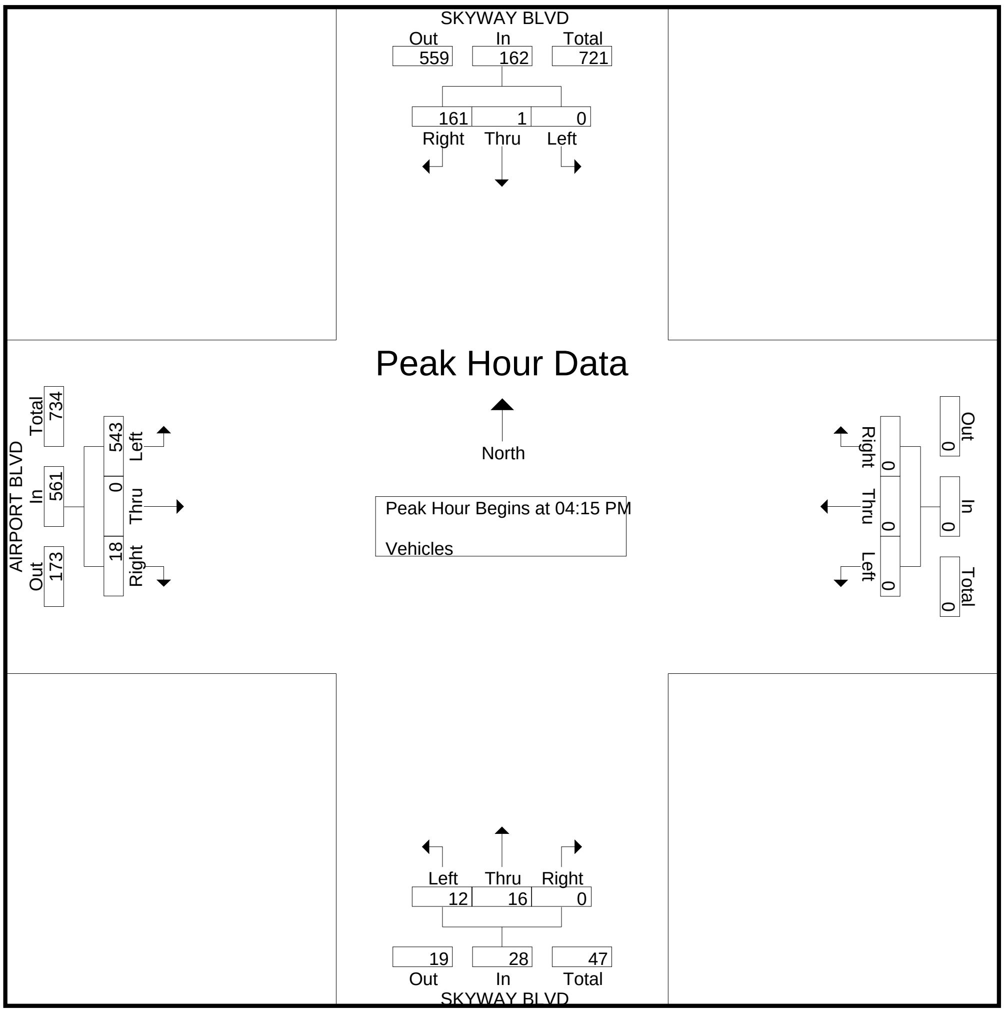

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(408) 377-2988
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File Name : 49PM FINAL
Site Code : 00000049
Start Date : 11/18/2015

Groups Printed- Vehicles

	N SANBORN RD Southbound					E ALISAL ST Westbound					S SANBORN RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	37	79	17	7	140	25	85	46	8	164	52	107	44	9	212	22	151	59	4	236	752
04:15 PM	29	83	23	7	142	18	73	37	2	130	42	129	50	16	237	23	128	48	6	205	714
04:30 PM	27	82	23	4	136	26	80	49	2	157	54	119	44	5	222	25	109	55	1	190	705
04:45 PM	33	102	21	10	166	16	84	28	4	132	64	123	58	17	262	19	145	46	8	218	778
Total	126	346	84	28	584	85	322	160	16	583	212	478	196	47	933	89	533	208	19	849	2949
05:00 PM	36	91	16	1	144	17	94	49	1	161	54	119	37	9	219	32	169	55	0	256	780
05:15 PM	43	85	18	1	147	14	93	35	3	145	59	159	46	10	274	12	139	48	2	201	767
05:30 PM	23	68	16	2	109	15	98	43	3	159	75	133	42	2	252	31	132	57	1	221	741
05:45 PM	25	81	17	4	127	13	90	36	3	142	41	125	43	5	214	27	107	60	2	196	679
Total	127	325	67	8	527	59	375	163	10	607	229	536	168	26	959	102	547	220	5	874	2967
Grand Total	253	671	151	36	1111	144	697	323	26	1190	441	1014	364	73	1892	191	1080	428	24	1723	5916
Apprch %	22.8	60.4	13.6	3.2		12.1	58.6	27.1	2.2		23.3	53.6	19.2	3.9		11.1	62.7	24.8	1.4		
Total %	4.3	11.3	2.6	0.6	18.8	2.4	11.8	5.5	0.4	20.1	7.5	17.1	6.2	1.2	32	3.2	18.3	7.2	0.4	29.1	

	N SANBORN RD Southbound				E ALISAL ST Westbound				S SANBORN RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	33	**102**	**21**	**156**	16	84	28	128	64	123	**58**	245	19	145	46	210	739
05:00 PM	36	91	16	143	**17**	94	**49**	**160**	54	119	37	210	**32**	**169**	55	**256**	**769**
05:15 PM	**43**	85	18	146	14	93	35	142	59	**159**	46	**264**	12	139	48	199	751
05:30 PM	23	68	16	107	15	**98**	43	156	**75**	133	42	250	31	132	**57**	220	733
Total Volume	135	346	71	552	62	369	155	586	252	534	183	969	94	585	206	885	2992
% App. Total	24.5	62.7	12.9		10.6	63	26.5		26	55.1	18.9		10.6	66.1	23.3		
PHF	.785	.848	.845	.885	.912	.941	.791	.916	.840	.840	.789	.918	.734	.865	.904	.864	.973

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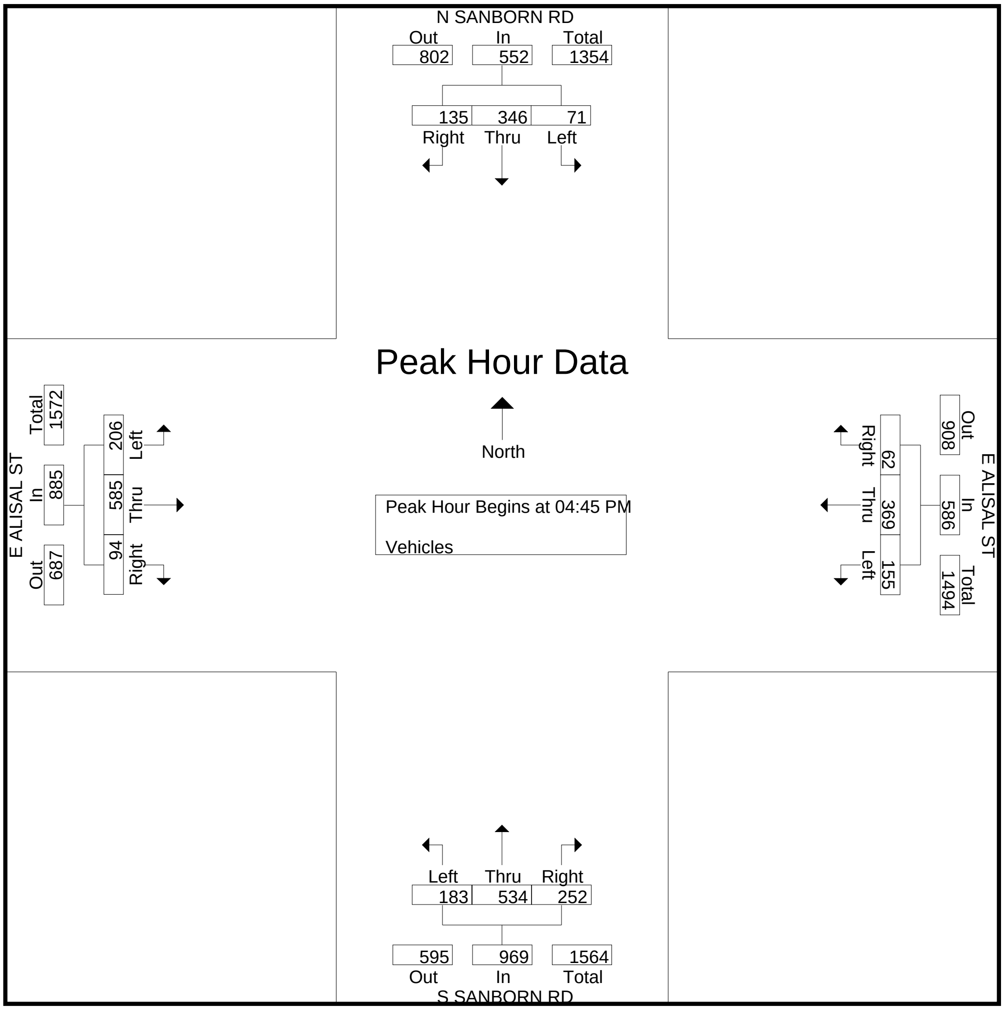
File Name : 49PM FINAL
Site Code : 00000049
Start Date : 11/18/2015
Page No : 2



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File Name : 50PM FINAL
Site Code : 00000050
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	ADAMS ST Southbound					W LAUREL DR Westbound					Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	77	0	13	0	90	5	202	0	1	208	0	0	0	0	0	0	310	84	0	394	692
04:15 PM	64	0	5	1	70	2	234	0	0	236	0	0	0	0	0	0	316	97	0	413	719
04:30 PM	78	0	13	0	91	5	209	0	0	214	0	0	0	0	0	0	324	108	0	432	737
04:45 PM	65	0	8	0	73	4	180	0	0	184	0	0	0	0	0	0	360	129	0	489	746
Total	284	0	39	1	324	16	825	0	1	842	0	0	0	0	0	0	1310	418	0	1728	2894
05:00 PM	82	0	4	0	86	4	225	0	0	229	0	0	0	0	0	0	343	111	0	454	769
05:15 PM	75	0	12	0	87	7	244	0	0	251	0	0	0	0	0	0	327	108	0	435	773
05:30 PM	63	0	10	0	73	10	164	0	0	174	0	0	0	0	0	0	290	123	0	413	660
05:45 PM	64	0	6	0	70	4	198	0	0	202	0	0	0	0	0	0	309	73	0	382	654
Total	284	0	32	0	316	25	831	0	0	856	0	0	0	0	0	0	1269	415	0	1684	2856
Grand Total	568	0	71	1	640	41	1656	0	1	1698	0	0	0	0	0	0	2579	833	0	3412	5750
Apprch %	88.8	0	11.1	0.2		2.4	97.5	0	0.1		0	0	0	0		0	75.6	24.4	0		
Total %	9.9	0	1.2	0	11.1	0.7	28.8	0	0	29.5	0	0	0	0	0	0	44.9	14.5	0	59.3	

	ADAMS ST Southbound				W LAUREL DR Westbound				Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	78	0	**13**	**91**	5	209	0	214	0	0	0	0	0	324	108	432	737
04:45 PM	65	0	8	73	4	180	0	184	0	0	0	0	0	**360**	**129**	**489**	746
05:00 PM	**82**	0	4	86	4	225	0	229	0	0	0	0	0	343	111	454	769
05:15 PM	75	0	12	87	**7**	**244**	0	**251**	0	0	0	0	0	327	108	435	**773**
Total Volume	300	0	37	337	20	858	0	878	0	0	0	0	0	1354	456	1810	3025
% App. Total	89	0	11		2.3	97.7	0		0	0	0		0	74.8	25.2		
PHF	.915	.000	.712	.926	.714	.879	.000	.875	.000	.000	.000	.000	.000	.940	.884	.925	.978

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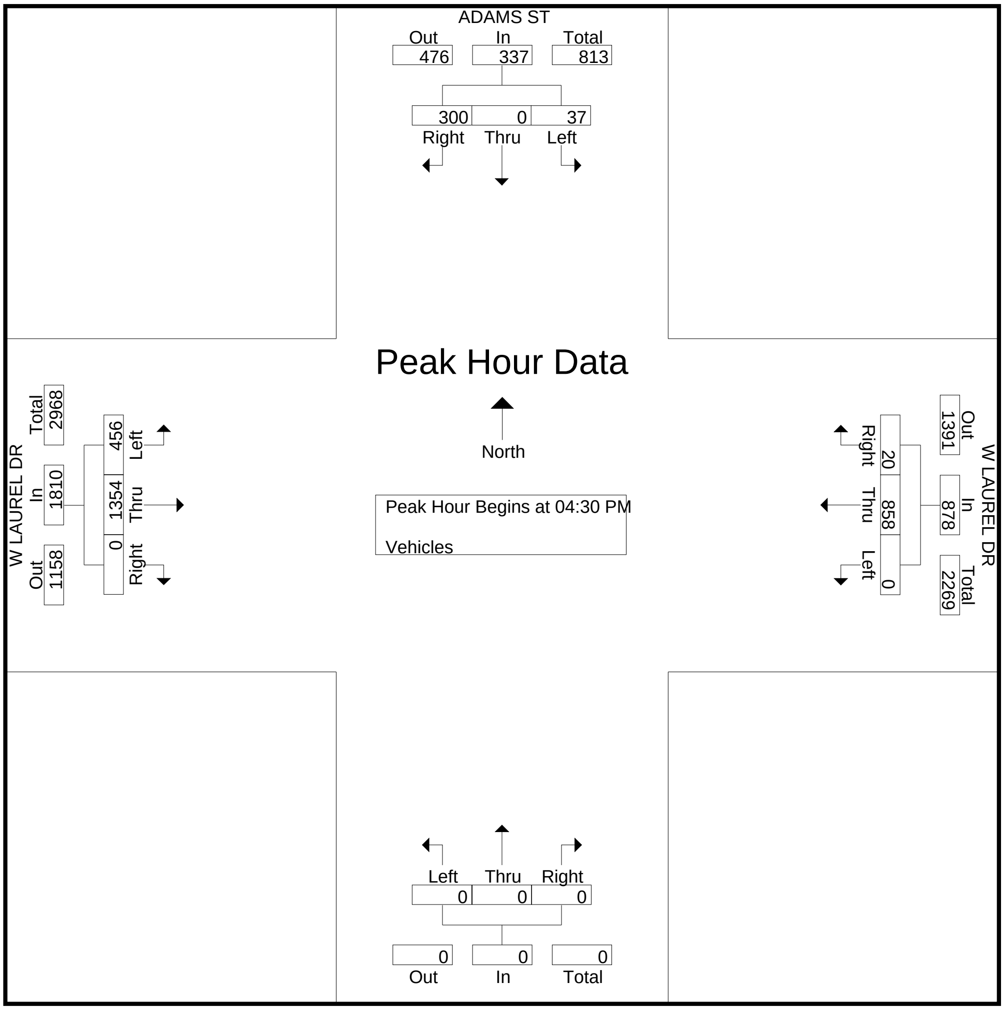
File Name : 50PM FINAL
Site Code : 00000050
Start Date : 1/14/2016
Page No : 2



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File Name : 51PM FINAL
Site Code : 00000051
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	N DAVIS RD Southbound					W LAUREL DR Westbound					N DAVIS RD Northbound					CALLE DEL ADOBE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	14	112	116	1	243	121	67	153	1	342	245	122	0	1	368	2	73	7	2	84	1037
04:15 PM	7	90	132	0	229	129	93	153	0	375	251	117	3	1	372	2	78	13	1	94	1070
04:30 PM	10	120	138	0	268	156	102	155	0	413	262	110	4	1	377	2	83	11	0	96	1154
04:45 PM	7	108	159	0	274	136	83	158	0	377	255	103	10	0	368	4	75	12	0	91	1110
Total	38	430	545	1	1014	542	345	619	1	1507	1013	452	17	3	1485	10	309	43	3	365	4371
05:00 PM	14	132	165	2	313	123	77	168	1	369	237	113	7	0	357	0	76	11	0	87	1126
05:15 PM	7	122	134	0	263	131	86	170	2	389	251	120	1	0	372	4	70	11	0	85	1109
05:30 PM	8	88	113	0	209	120	62	149	0	331	251	136	4	0	391	2	79	8	0	89	1020
05:45 PM	9	94	151	0	254	128	49	151	0	328	206	124	3	1	334	0	74	5	0	79	995
Total	38	436	563	2	1039	502	274	638	3	1417	945	493	15	1	1454	6	299	35	0	340	4250
Grand Total	76	866	1108	3	2053	1044	619	1257	4	2924	1958	945	32	4	2939	16	608	78	3	705	8621
Apprch %	3.7	42.2	54	0.1		35.7	21.2	43	0.1		66.6	32.2	1.1	0.1		2.3	86.2	11.1	0.4		
Total %	0.9	10	12.9	0	23.8	12.1	7.2	14.6	0	33.9	22.7	11	0.4	0	34.1	0.2	7.1	0.9	0	8.2	

	N DAVIS RD Southbound				W LAUREL DR Westbound				N DAVIS RD Northbound				CALLE DEL ADOBE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	10	120	138	268	**156**	**102**	155	**413**	**262**	110	4	**376**	2	**83**	11	**96**	**1153**
04:45 PM	7	108	159	274	136	83	158	377	255	103	**10**	368	**4**	75	**12**	91	1110
05:00 PM	**14**	**132**	**165**	**311**	123	77	168	368	237	113	7	357	0	76	11	87	1123
05:15 PM	7	122	134	263	131	86	**170**	387	251	**120**	1	372	4	70	11	85	1107
Total Volume	38	482	596	1116	546	348	651	1545	1005	446	22	1473	10	304	45	359	4493
% App. Total	3.4	43.2	53.4		35.3	22.5	42.1		68.2	30.3	1.5		2.8	84.7	12.5		
PHF	.679	.913	.903	.897	.875	.853	.957	.935	.959	.929	.550	.979	.625	.916	.938	.935	.974

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File Name : 51PM FINAL
Site Code : 00000051
Start Date : 1/14/2016
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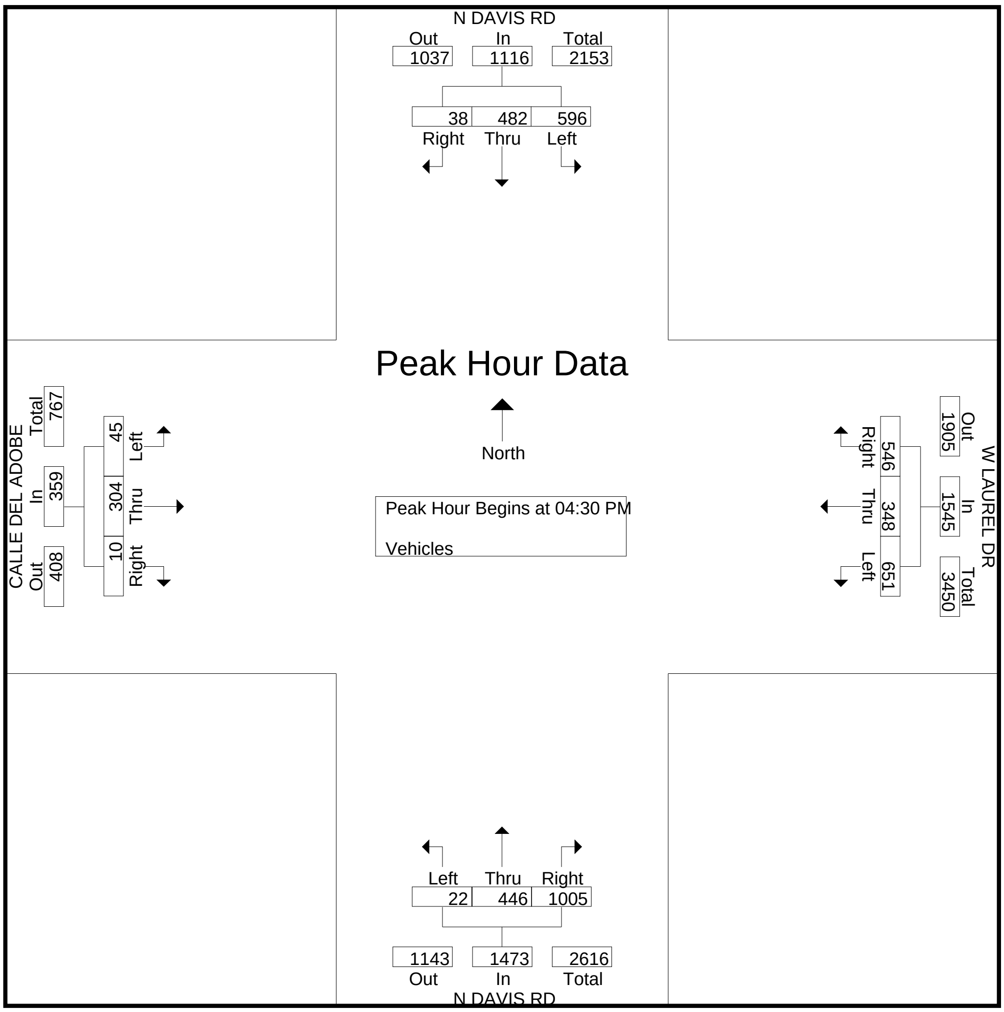

Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 52PM FINAL
Site Code : 00000052
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	SHERWOOD DR Southbound					E MARKET ST Westbound					E FRONT ST Northbound					MARKET WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	124	70	4	201	65	3	88	2	158	85	196	2	0	283	2	0	0	0	2	644
04:15 PM	4	127	65	4	200	60	8	78	2	148	68	209	9	0	286	3	0	0	0	3	637
04:30 PM	5	111	74	2	192	69	2	57	2	130	94	249	8	0	351	6	0	0	1	7	680
04:45 PM	7	124	71	6	208	86	7	79	2	174	100	231	10	0	341	5	0	0	0	5	728
Total	19	486	280	16	801	280	20	302	8	610	347	885	29	0	1261	16	0	0	1	17	2689
05:00 PM	6	111	71	0	188	85	10	69	3	167	124	282	7	0	413	2	0	0	0	2	770
05:15 PM	5	115	73	3	196	83	5	70	4	162	100	280	12	0	392	9	0	0	0	9	759
05:30 PM	8	119	81	0	208	80	6	40	0	126	100	226	4	0	330	3	0	0	2	5	669
05:45 PM	6	77	54	0	137	77	4	50	0	131	69	154	4	0	227	1	0	0	1	2	497
Total	25	422	279	3	729	325	25	229	7	586	393	942	27	0	1362	15	0	0	3	18	2695
Grand Total	44	908	559	19	1530	605	45	531	15	1196	740	1827	56	0	2623	31	0	0	4	35	5384
Apprch %	2.9	59.3	36.5	1.2		50.6	3.8	44.4	1.3		28.2	69.7	2.1	0		88.6	0	0	11.4		
Total %	0.8	16.9	10.4	0.4	28.4	11.2	0.8	9.9	0.3	22.2	13.7	33.9	1	0	48.7	0.6	0	0	0.1	0.7	

	SHERWOOD DR Southbound				E MARKET ST Westbound				E FRONT ST Northbound				MARKET WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	5	111	**74**	190	69	2	57	128	94	249	8	351	6	0	0	6	675
04:45 PM	**7**	**124**	71	**202**	**86**	7	**79**	**172**	100	231	10	341	5	0	0	5	720
05:00 PM	6	111	71	188	85	**10**	69	164	**124**	**282**	7	**413**	2	0	0	2	**767**
05:15 PM	5	115	73	193	83	5	70	158	100	280	**12**	392	**9**	0	0	**9**	752
Total Volume	23	461	289	773	323	24	275	622	418	1042	37	1497	22	0	0	22	2914
% App. Total	3	59.6	37.4		51.9	3.9	44.2		27.9	69.6	2.5		100	0	0		
PHF	.821	.929	.976	.957	.939	.600	.870	.904	.843	.924	.771	.906	.611	.000	.000	.611	.950

Traffic Data Service

Campbell, CA

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File Name : 52PM FINAL
Site Code : 00000052
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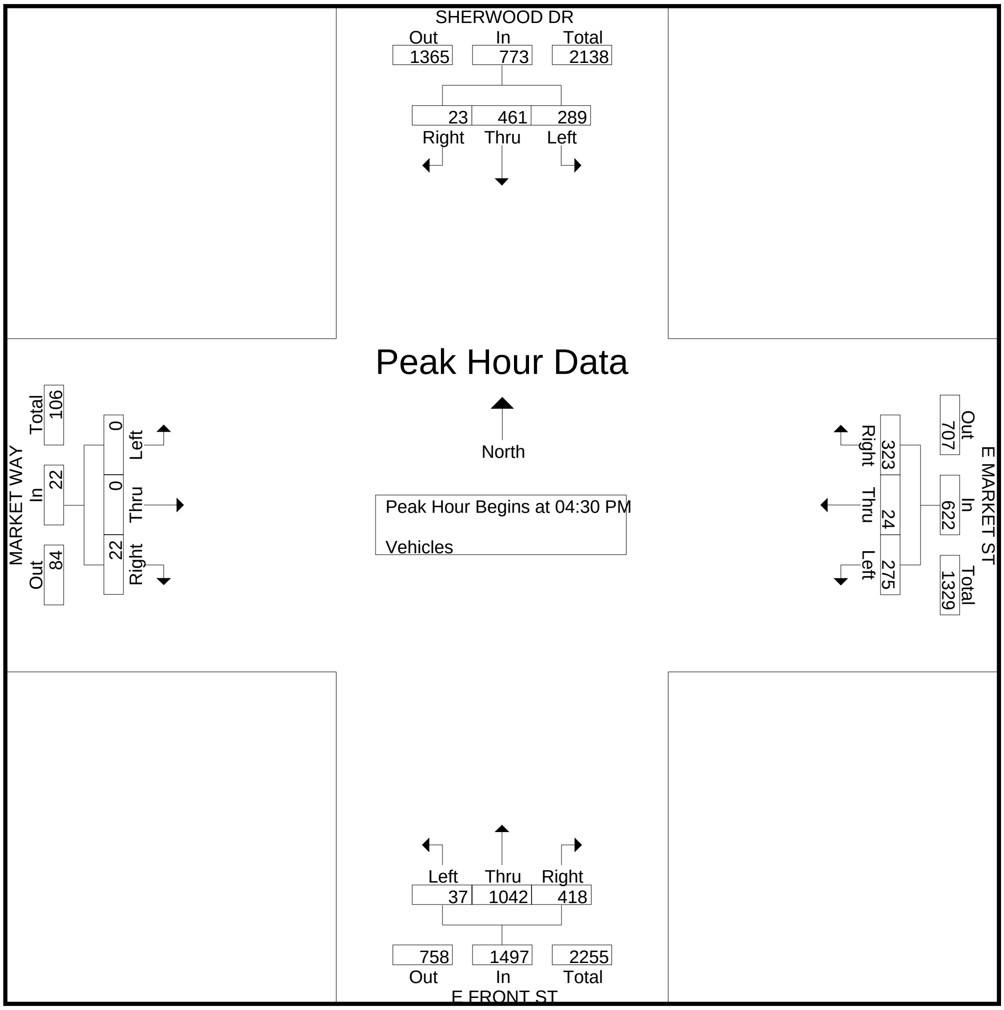

Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 53PM FINAL
Site Code : 00000053
Start Date : 1/14/2016
Page No : 1

Groups Printed- Vehicles

	E FRONT ST Southbound					E FRONT ST Westbound					Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	116	0	82	0	198	136	73	0	5	214	0	0	0	0	0	0	66	158	0	224	636
04:15 PM	135	0	82	0	217	103	70	0	1	174	0	0	0	0	0	0	51	169	0	220	611
04:30 PM	113	0	59	0	172	144	92	0	1	237	0	0	0	0	0	0	42	210	0	252	661
04:45 PM	120	0	80	0	200	139	79	0	2	220	0	0	0	0	0	0	56	203	0	259	679
Total	484	0	303	0	787	522	314	0	9	845	0	0	0	0	0	0	215	740	0	955	2587
05:00 PM	123	0	69	0	192	160	85	0	6	251	0	0	0	0	0	0	43	266	0	309	752
05:15 PM	108	0	91	0	199	165	76	0	2	243	0	0	0	0	0	0	49	198	0	247	689
05:30 PM	105	0	61	0	166	113	55	0	5	173	0	0	0	0	0	0	41	154	0	195	534
05:45 PM	80	0	59	0	139	64	59	0	2	125	0	0	0	0	0	0	33	148	1	182	446
Total	416	0	280	0	696	502	275	0	15	792	0	0	0	0	0	0	166	766	1	933	2421
Grand Total	900	0	583	0	1483	1024	589	0	24	1637	0	0	0	0	0	0	381	1506	1	1888	5008
Apprch %	60.7	0	39.3	0		62.6	36	0	1.5		0	0	0	0		0	20.2	79.8	0.1		
Total %	18	0	11.6	0	29.6	20.4	11.8	0	0.5	32.7	0	0	0	0	0	0	7.6	30.1	0	37.7	

	E FRONT ST Southbound				E FRONT ST Westbound				Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	113	0	59	172	144	**92**	0	236	0	0	0	0	0	42	210	252	660
04:45 PM	120	0	80	**200**	139	79	0	218	0	0	0	0	0	**56**	203	259	677
05:00 PM	**123**	0	69	192	160	85	0	**245**	0	0	0	0	0	43	**266**	**309**	**746**
05:15 PM	108	0	**91**	199	**165**	76	0	241	0	0	0	0	0	49	198	247	687
Total Volume	464	0	299	763	608	332	0	940	0	0	0	0	0	190	877	1067	2770
% App. Total	60.8	0	39.2		64.7	35.3	0		0	0	0		0	17.8	82.2		
PHF	.943	.000	.821	.954	.921	.902	.000	.959	.000	.000	.000	.000	.000	.848	.824	.863	.928

Traffic Data Service
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File Name : 53PM FINAL
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Start Date : 1/14/2016
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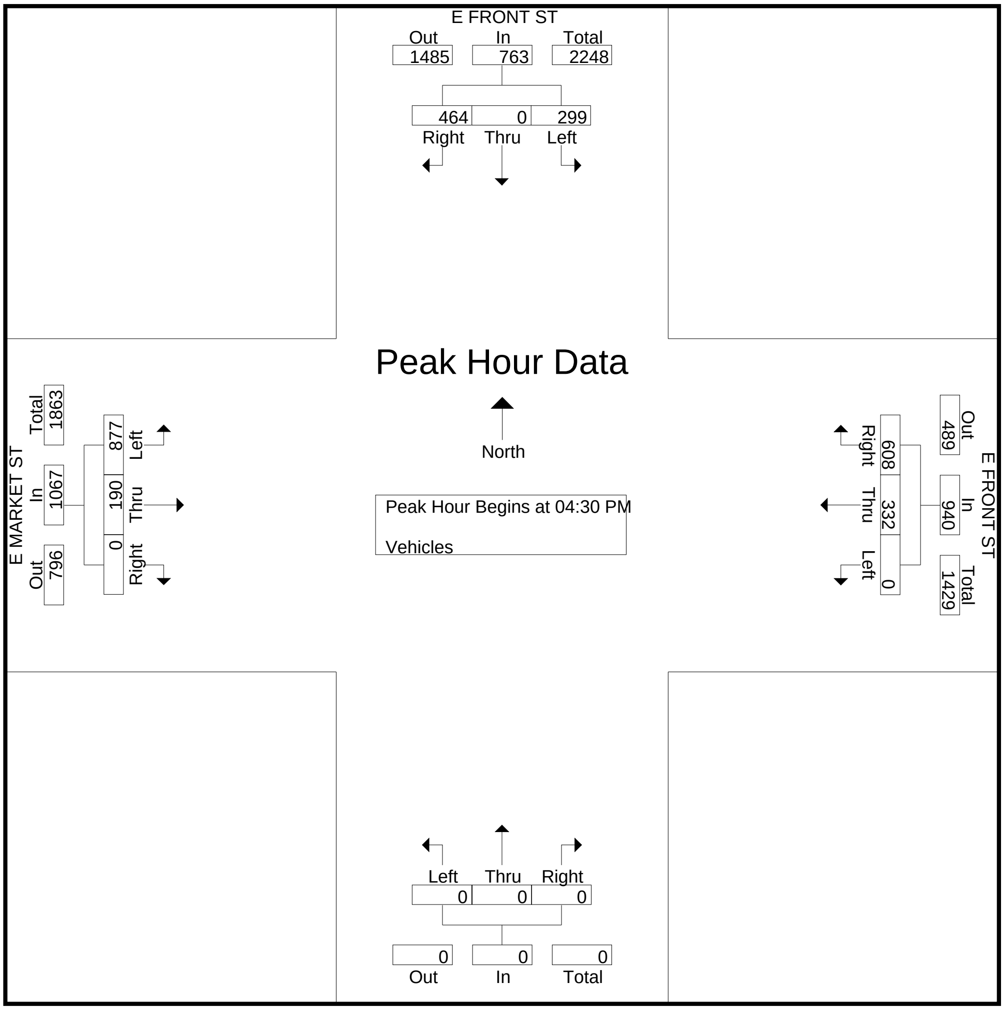

Traffic Data Service

Campbell, CA

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File Name : 54PM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 1

Groups Printed- Vehicles

	S DAVIS RD Southbound					W BLANCO RD Westbound					S DAVIS RD Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	111	38	47	0	196	71	103	10	0	184	28	85	6	0	119	1	118	173	0	292	791
04:15 PM	114	66	69	0	249	62	130	11	0	203	28	83	7	0	118	2	122	156	0	280	850
04:30 PM	111	41	54	0	206	65	121	7	0	193	17	74	5	0	96	0	135	185	0	320	815
04:45 PM	123	46	49	0	218	51	148	10	0	209	42	83	11	0	136	4	134	149	0	287	850
Total	459	191	219	0	869	249	502	38	0	789	115	325	29	0	469	7	509	663	0	1179	3306
05:00 PM	108	55	54	0	217	86	194	25	0	305	51	78	12	0	141	1	166	92	0	259	922
05:15 PM	120	65	67	2	254	71	167	10	0	248	56	69	6	0	131	0	131	95	0	226	859
05:30 PM	110	40	57	0	207	54	147	12	1	214	65	60	5	1	131	0	161	102	0	263	815
05:45 PM	108	46	64	0	218	37	97	6	0	140	39	66	1	0	106	0	143	149	0	292	756
Total	446	206	242	2	896	248	605	53	1	907	211	273	24	1	509	1	601	438	0	1040	3352
Grand Total	905	397	461	2	1765	497	1107	91	1	1696	326	598	53	1	978	8	1110	1101	0	2219	6658
Apprch %	51.3	22.5	26.1	0.1		29.3	65.3	5.4	0.1		33.3	61.1	5.4	0.1		0.4	50	49.6	0		
Total %	13.6	6	6.9	0	26.5	7.5	16.6	1.4	0	25.5	4.9	9	0.8	0	14.7	0.1	16.7	16.5	0	33.3	

	S DAVIS RD Southbound				W BLANCO RD Westbound				S DAVIS RD Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	111	41	54	206	65	121	7	193	17	74	5	96	0	135	**185**	**320**	815
04:45 PM	**123**	46	49	218	51	148	10	209	42	**83**	11	136	**4**	134	149	287	850
05:00 PM	108	55	54	217	**86**	**194**	**25**	**305**	51	78	**12**	**141**	1	**166**	92	259	**922**
05:15 PM	120	**65**	**67**	**252**	71	167	10	248	**56**	69	6	131	0	131	95	226	857
Total Volume	462	207	224	893	273	630	52	955	166	304	34	504	5	566	521	1092	3444
% App. Total	51.7	23.2	25.1		28.6	66	5.4		32.9	60.3	6.7		0.5	51.8	47.7		
PHF	.939	.796	.836	.886	.794	.812	.520	.783	.741	.916	.708	.894	.313	.852	.704	.853	.934

Traffic Data Service

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File Name : 54PM FINAL
Site Code : 00000054
Start Date : 11/19/2015
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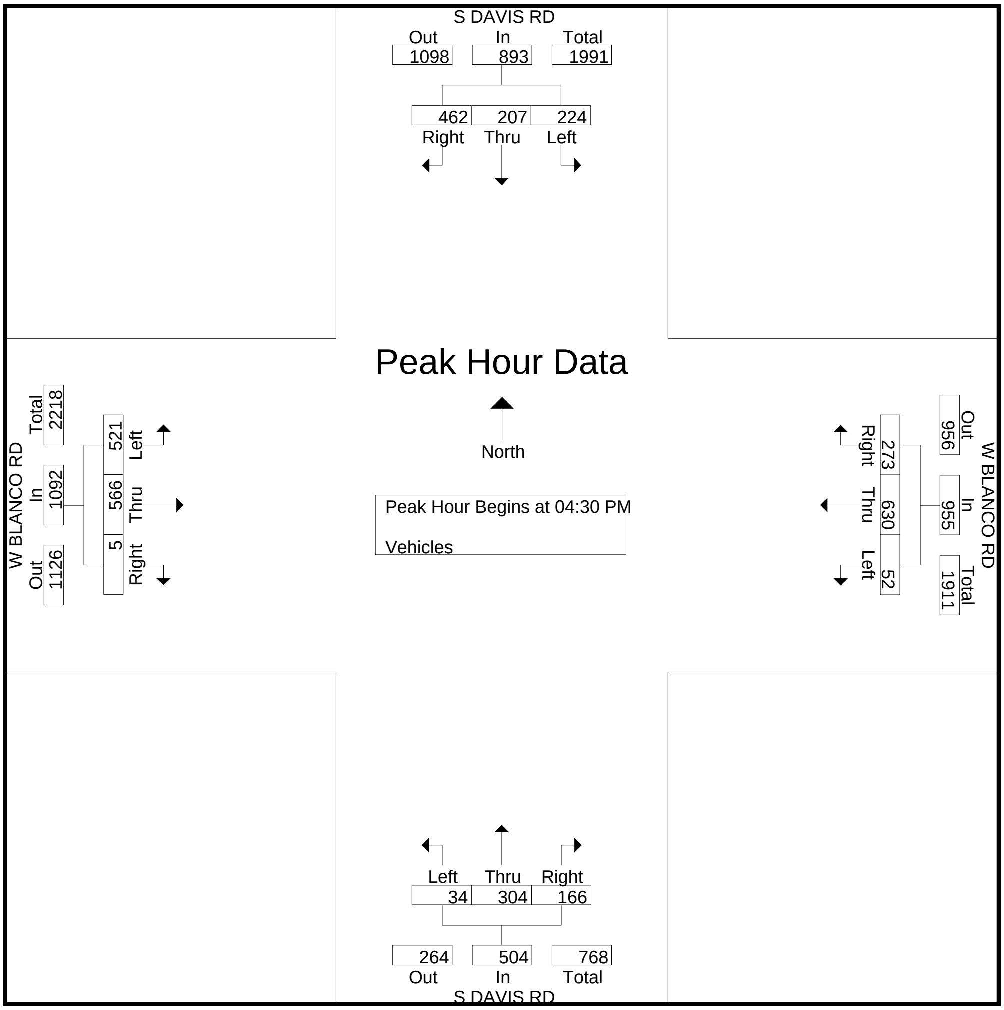

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 55PM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	MONTEREY ST Southbound					E MARKET ST Westbound					MONTEREY ST Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	3	3	36	137	0	3	176	13	193	29	5	240	0	205	88	0	293	712
04:15 PM	0	0	0	2	2	28	129	0	1	158	19	216	32	5	272	0	181	98	0	279	711
04:30 PM	0	0	0	2	2	48	130	0	7	185	16	204	30	4	254	0	211	110	0	321	762
04:45 PM	0	0	0	0	0	40	122	0	6	168	18	228	30	6	282	0	217	95	0	312	762
Total	0	0	0	7	7	152	518	0	17	687	66	841	121	20	1048	0	814	391	0	1205	2947
05:00 PM	0	0	0	1	1	58	157	0	6	221	19	190	29	5	243	0	214	97	0	311	776
05:15 PM	0	0	0	0	0	54	131	0	5	190	9	231	46	6	292	0	214	108	0	322	804
05:30 PM	0	0	0	1	1	46	160	0	3	209	20	196	28	1	245	0	209	96	0	305	760
05:45 PM	0	0	0	0	0	25	155	0	2	182	20	238	30	3	291	0	203	91	0	294	767
Total	0	0	0	2	2	183	603	0	16	802	68	855	133	15	1071	0	840	392	0	1232	3107
Grand Total	0	0	0	9	9	335	1121	0	33	1489	134	1696	254	35	2119	0	1654	783	0	2437	6054
Apprch %	0	0	0	100		22.5	75.3	0	2.2		6.3	80	12	1.7		0	67.9	32.1	0		
Total %	0	0	0	0.1	0.1	5.5	18.5	0	0.5	24.6	2.2	28	4.2	0.6	35	0	27.3	12.9	0	40.3	

	MONTEREY ST Southbound				E MARKET ST Westbound				MONTEREY ST Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	**58**	157	0	**215**	19	190	29	238	0	**214**	97	311	764
05:15 PM	0	0	0	0	54	131	0	185	9	231	**46**	286	0	214	**108**	**322**	**793**
05:30 PM	0	0	0	0	46	**160**	0	206	**20**	196	28	244	0	209	96	305	755
05:45 PM	0	0	0	0	25	155	0	180	20	**238**	30	**288**	0	203	91	294	762
Total Volume	0	0	0	0	183	603	0	786	68	855	133	1056	0	840	392	1232	3074
% App. Total	0	0	0		23.3	76.7	0		6.4	81	12.6		0	68.2	31.8		
PHF	.000	.000	.000	.000	.789	.942	.000	.914	.850	.898	.723	.917	.000	.981	.907	.957	.969

Traffic Data Service

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File Name : 55PM FINAL
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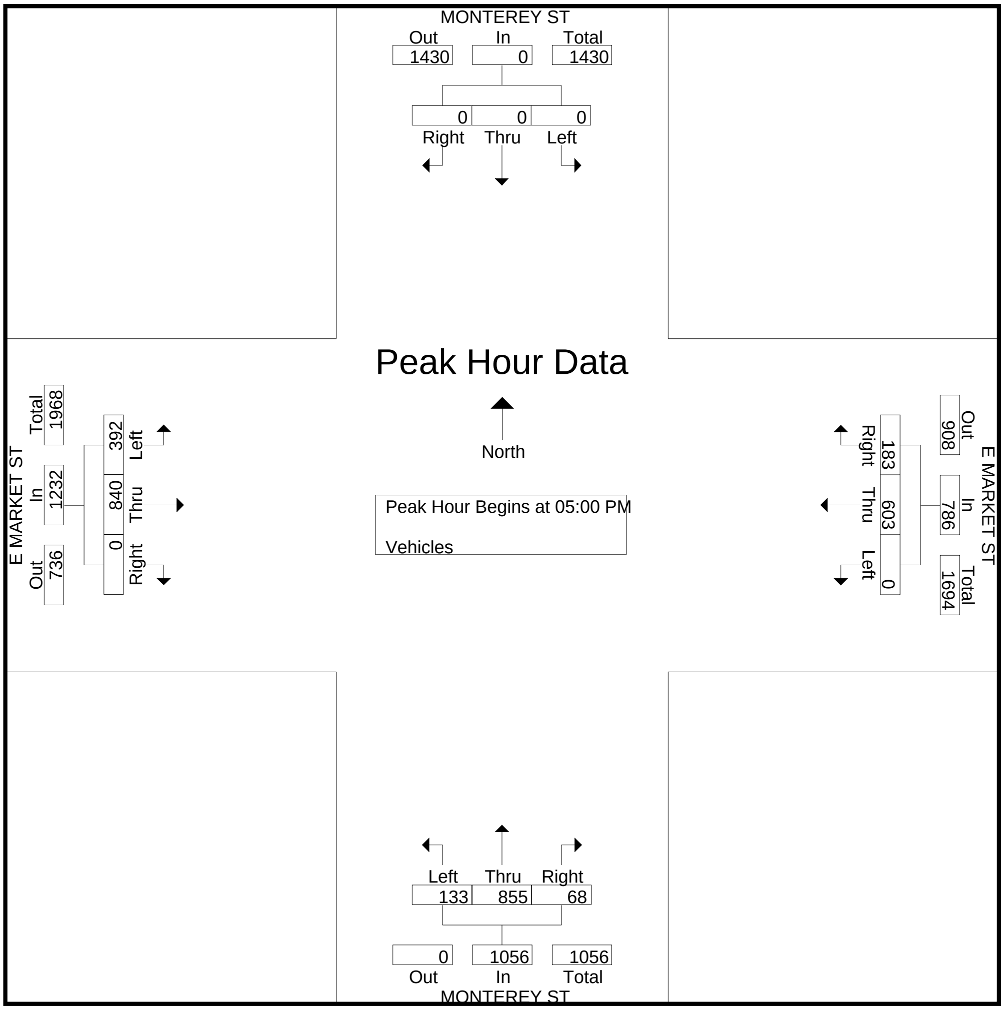

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 56PM FINAL
Site Code : 00000056
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicles

	N MAIN ST Southbound					E MARKET ST Westbound					SALINAS ST Northbound					W MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	68	150	44	0	262	0	122	38	0	160	0	0	0	1	1	19	230	0	2	251	674
04:15 PM	59	163	36	0	258	0	143	35	0	178	0	0	0	2	2	10	253	0	2	265	703
04:30 PM	53	173	35	0	261	0	124	23	3	150	0	0	0	2	2	14	268	0	3	285	698
04:45 PM	71	185	43	2	301	0	132	25	1	158	0	0	0	2	2	6	300	0	2	308	769
Total	251	671	158	2	1082	0	521	121	4	646	0	0	0	7	7	49	1051	0	9	1109	2844
05:00 PM	90	231	36	0	357	0	129	44	0	173	0	0	0	1	1	4	252	0	1	257	788
05:15 PM	90	233	30	2	355	0	163	24	1	188	0	0	0	1	1	4	274	0	2	280	824
05:30 PM	90	202	25	0	317	0	142	31	1	174	0	0	0	0	0	10	242	0	1	253	744
05:45 PM	110	203	36	2	351	0	157	37	0	194	0	0	0	0	0	6	245	0	3	254	799
Total	380	869	127	4	1380	0	591	136	2	729	0	0	0	2	2	24	1013	0	7	1044	3155
Grand Total	631	1540	285	6	2462	0	1112	257	6	1375	0	0	0	9	9	73	2064	0	16	2153	5999
Apprch %	25.6	62.6	11.6	0.2		0	80.9	18.7	0.4		0	0	0	100		3.4	95.9	0	0.7		
Total %	10.5	25.7	4.8	0.1	41	0	18.5	4.3	0.1	22.9	0	0	0	0.2	0.2	1.2	34.4	0	0.3	35.9	

	N MAIN ST Southbound				E MARKET ST Westbound				SALINAS ST Northbound				W MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	90	231	**36**	**357**	0	129	**44**	173	0	0	0	0	4	252	0	256	786
05:15 PM	90	**233**	30	353	0	**163**	24	187	0	0	0	0	4	**274**	0	**278**	**818**
05:30 PM	90	202	25	317	0	142	31	173	0	0	0	0	**10**	242	0	252	742
05:45 PM	**110**	203	36	349	0	157	37	**194**	0	0	0	0	6	245	0	251	794
Total Volume	380	869	127	1376	0	591	136	727	0	0	0	0	24	1013	0	1037	3140
% App. Total	27.6	63.2	9.2		0	81.3	18.7		0	0	0		2.3	97.7	0		
PHF	.864	.932	.882	.964	.000	.906	.773	.937	.000	.000	.000	.000	.600	.924	.000	.933	.960

Traffic Data Service

Campbell, CA

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File Name : 56PM FINAL
Site Code : 00000056
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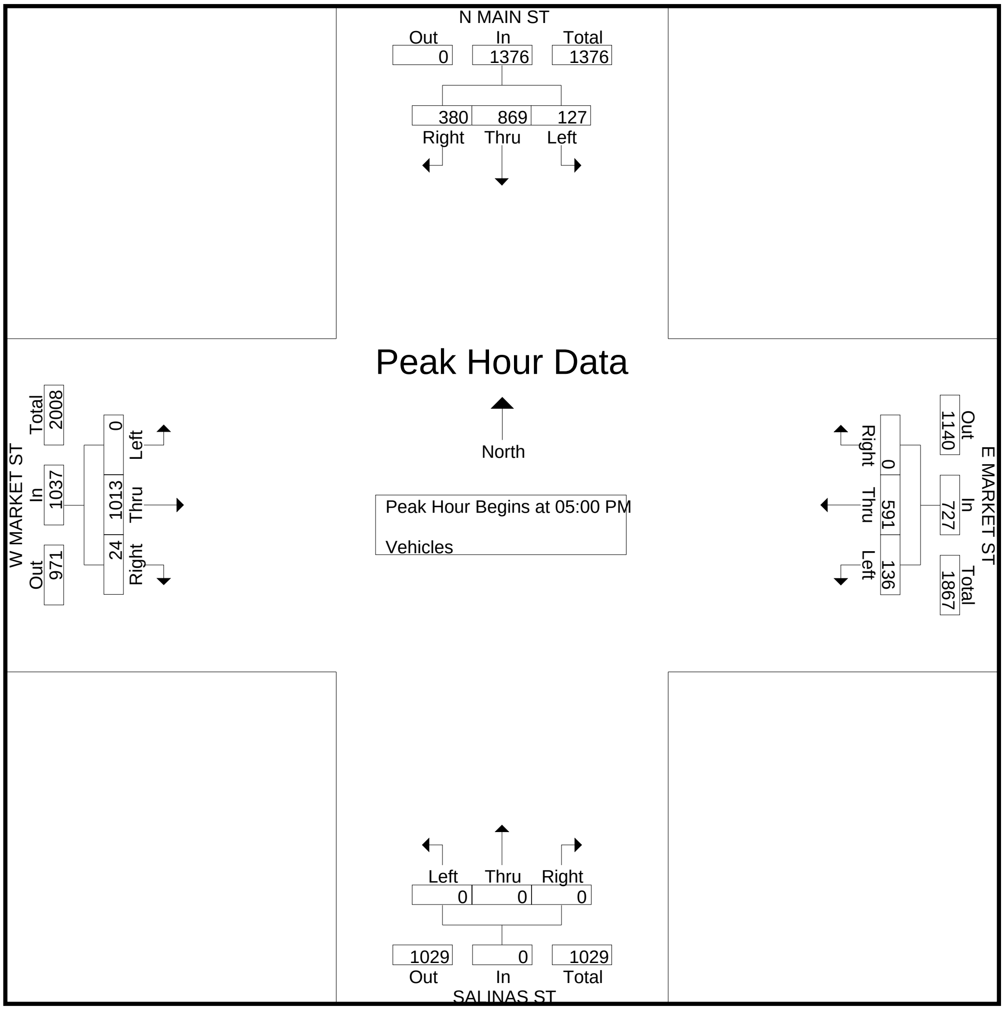

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 57PM FINAL
Site Code : 00000057
Start Date : 1/14/2016
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Groups Printed- Vehicles

	SR-68 Southbound					E BLANCO RD Westbound					SR-68 Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	41	164	23	0	228	36	110	117	1	264	102	157	59	0	318	42	108	59	2	211	1021
04:15 PM	36	133	31	0	200	24	85	105	1	215	125	168	52	0	345	39	108	82	1	230	990
04:30 PM	44	197	28	0	269	28	98	148	0	274	112	163	47	0	322	50	76	76	0	202	1067
04:45 PM	39	157	21	0	217	25	85	106	0	216	100	150	48	0	298	53	104	70	2	229	960
Total	160	651	103	0	914	113	378	476	2	969	439	638	206	0	1283	184	396	287	5	872	4038
05:00 PM	41	192	33	0	266	24	129	160	0	313	115	171	66	0	352	48	61	74	2	185	1116
05:15 PM	44	182	34	1	261	23	126	158	0	307	114	162	65	0	341	48	94	104	1	247	1156
05:30 PM	35	153	29	0	217	15	77	119	1	212	116	179	61	0	356	46	106	77	0	229	1014
05:45 PM	38	150	12	0	200	20	75	123	0	218	89	163	59	0	311	31	76	81	0	188	917
Total	158	677	108	1	944	82	407	560	1	1050	434	675	251	0	1360	173	337	336	3	849	4203
Grand Total	318	1328	211	1	1858	195	785	1036	3	2019	873	1313	457	0	2643	357	733	623	8	1721	8241
Apprch %	17.1	71.5	11.4	0.1		9.7	38.9	51.3	0.1		33	49.7	17.3	0		20.7	42.6	36.2	0.5		
Total %	3.9	16.1	2.6	0	22.5	2.4	9.5	12.6	0	24.5	10.6	15.9	5.5	0	32.1	4.3	8.9	7.6	0.1	20.9	

	SR-68 Southbound				E BLANCO RD Westbound				SR-68 Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**44**	**197**	28	**269**	**28**	98	148	274	112	163	47	322	50	76	76	202	1067
04:45 PM	39	157	21	217	25	85	106	216	100	150	48	298	**53**	**104**	70	227	958
05:00 PM	41	192	33	266	24	**129**	**160**	**313**	**115**	**171**	**66**	**352**	48	61	74	183	1114
05:15 PM	44	182	**34**	260	23	126	158	307	114	162	65	341	48	94	**104**	**246**	**1154**
Total Volume	168	728	116	1012	100	438	572	1110	441	646	226	1313	199	335	324	858	4293
% App. Total	16.6	71.9	11.5		9	39.5	51.5		33.6	49.2	17.2		23.2	39	37.8		
PHF	.955	.924	.853	.941	.893	.849	.894	.887	.959	.944	.856	.933	.939	.805	.779	.872	.930

Traffic Data Service

Campbell, CA
(408) 377-2988
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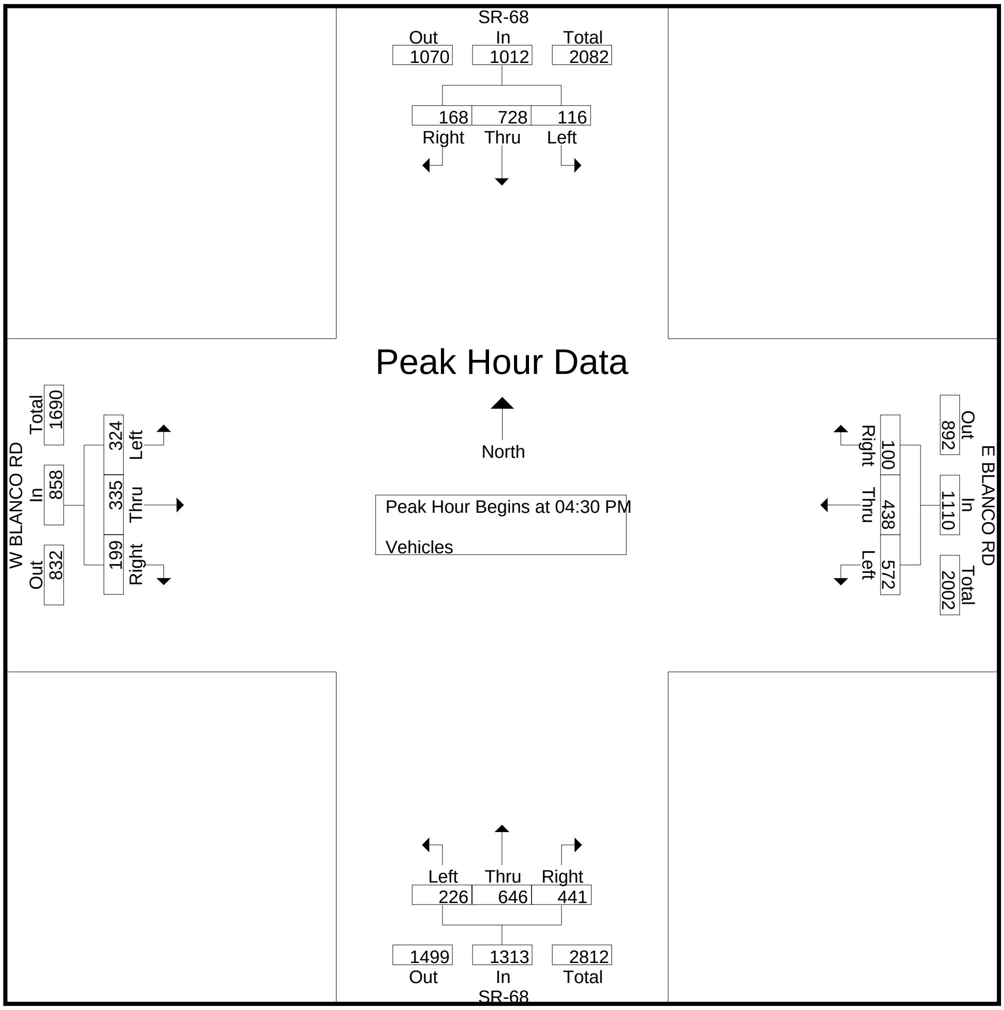
File Name : 57PM FINAL
Site Code : 00000057
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	US-101 SB OFF-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 SB ON-RAMP Northbound					ECHO VALLEY RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 SB OFF-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 SB ON-RAMP Northbound				ECHO VALLEY RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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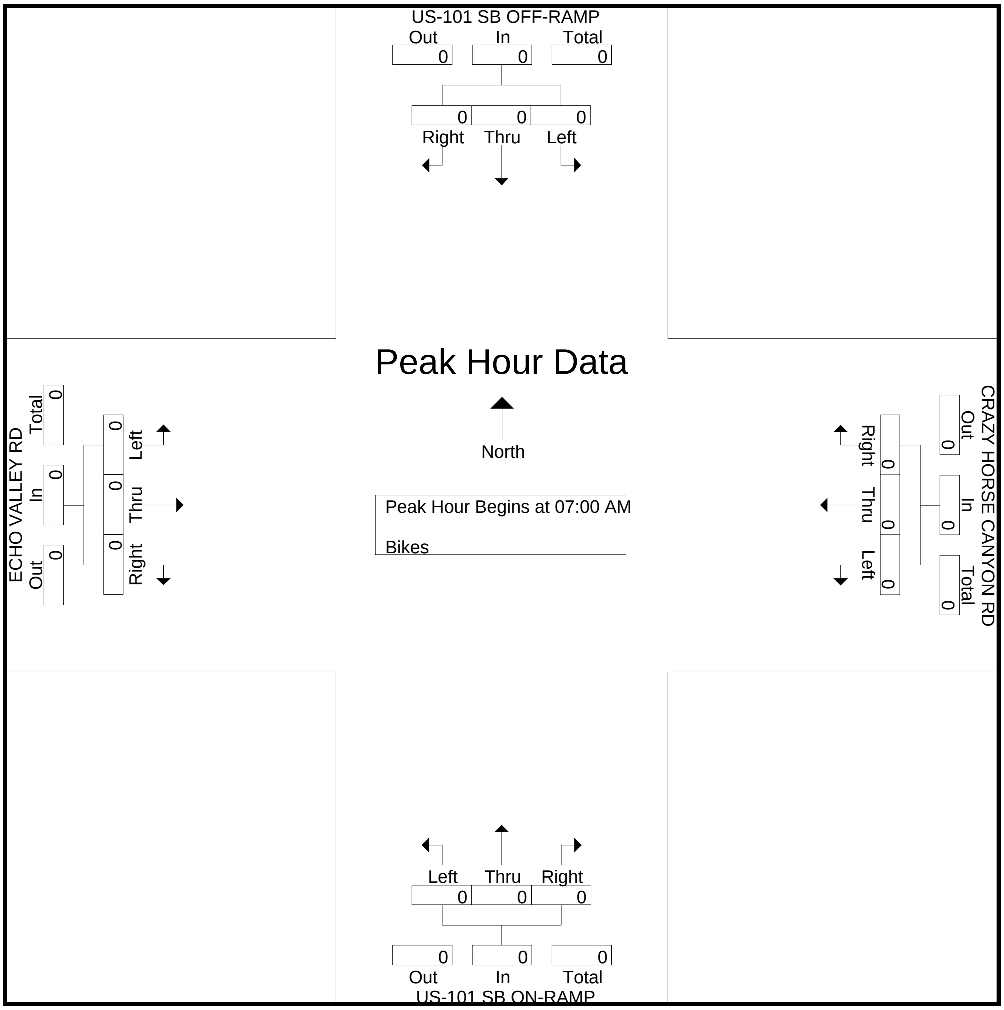
File Name : 1AM FINAL
Site Code : 00000001
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 2AM FINAL
Site Code : 00000002
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	US-101 NB ON-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 NB OFF-RAMP Northbound					CRAZY HORSE CANYON RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB ON-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 NB OFF-RAMP Northbound				CRAZY HORSE CANYON RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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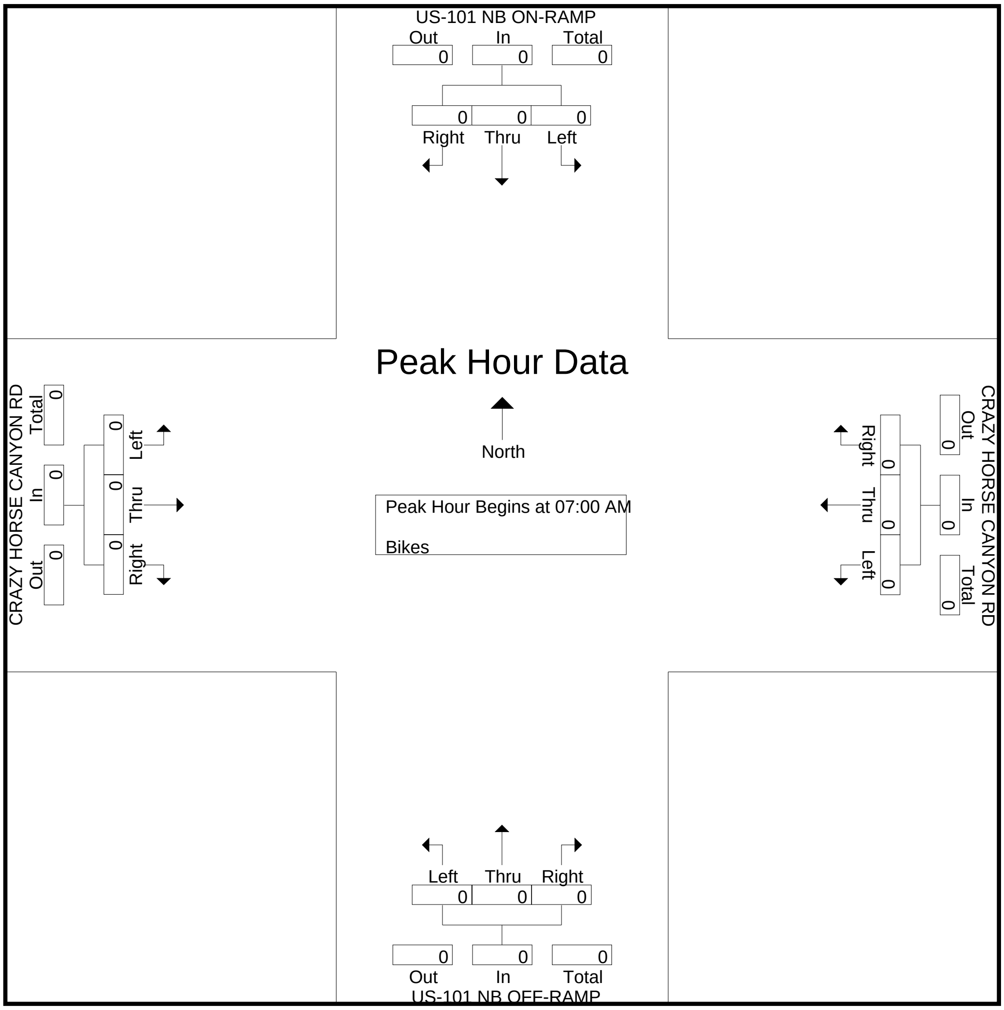
File Name : 2AM FINAL
Site Code : 00000002
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 3AM FINAL
Site Code : 00000003
Start Date : 11/17/2015

Groups Printed- Bikes

	US-101 NB ON-RAMP Southbound					SALA RD Westbound					US-101 NB OFF-RAMP Northbound					US-101 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB ON-RAMP Southbound				SALA RD Westbound				US-101 NB OFF-RAMP Northbound				US-101 SB RAMPS Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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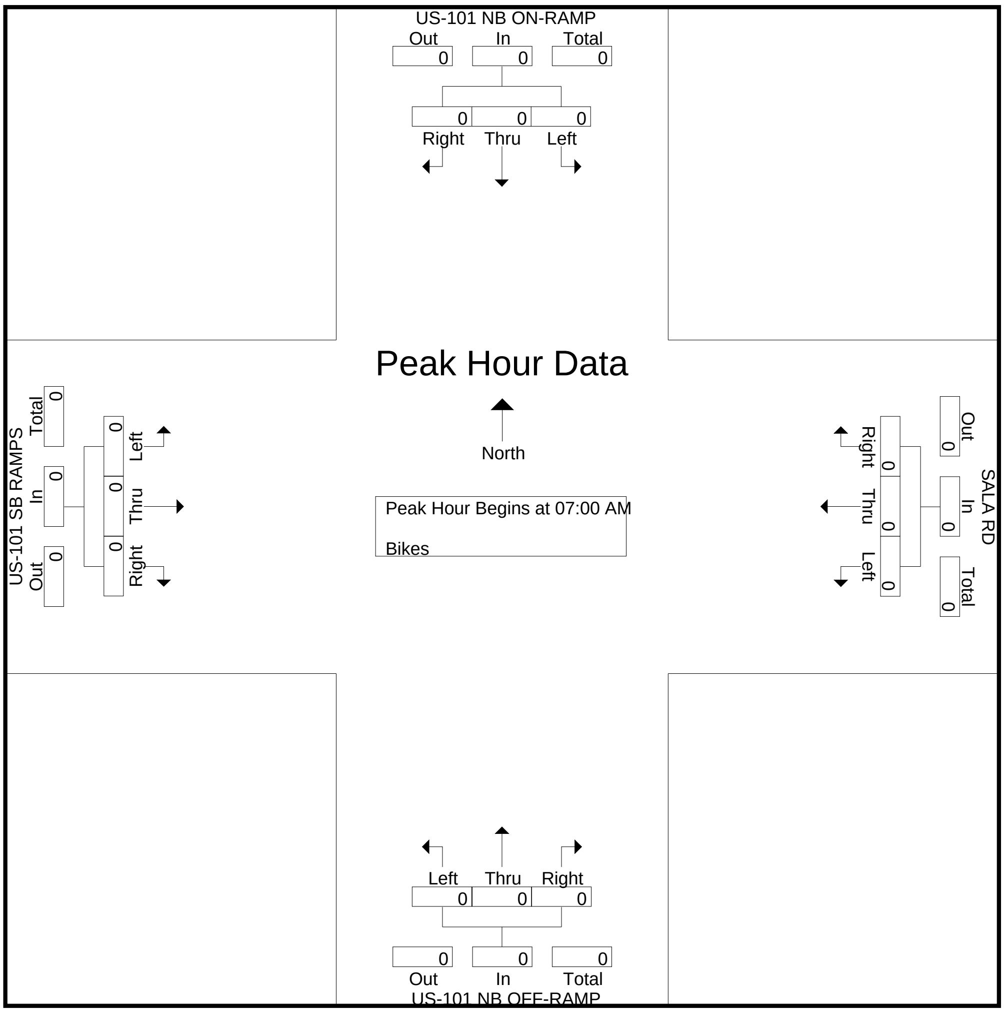
File Name : 3AM FINAL
Site Code : 00000003
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 4AM FINAL
Site Code : 00000004
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	HARRISON RD Southbound					Westbound					HARRISON RD Northbound					SALA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	HARRISON RD Southbound				Westbound				HARRISON RD Northbound				SALA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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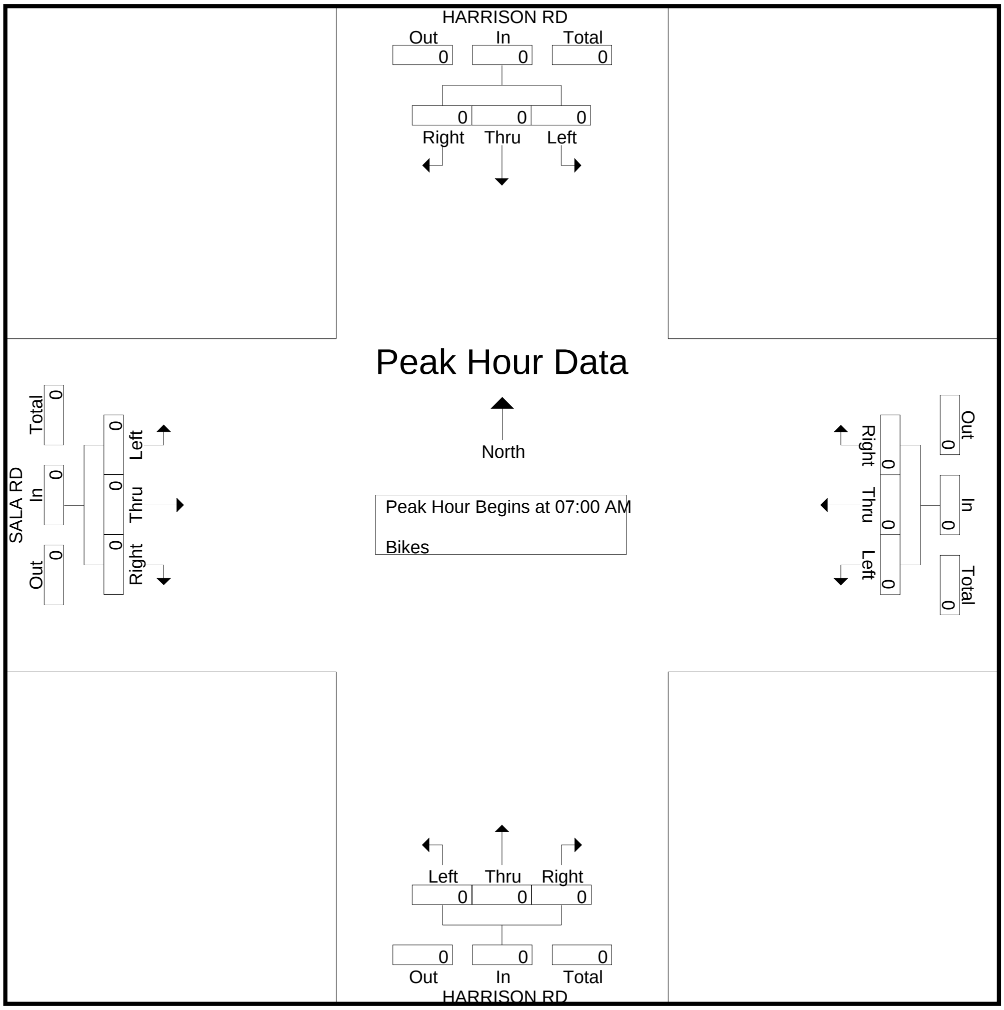
File Name : 4AM FINAL
Site Code : 00000004
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 5AM FINAL
Site Code : 00000005
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	CRAZY HORSE CANYON RD Southbound					SAN JUAN GRADE RD Westbound					CRAZY HORSE CANYON RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	CRAZY HORSE CANYON RD Southbound				SAN JUAN GRADE RD Westbound				CRAZY HORSE CANYON RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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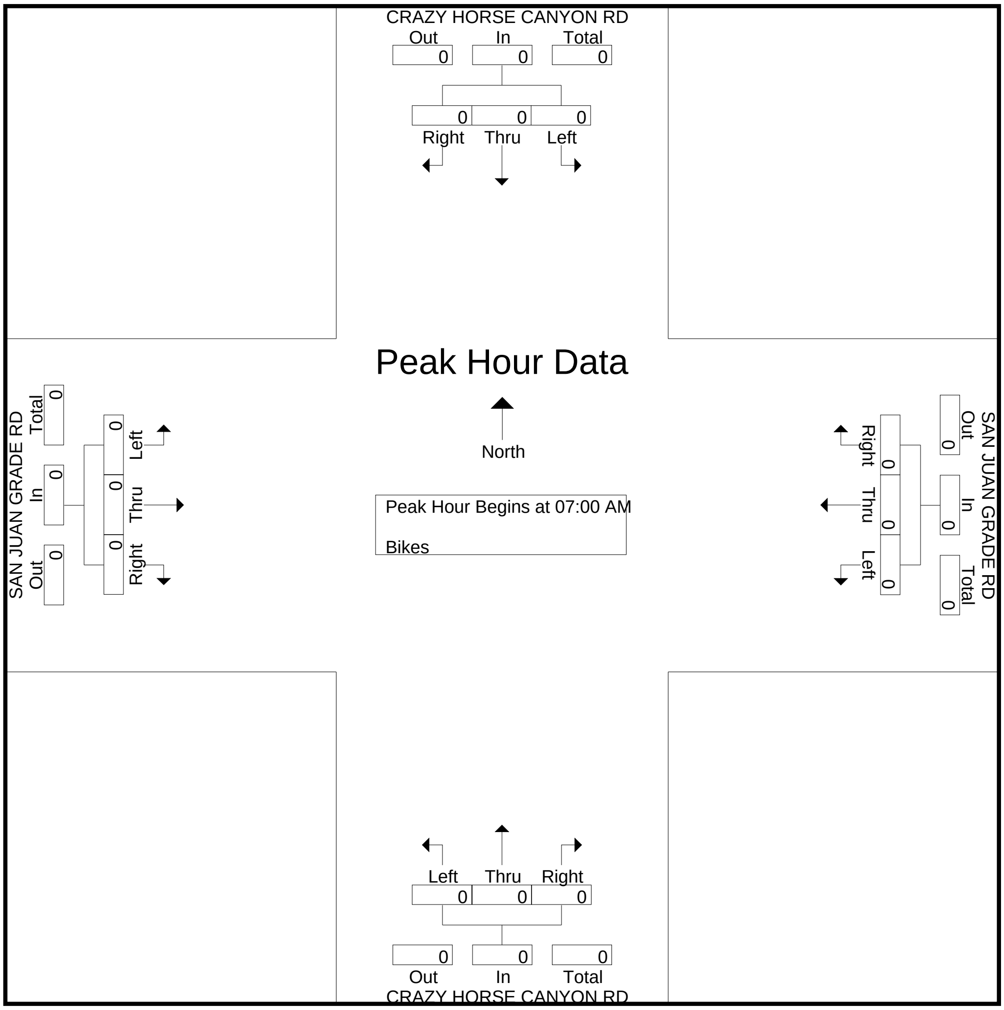
tdsbay@cs.com

File Name : 5AM FINAL
Site Code : 00000005
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 6AM FINAL
Site Code : 00000006
Start Date : 11/17/2015

Groups Printed- Bikes

	HERBERT RD Southbound					SAN JUAN GRADE RD Westbound					HERBERT RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	HERBERT RD Southbound				SAN JUAN GRADE RD Westbound				HERBERT RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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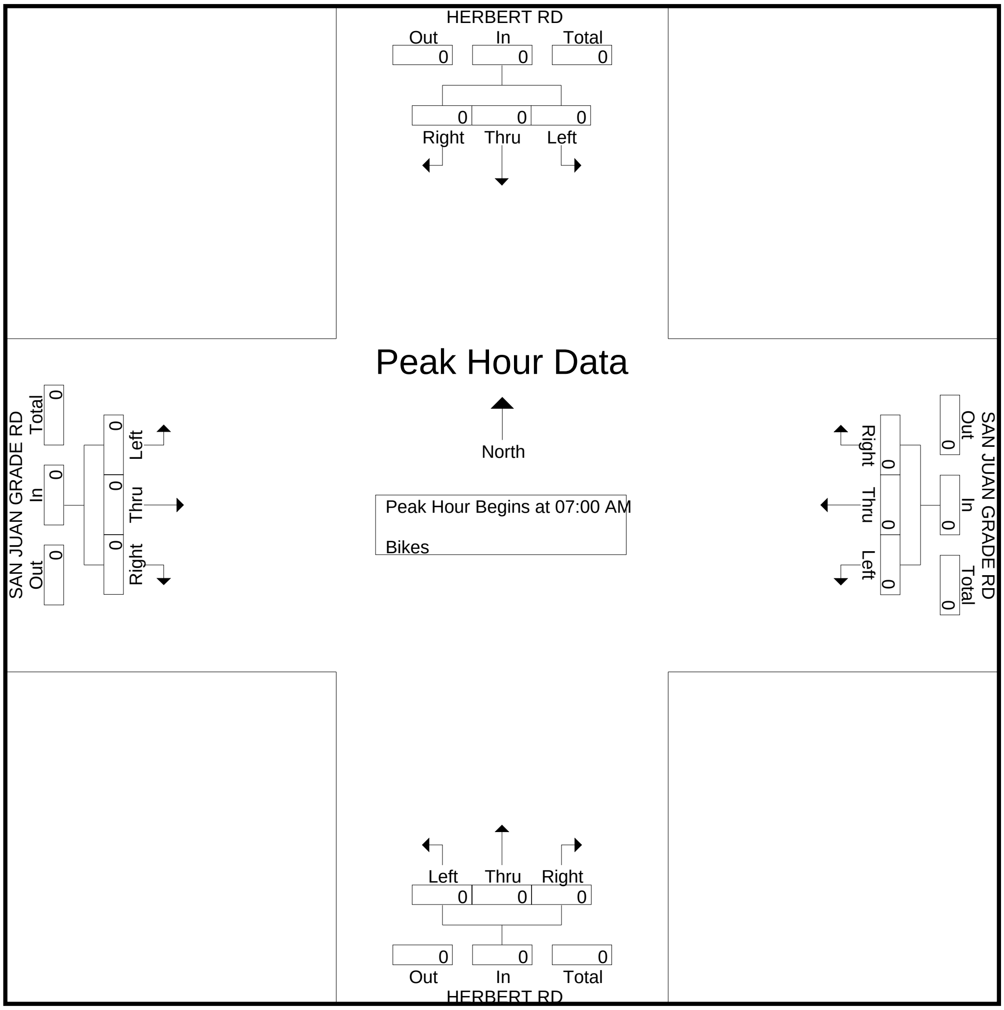
File Name : 6AM FINAL
Site Code : 00000006
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 7AM FINAL
Site Code : 00000007
Start Date : 11/17/2015

Groups Printed- Bikes

	HERBERT RD Southbound					OLD STAGE RD Westbound					OLD STAGE RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0	0	0	0	

	HERBERT RD Southbound				OLD STAGE RD Westbound				OLD STAGE RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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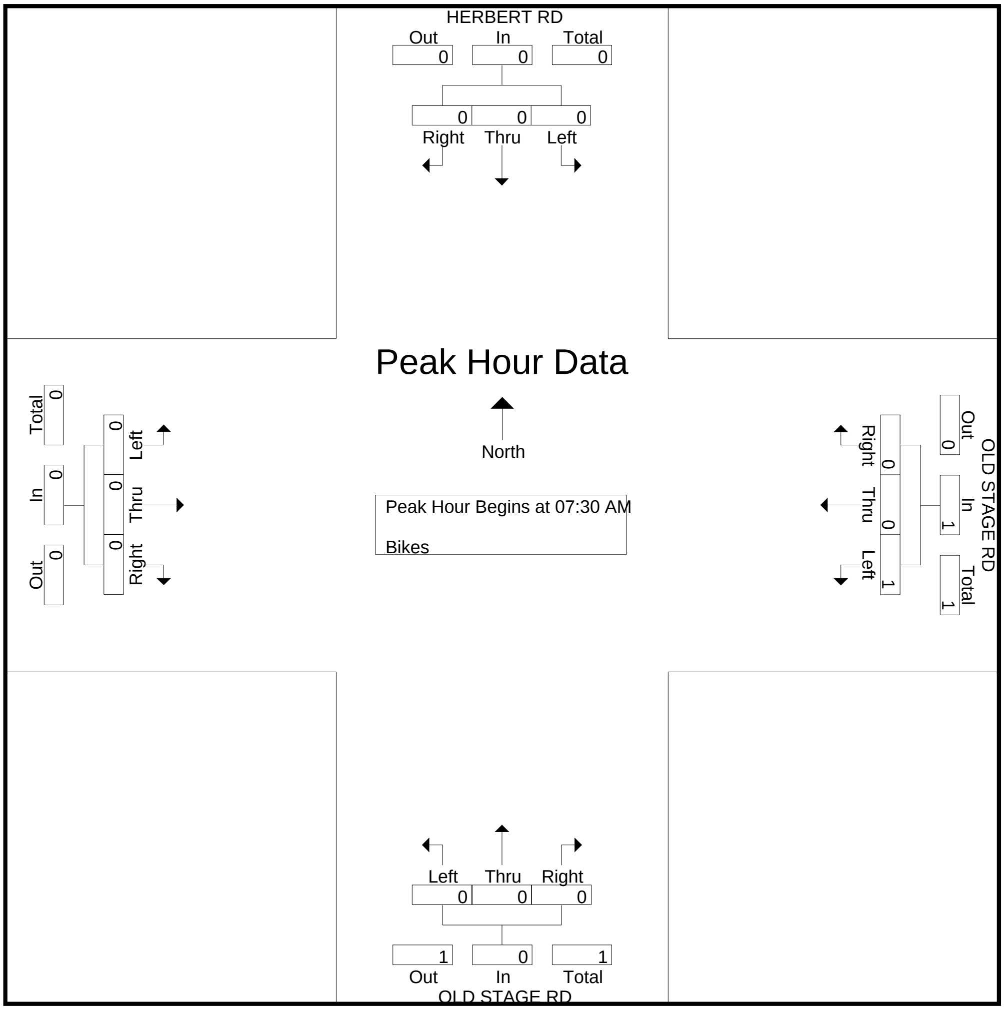
File Name : 7AM FINAL
Site Code : 00000007
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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File Name : 8AM FINAL
Site Code : 00000008
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	HARRISON RD Southbound					RUSSELL RD Westbound					N MAIN ST Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		100	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	

	HARRISON RD Southbound				RUSSELL RD Westbound				N MAIN ST Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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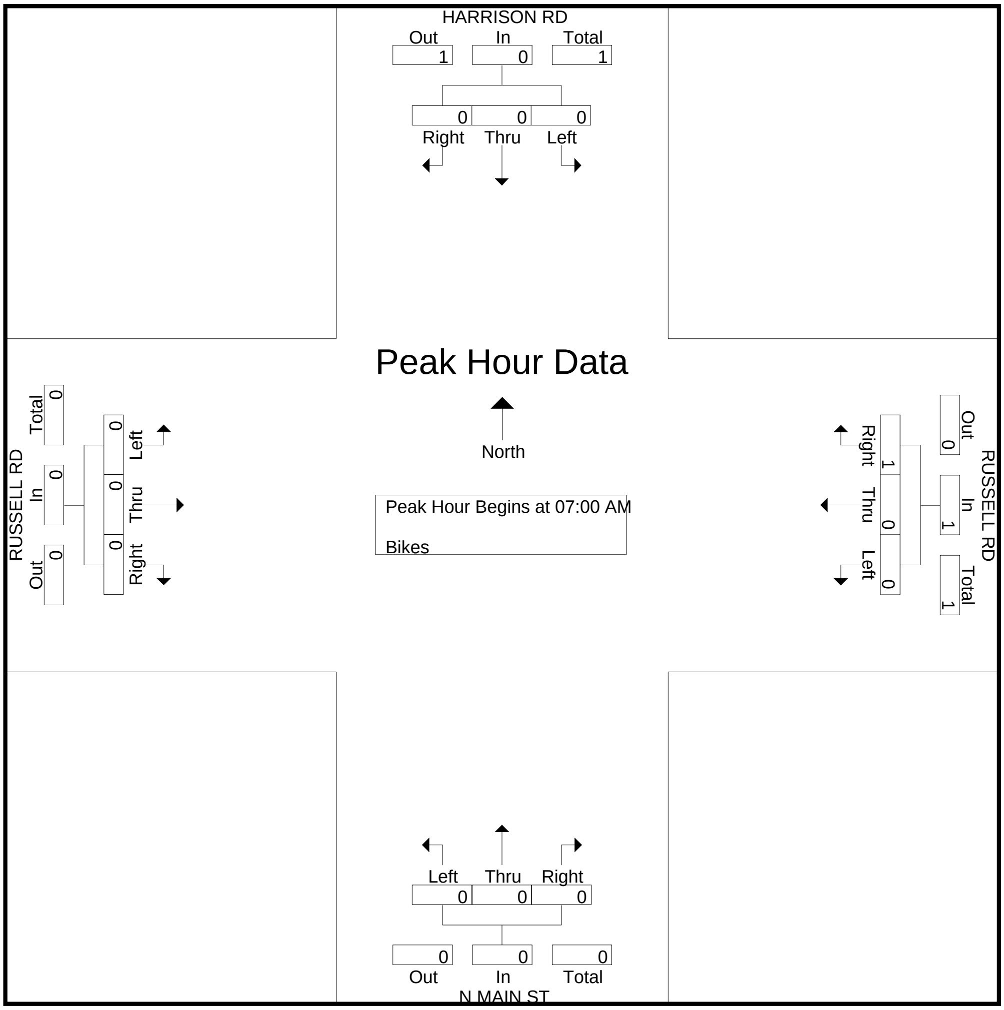
File Name : 8AM FINAL
Site Code : 00000008
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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File Name : 9AM FINAL
Site Code : 00000009
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	VAN BUREN AVE Southbound				RUSSELL RD Westbound				VAN BUREN AVE Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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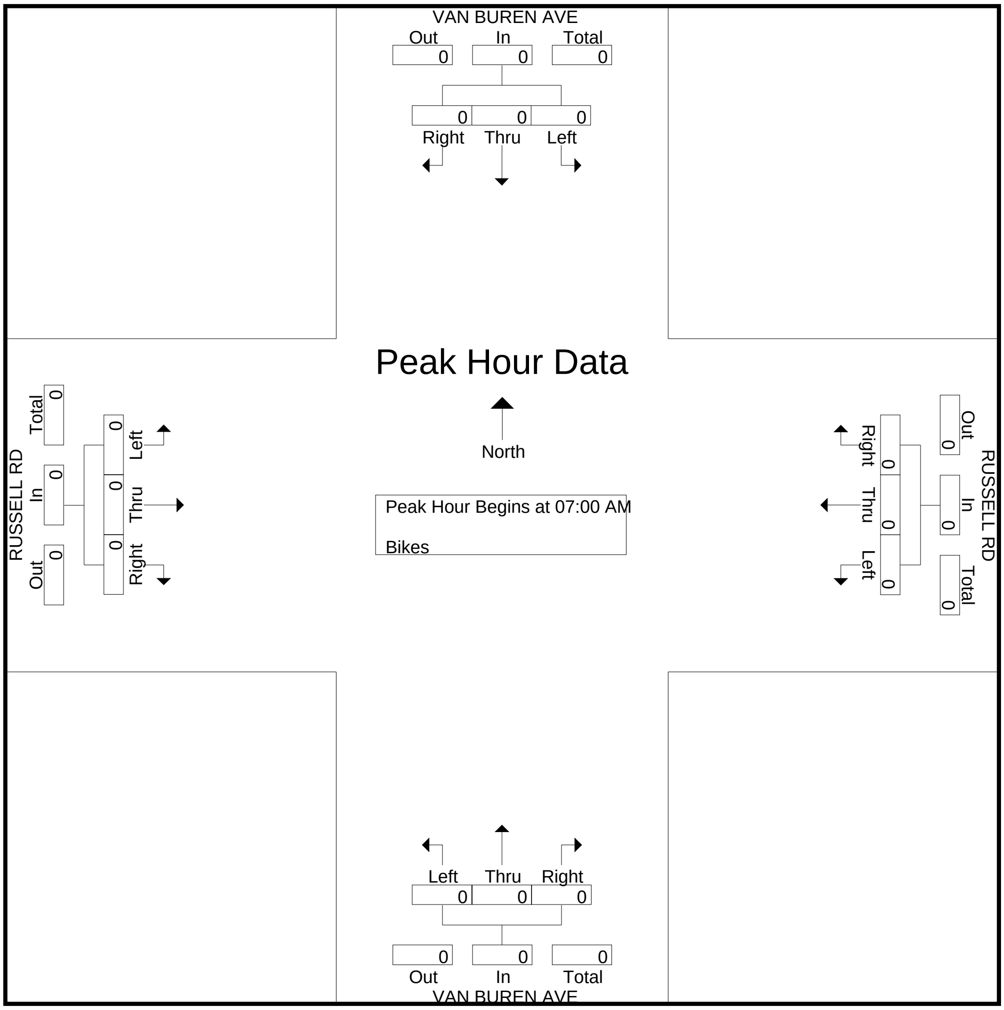
File Name : 9AM FINAL
Site Code : 00000009
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

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File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					ROGGE RD Westbound					SAN JUAN GRADE RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	100	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	SAN JUAN GRADE RD Southbound				ROGGE RD Westbound				SAN JUAN GRADE RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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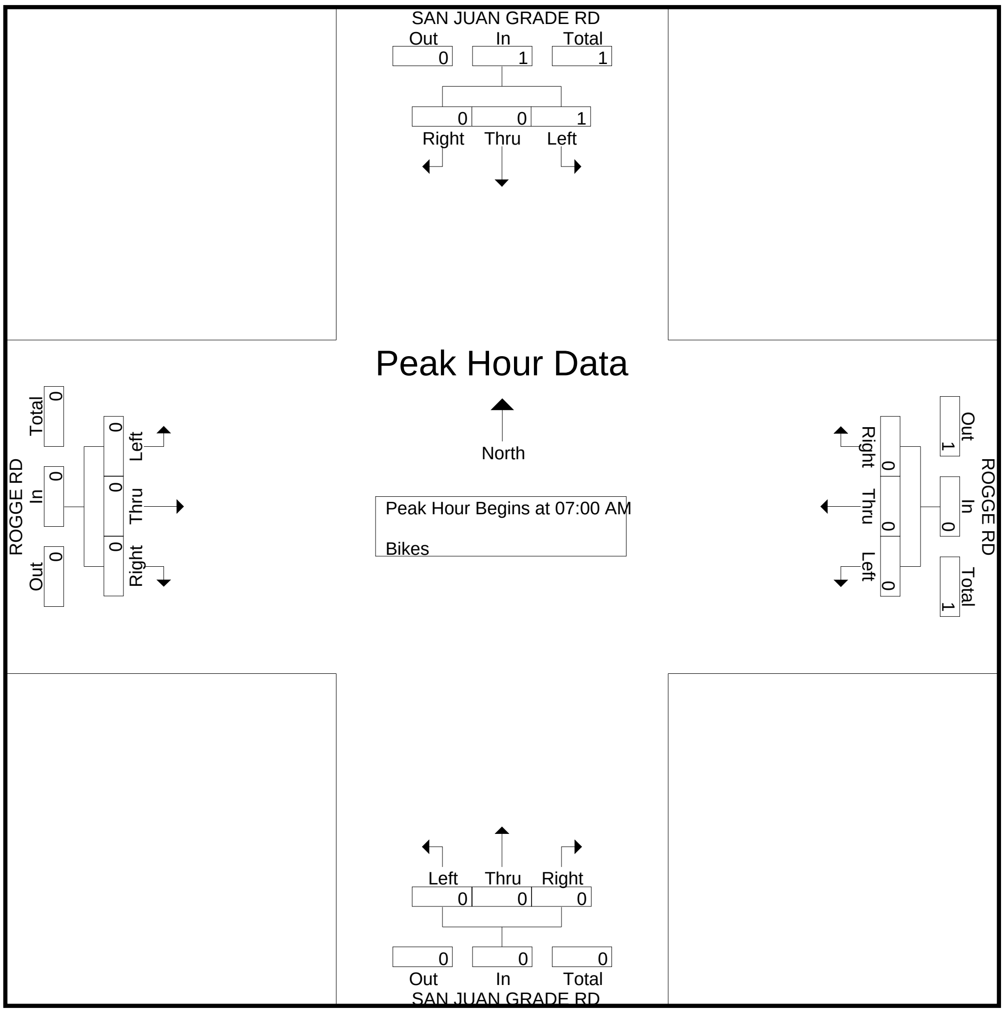
File Name : 10AM FINAL
Site Code : 00000010
Start Date : 11/17/2015
Page No : 2



Traffic Data Service
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(408) 377-2988
tdsbay@cs.com

File Name : 11AM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

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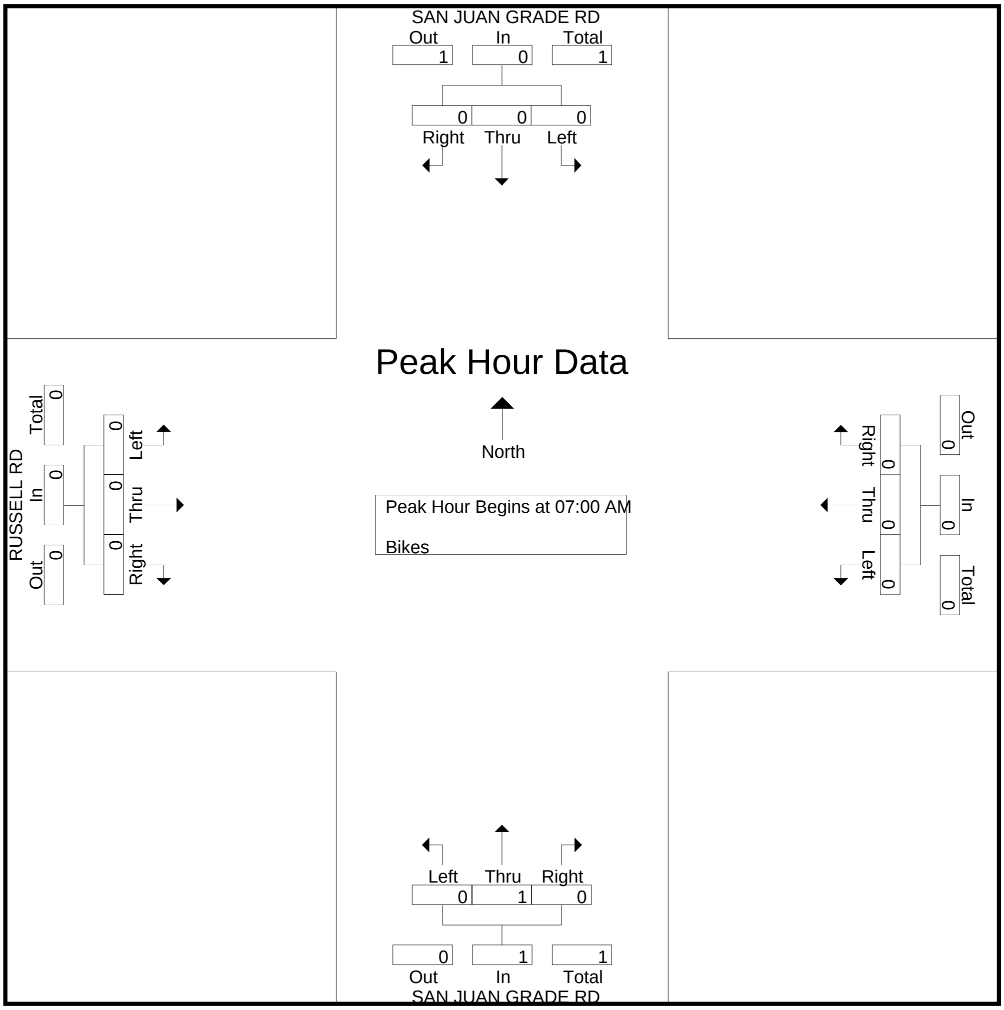
File Name : 11AM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
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File Name : 12AM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

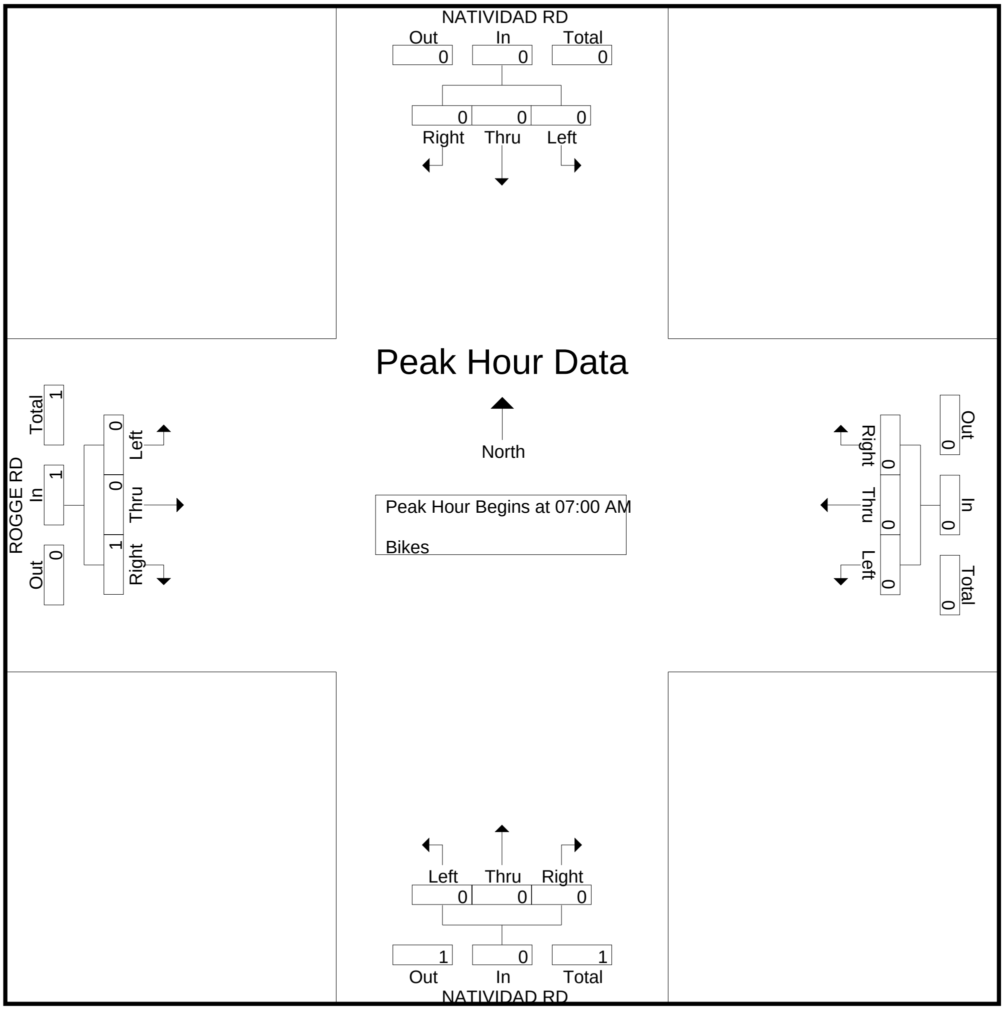
	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 12AM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	4
Total	0	1	0	0	1	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	7
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	1	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	7
Apprch %	0	100	0	0		0	0	0	0		0	80	20	0		0	0	100	0		
Total %	0	14.3	0	0	14.3	0	0	0	0	0	0	57.1	14.3	0	71.4	0	0	14.3	0	14.3	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				VAN BUREN AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	1	**1**	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	**3**	0	**3**	0	0	**1**	**1**	**4**
Total Volume	0	1	0	1	0	0	0	0	0	4	1	5	0	0	1	1	7
% App. Total	0	100	0		0	0	0		0	80	20		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.333	.250	.417	.000	.000	.250	.250	.438

Traffic Data Service

Campbell, CA
(408) 377-2988
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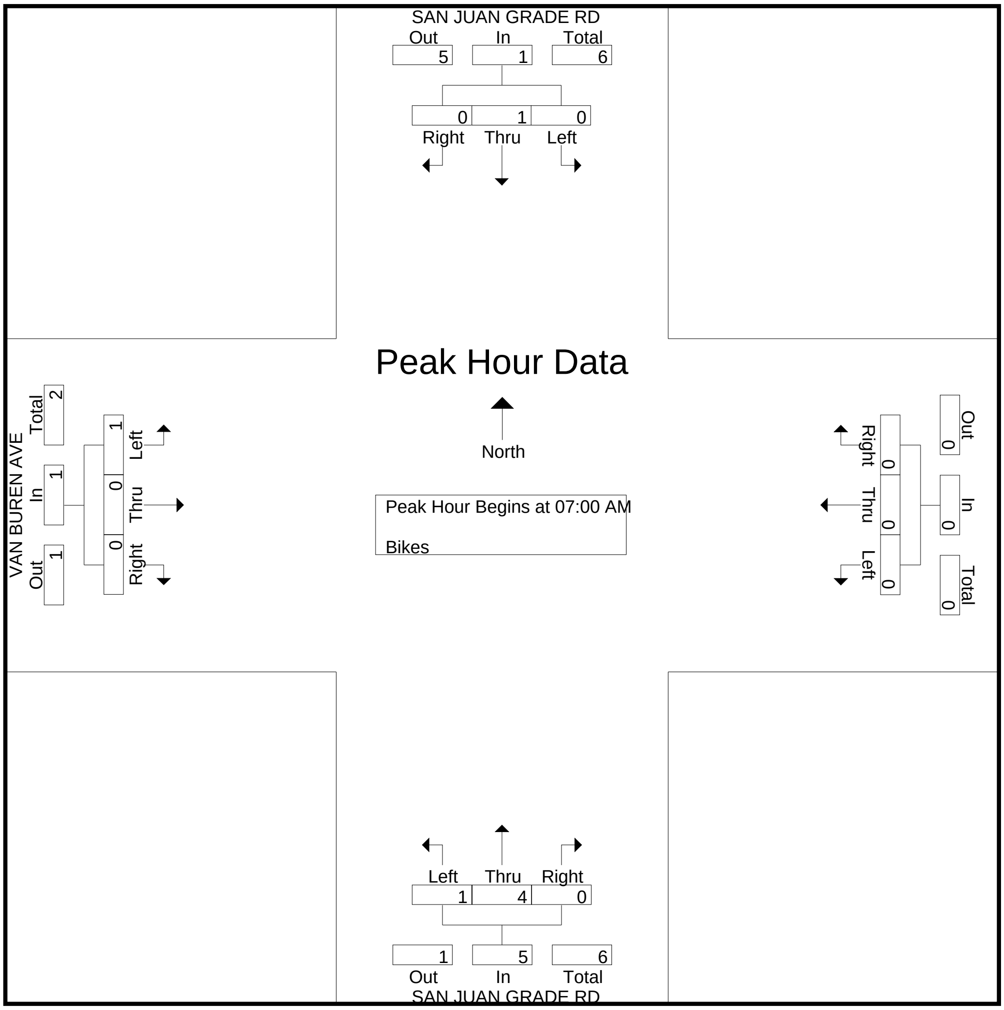
File Name : 14AM FINAL
Site Code : 00000014
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 15AM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					US-101 SB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Apprch %	0	0	100	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	50	0	50	0	50	0	0	50	0	0	0	0	0	0	0	0	0	0	

	US-101 SB RAMPS Southbound				BORONDA RD Westbound				US-101 SB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.500

Traffic Data Service

Campbell, CA

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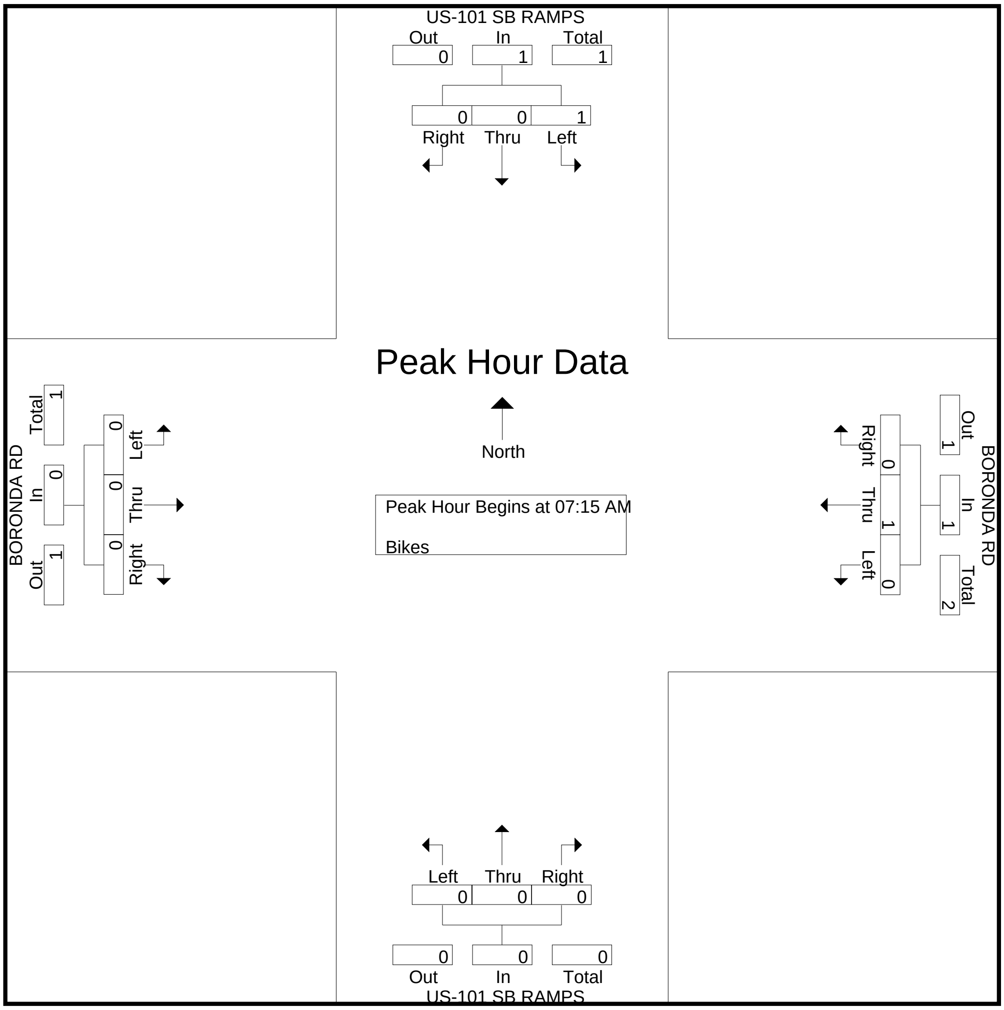
File Name : 15AM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 16AM FINAL
Site Code : 00000016
Start Date : 1/14/2016

Groups Printed- Bikes

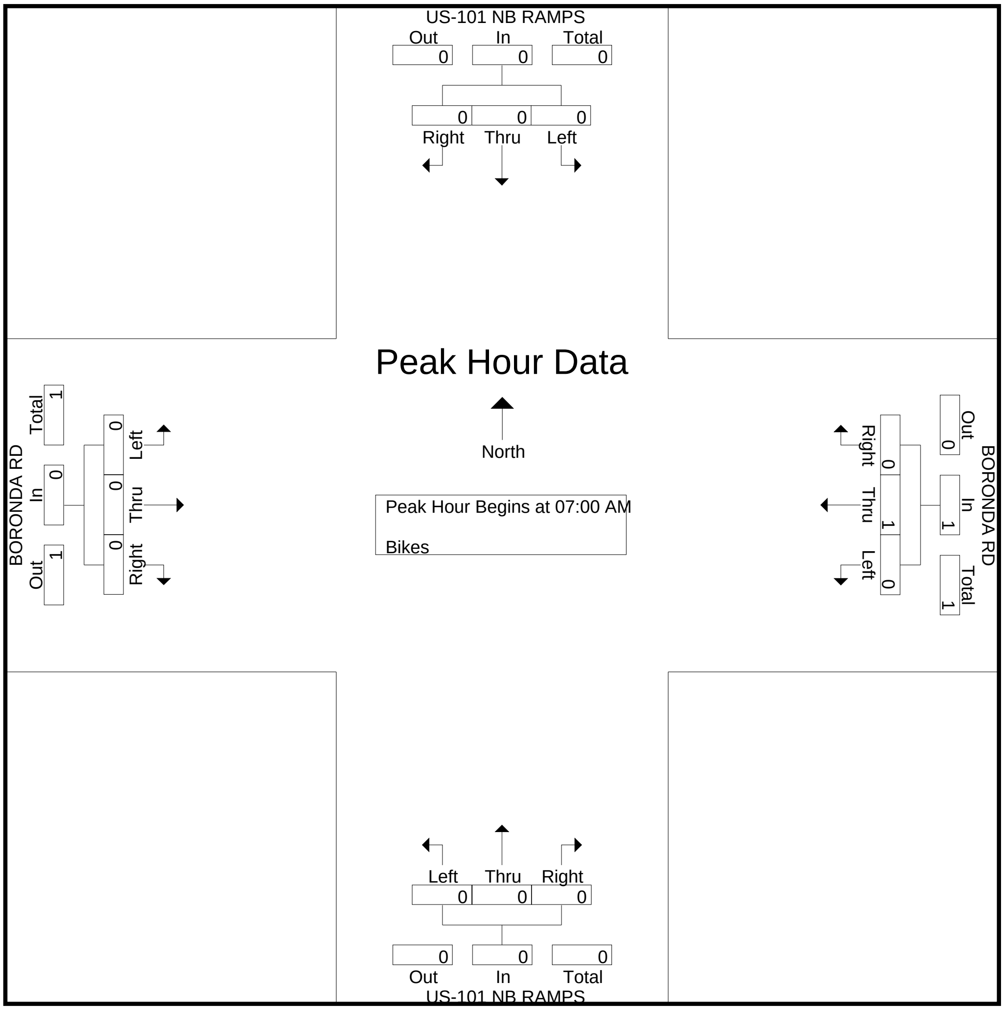
	US-101 NB RAMPS Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	

	US-101 NB RAMPS Southbound				BORONDA RD Westbound				US-101 NB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 16AM FINAL
Site Code : 00000016
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 17AM FINAL
Site Code : 00000017
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E BORONDA RD Westbound					N MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	N MAIN ST Southbound				E BORONDA RD Westbound				N MAIN ST Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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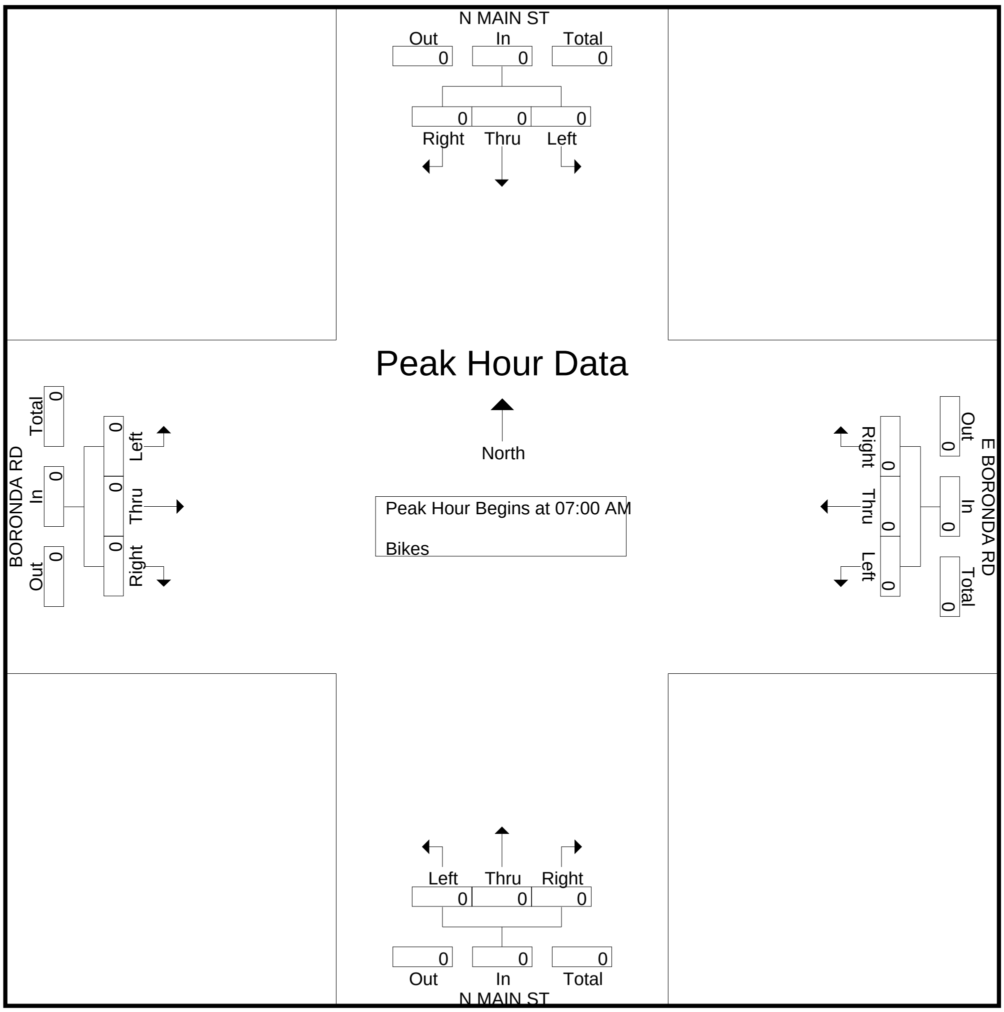
File Name : 17AM FINAL
Site Code : 00000017
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 18AM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

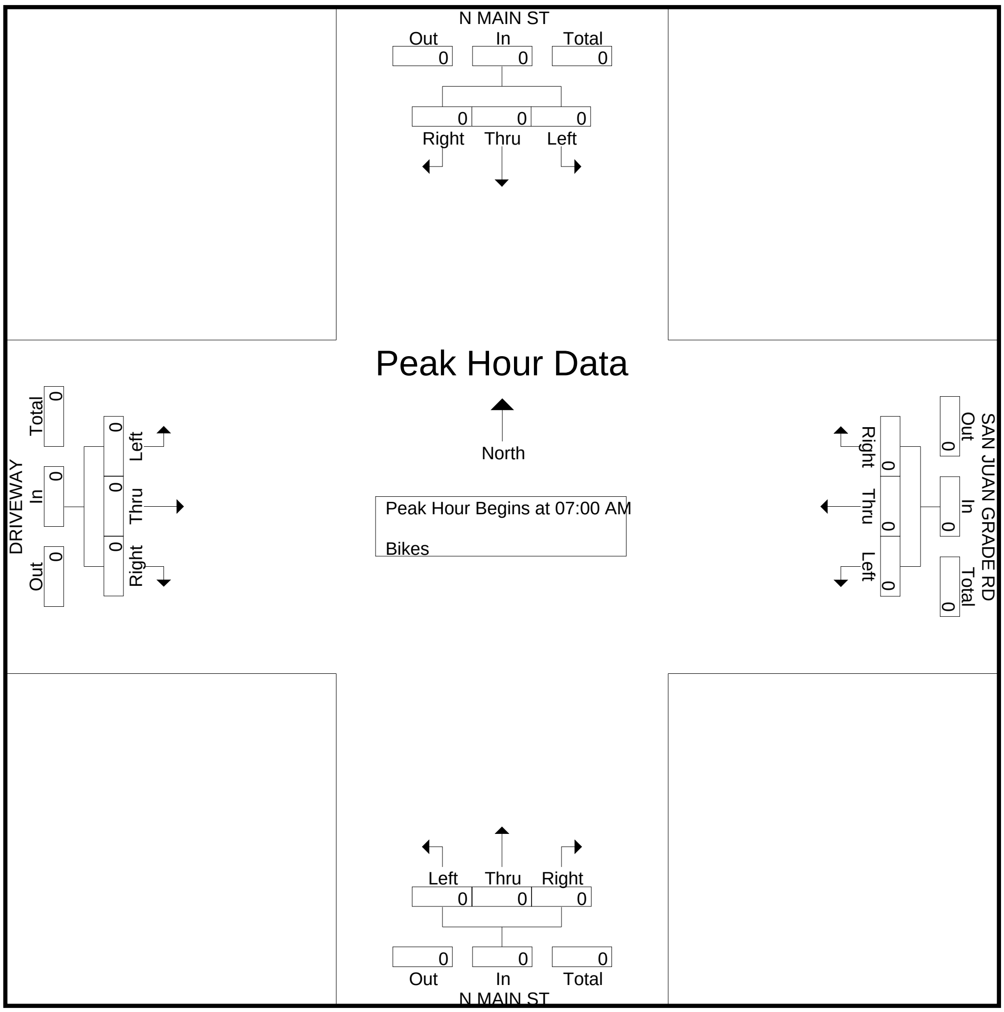
	N MAIN ST Southbound					SAN JUAN GRADE RD Westbound					N MAIN ST Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	N MAIN ST Southbound				SAN JUAN GRADE RD Westbound				N MAIN ST Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 18AM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 19AM FINAL
Site Code : 00000019
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

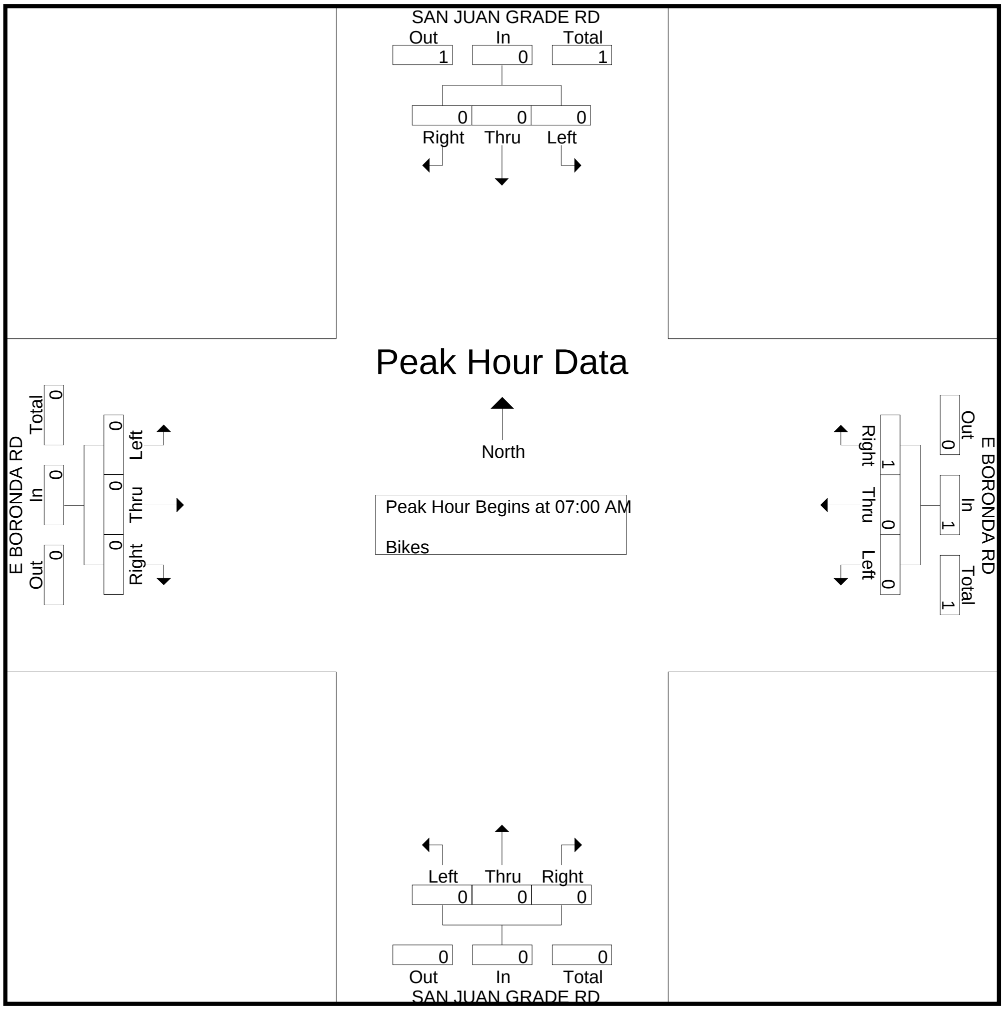
	SAN JUAN GRADE RD Southbound					E BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		100	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	

	SAN JUAN GRADE RD Southbound				E BORONDA RD Westbound				SAN JUAN GRADE RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 19AM FINAL
Site Code : 00000019
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/18/2015

Groups Printed- Bikes

	MCKINNON ST Southbound					E BORONDA RD Westbound					MCKINNON ST Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	MCKINNON ST Southbound				E BORONDA RD Westbound				MCKINNON ST Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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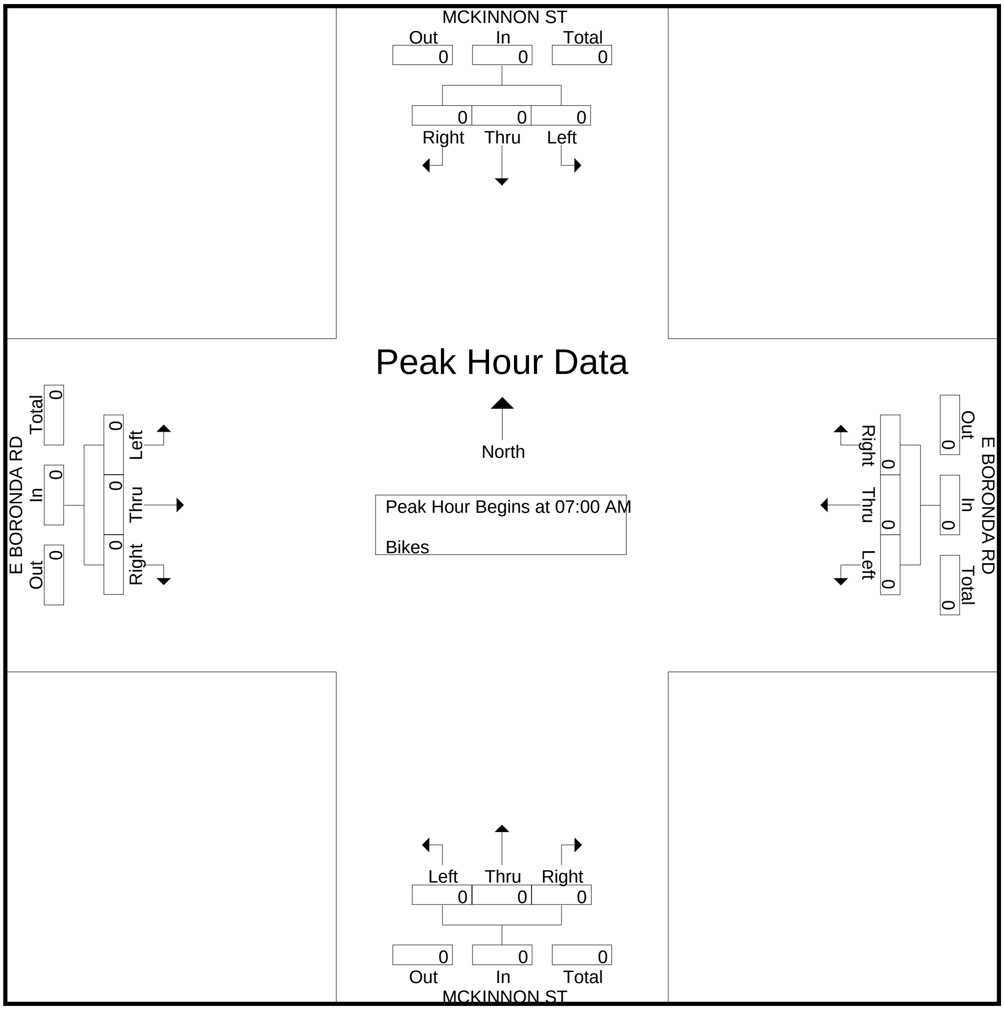
File Name : 20AM FINAL
Site Code : 00000020
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 21AM FINAL
Site Code : 00000021
Start Date : 11/18/2015

Groups Printed- Bikes

	Southbound					E BORONDA RD Westbound					EL DORADO DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	Southbound				E BORONDA RD Westbound				EL DORADO DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
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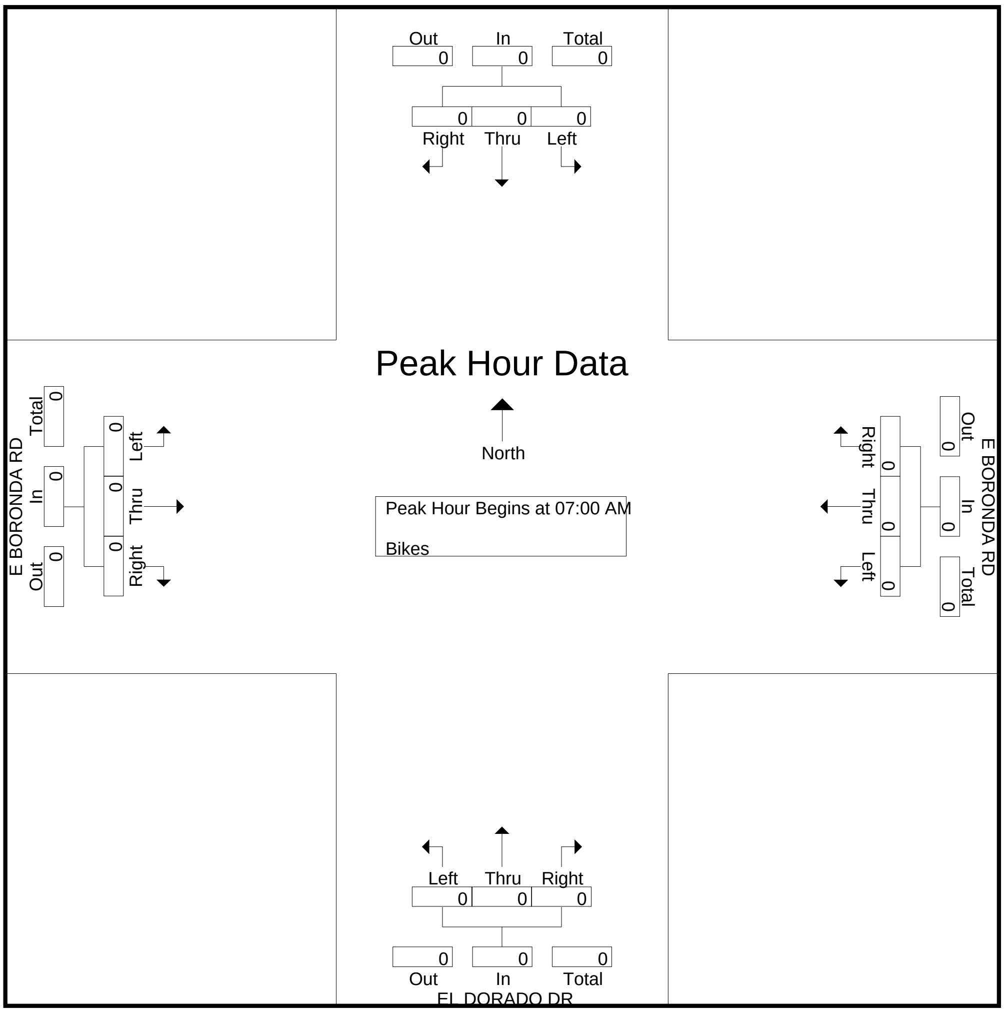
File Name : 21AM FINAL
Site Code : 00000021
Start Date : 11/18/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

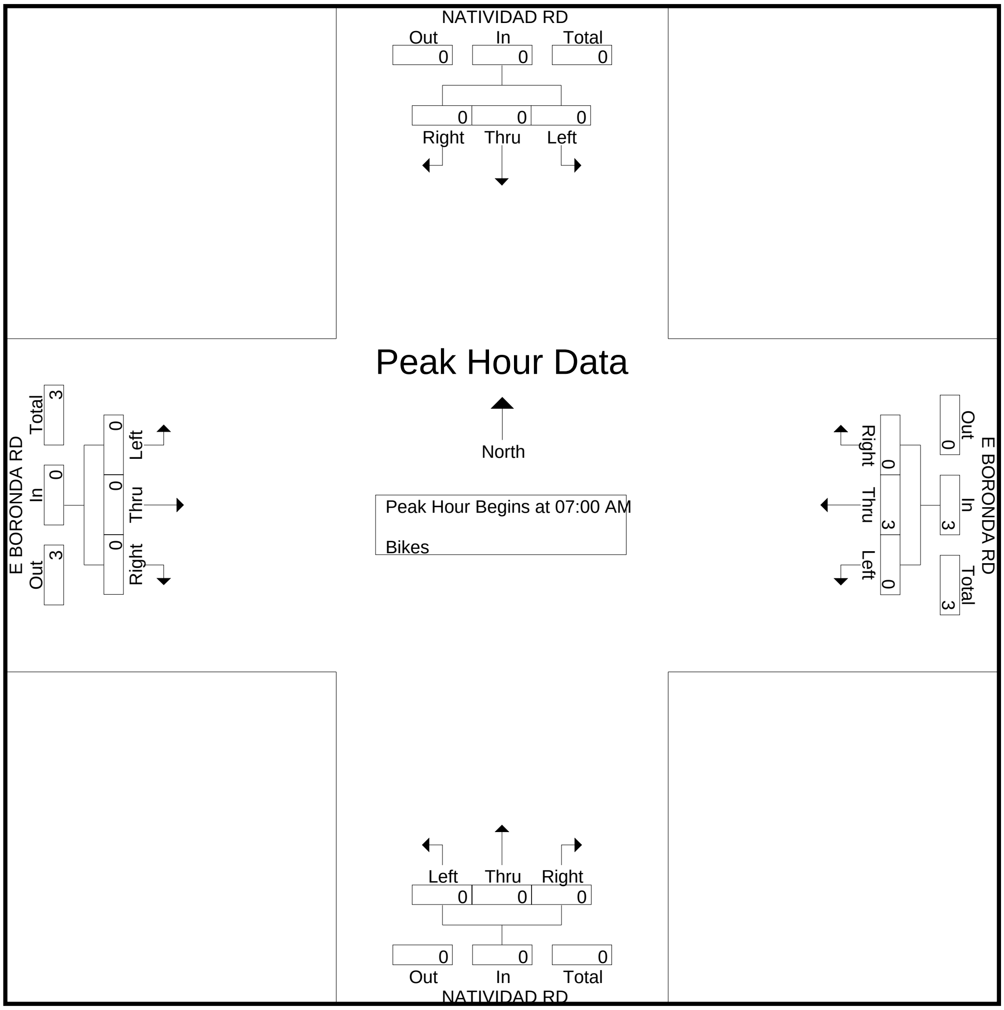
	NATIVIDAD RD Southbound					E BORONDA RD Westbound					NATIVIDAD RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	

	NATIVIDAD RD Southbound				E BORONDA RD Westbound				NATIVIDAD RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	**3**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 22AM FINAL
Site Code : 00000022
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 23AM FINAL
Site Code : 00000023
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	Southbound					E BORONDA RD Westbound					INDEPENDENCE BLVD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Apprch %	0	0	0	0		0	100	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	0	0	0	0	50	0	0	50	0	0	50	0	50	0	0	0	0	0	

	Southbound				E BORONDA RD Westbound				INDEPENDENCE BLVD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.500

Traffic Data Service

Campbell, CA
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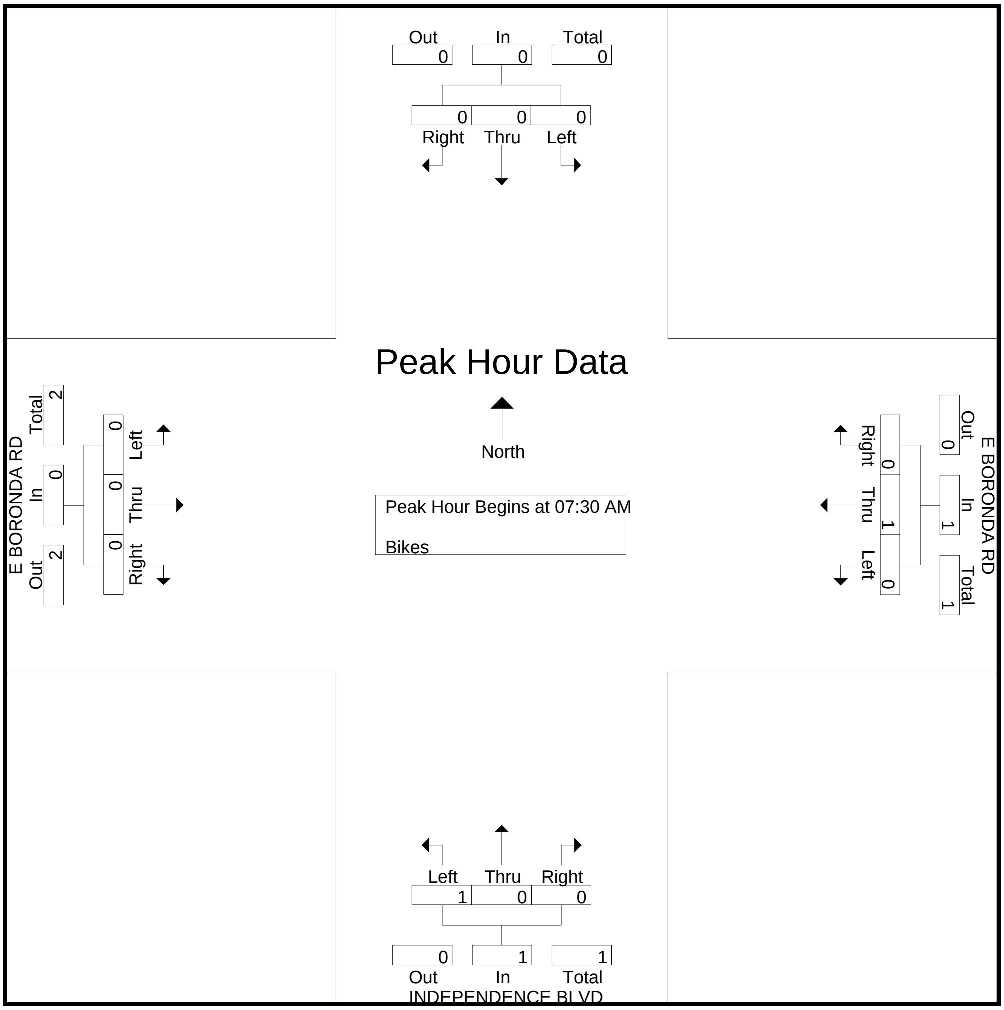
File Name : 23AM FINAL
Site Code : 00000023
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 24AM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

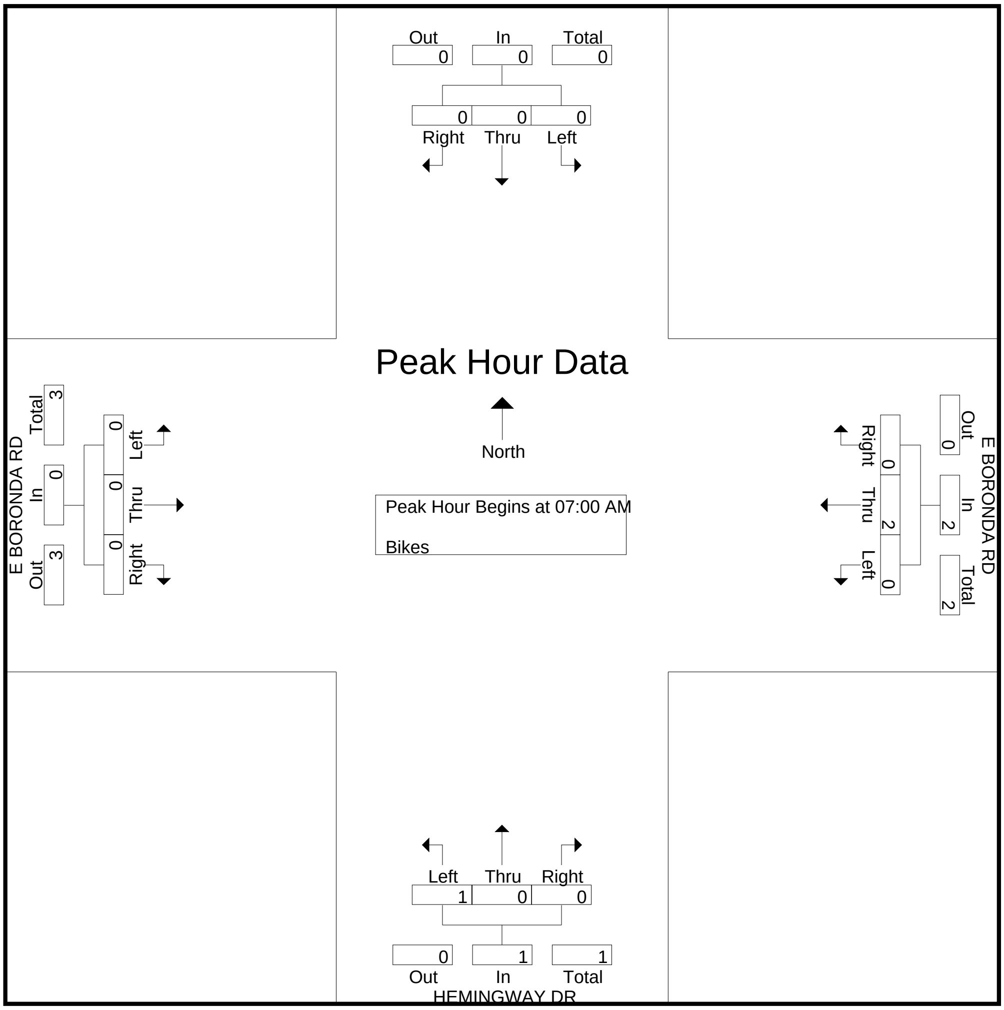
	Southbound					E BORONDA RD Westbound					HEMINGWAY DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	3
Apprch %	0	0	0	0		0	100	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	0	0	0	0	66.7	0	0	66.7	0	0	33.3	0	33.3	0	0	0	0	0	

	Southbound				E BORONDA RD Westbound				HEMINGWAY DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	1	0	1	0	0	**1**	**1**	0	0	0	0	**2**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
% App. Total	0	0	0		0	100	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.250	.250	.000	.000	.000	.000	.375

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 24AM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 26AM FINAL
Site Code : 00000026
Start Date : 11/18/2015

Groups Printed- Bikes

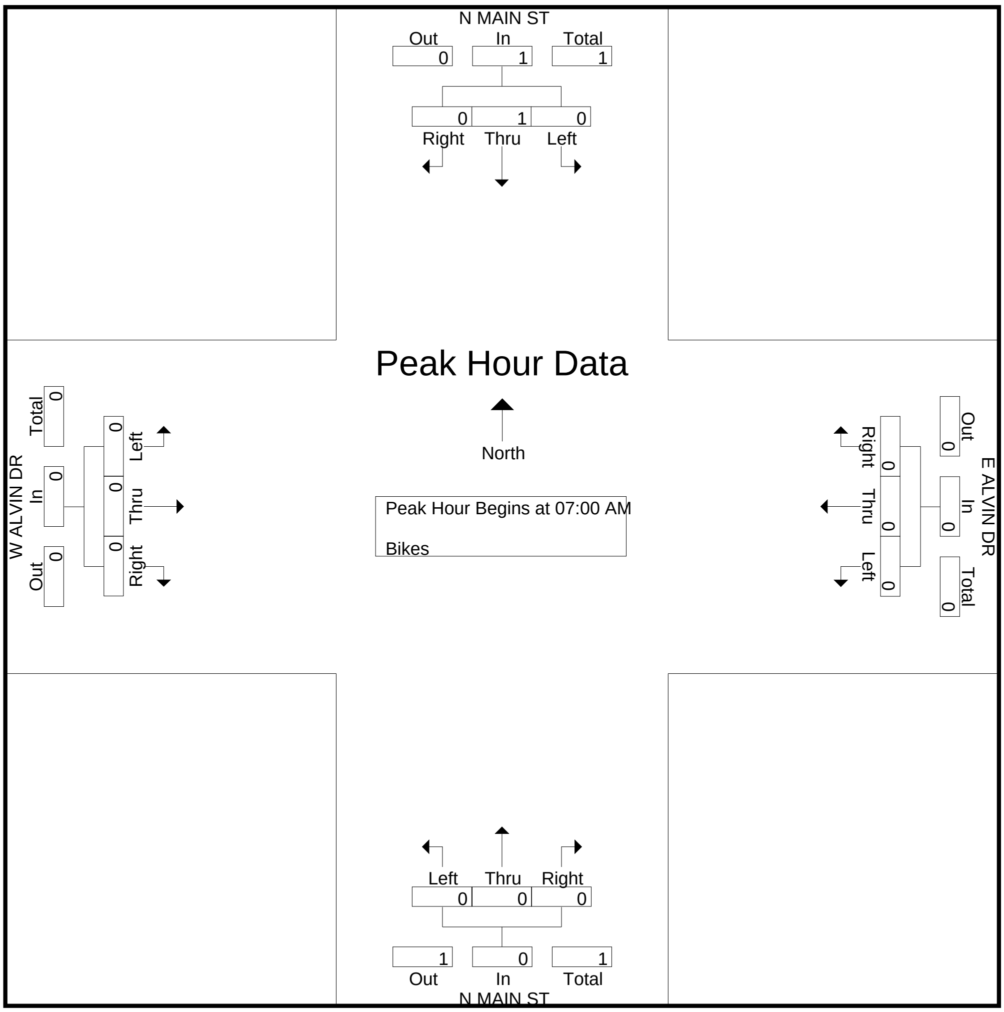
	N MAIN ST Southbound					E ALVIN DR Westbound					N MAIN ST Northbound					W ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	N MAIN ST Southbound				E ALVIN DR Westbound				N MAIN ST Northbound				W ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 26AM FINAL
Site Code : 00000026
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 27AM FINAL
Site Code : 00000027
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					E ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Grand Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	66.7	0	0	66.7	0	0	0	0	0	0	33.3	0	0	33.3	0	0	0	0	0	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				E ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	**2**	0	**2**	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**3**
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
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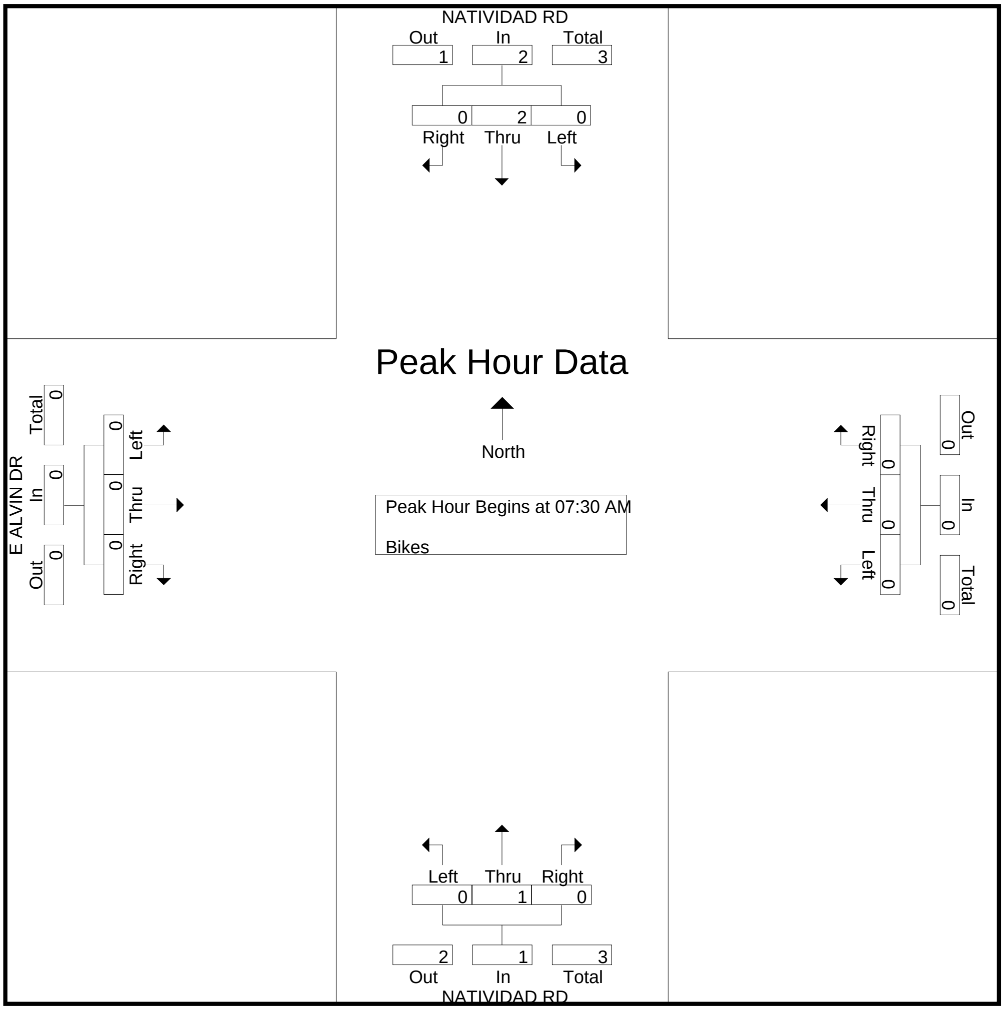
File Name : 27AM FINAL
Site Code : 00000027
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 28AM FINAL
Site Code : 00000028
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	INDEPENDENCE BLVD Southbound					CONSTITUTION BLVD Westbound					DRIVEWAY Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	INDEPENDENCE BLVD Southbound				CONSTITUTION BLVD Westbound				DRIVEWAY Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA

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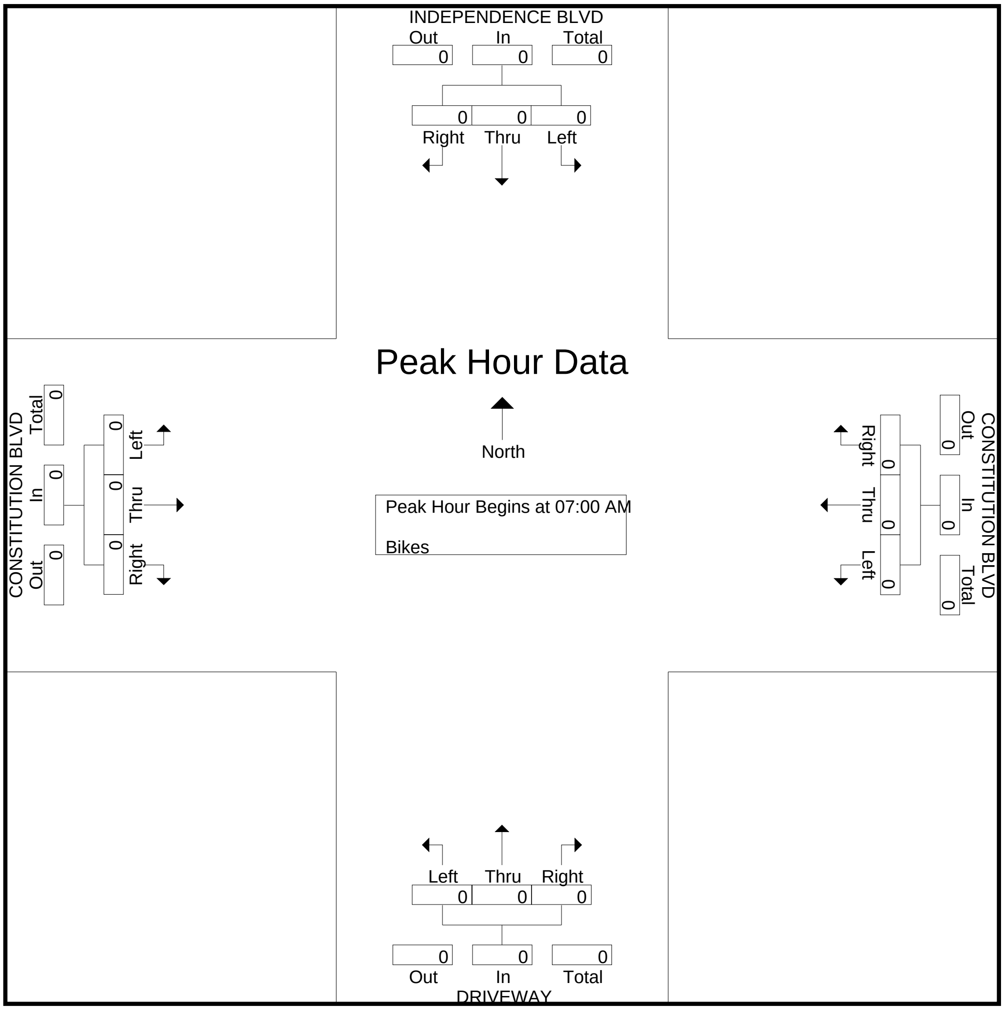
File Name : 28AM FINAL
Site Code : 00000028
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 29AM FINAL
Site Code : 00000029
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	E BORONDA RD Southbound					Westbound					E BORONDA RD Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	E BORONDA RD Southbound				Westbound				E BORONDA RD Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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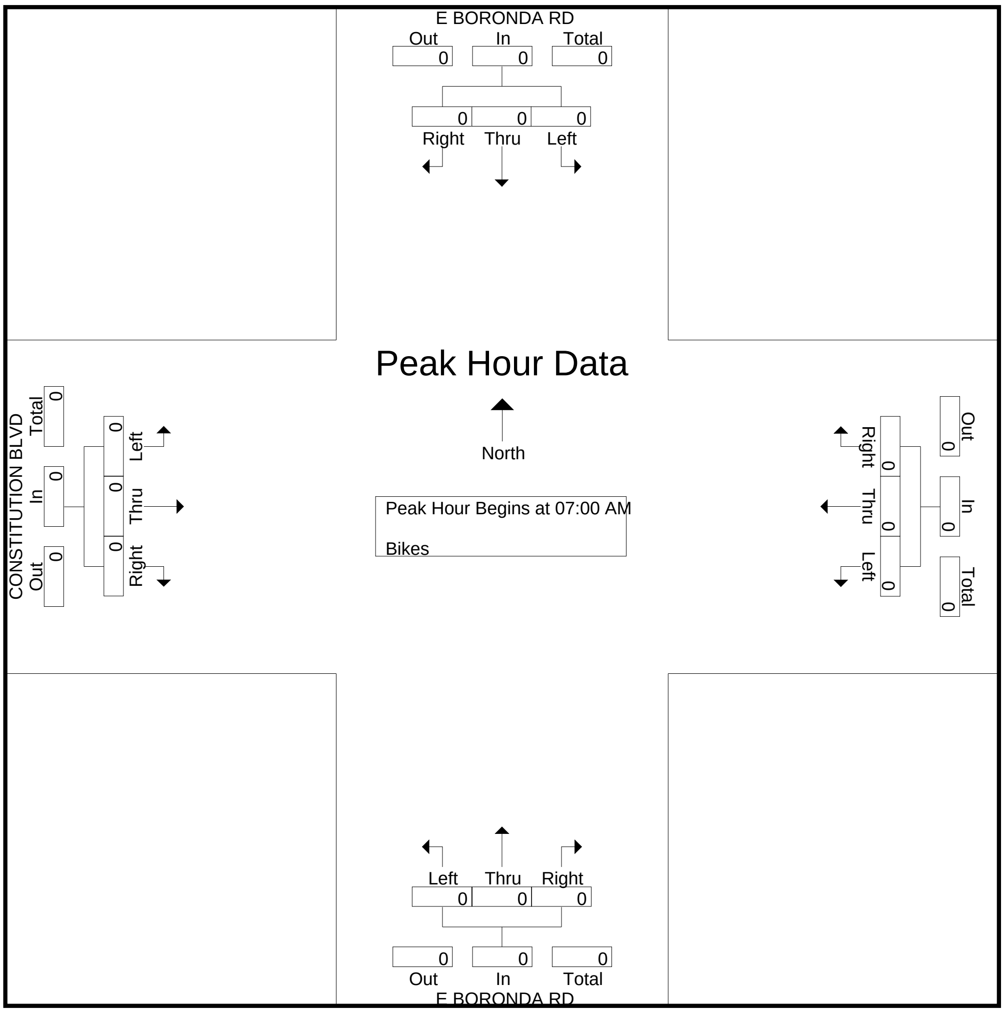
File Name : 29AM FINAL
Site Code : 00000029
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 30AM FINAL
Site Code : 00000030
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	US-101 SB RAMPS Southbound					W LAUREL DR Westbound					US-101 SB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	

	US-101 SB RAMPS Southbound				W LAUREL DR Westbound				US-101 SB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Traffic Data Service

Campbell, CA
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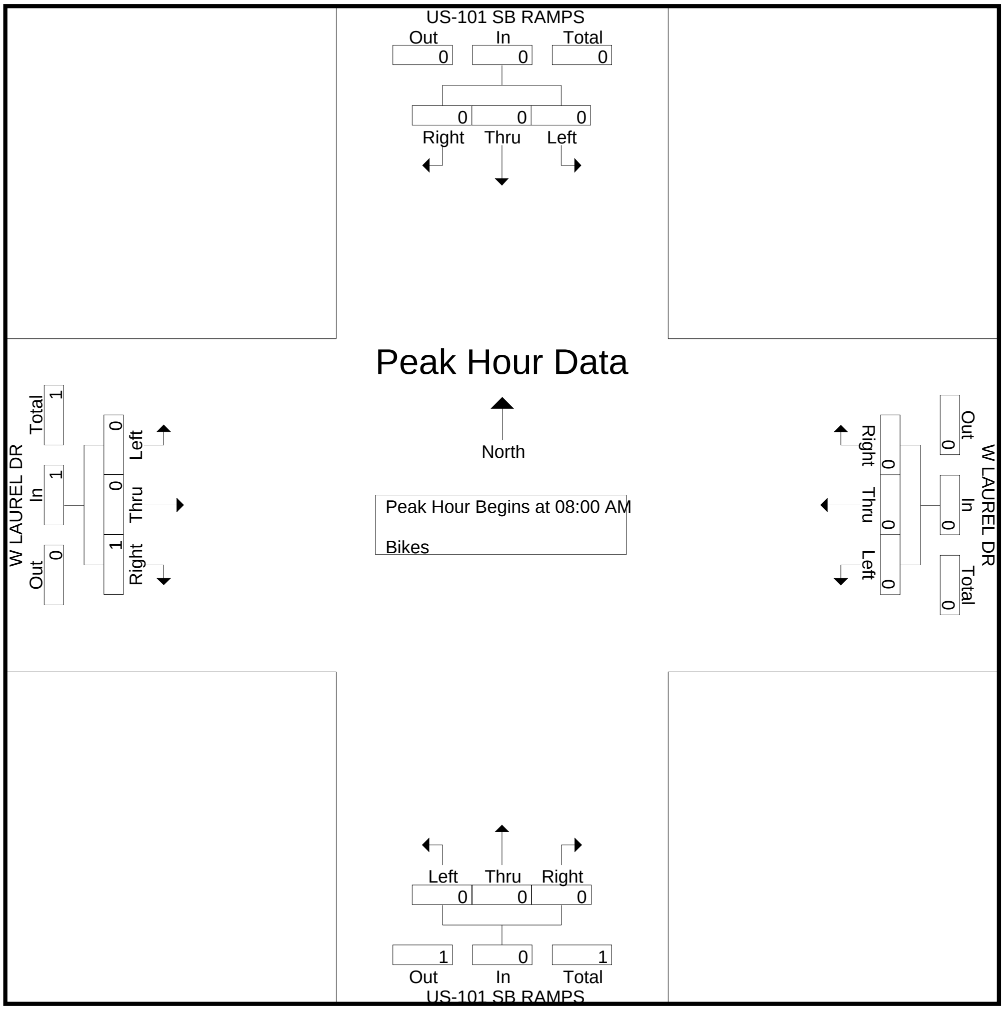
File Name : 30AM FINAL
Site Code : 00000030
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 31AM FINAL
Site Code : 00000031
Start Date : 1/14/2016

Groups Printed- Bikes

	US-101 NB RAMPS Southbound					W LAUREL DR Westbound					US-101 NB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB RAMPS Southbound				W LAUREL DR Westbound				US-101 NB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA

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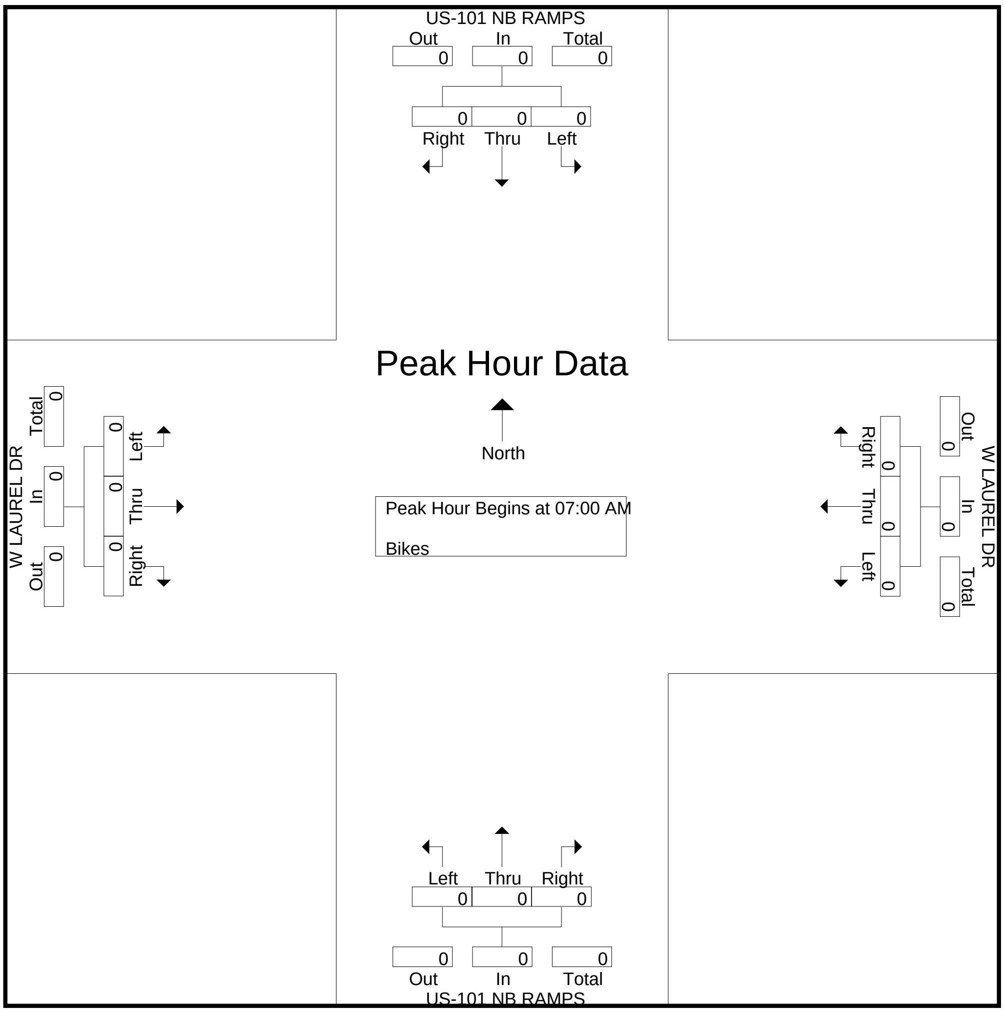
File Name : 31AM FINAL
Site Code : 00000031
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 32AM FINAL
Site Code : 00000032
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

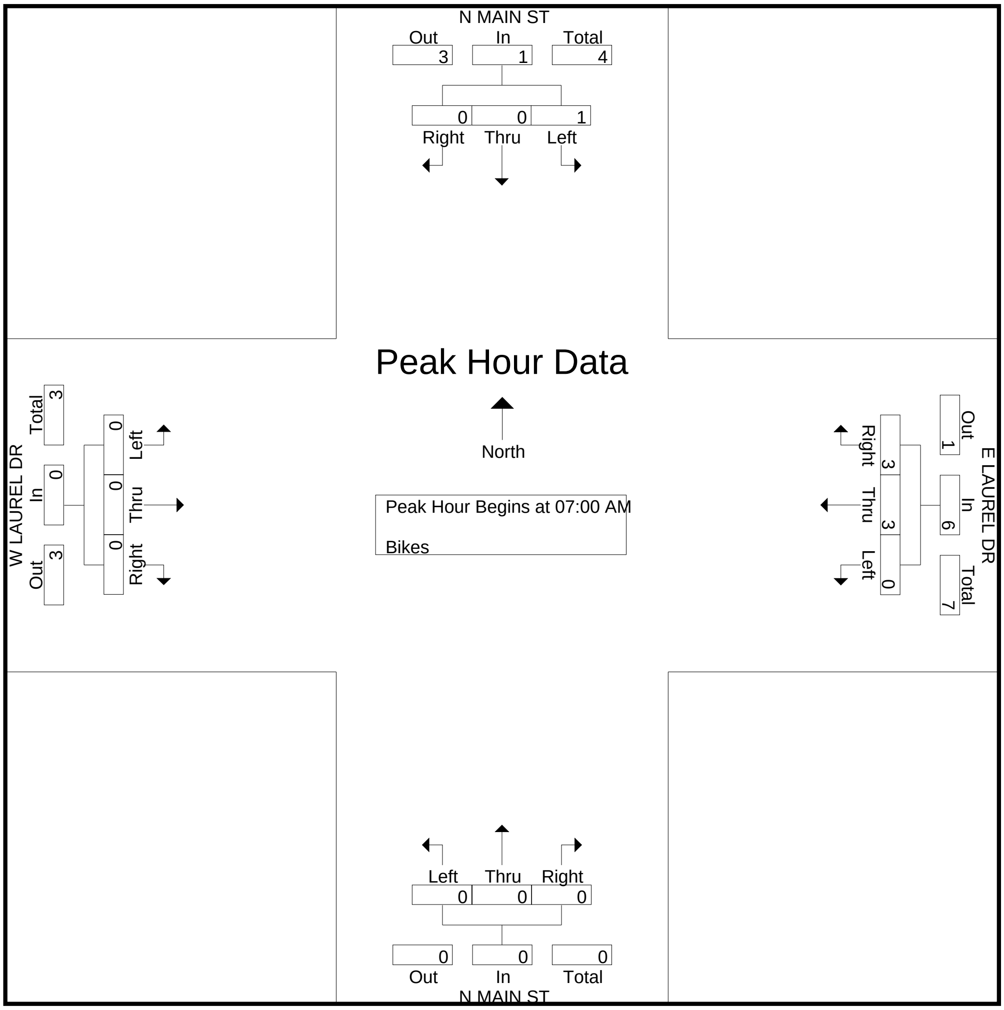
	N MAIN ST Southbound					E LAUREL DR Westbound					N MAIN ST Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	7
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	1	0	2	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	8
Apprch %	0	50	50	0		50	50	0	0		0	0	0	0		0	0	0	0		
Total %	0	12.5	12.5	0	25	37.5	37.5	0	0	75	0	0	0	0	0	0	0	0	0	0	

	N MAIN ST Southbound				E LAUREL DR Westbound				N MAIN ST Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**3**	**1**	0	**4**	0	0	0	0	0	0	0	0	**4**
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	**1**	**1**	0	1	0	1	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	3	3	0	6	0	0	0	0	0	0	0	0	7
% App. Total	0	0	100		50	50	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.250	.750	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.438

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 32AM FINAL
Site Code : 00000032
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 33AM FINAL
Site Code : 00000033
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	NATIVIDAD RD Southbound					E LAUREL DR Westbound					NATIVIDAD RD Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	

	NATIVIDAD RD Southbound				E LAUREL DR Westbound				NATIVIDAD RD Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
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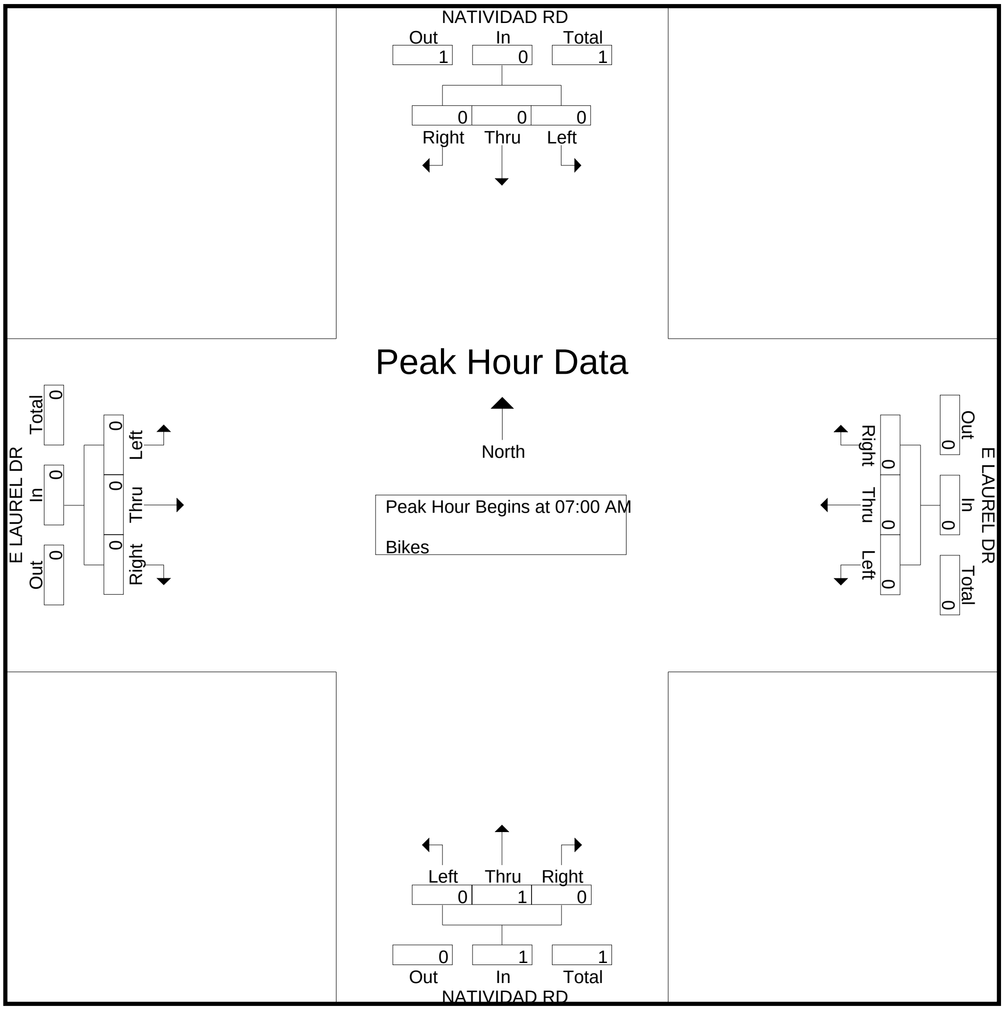
File Name : 33AM FINAL
Site Code : 00000033
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 34AM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	CONSTITUTION BLVD Southbound					E LAUREL DR Westbound					Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	CONSTITUTION BLVD Southbound				E LAUREL DR Westbound				Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
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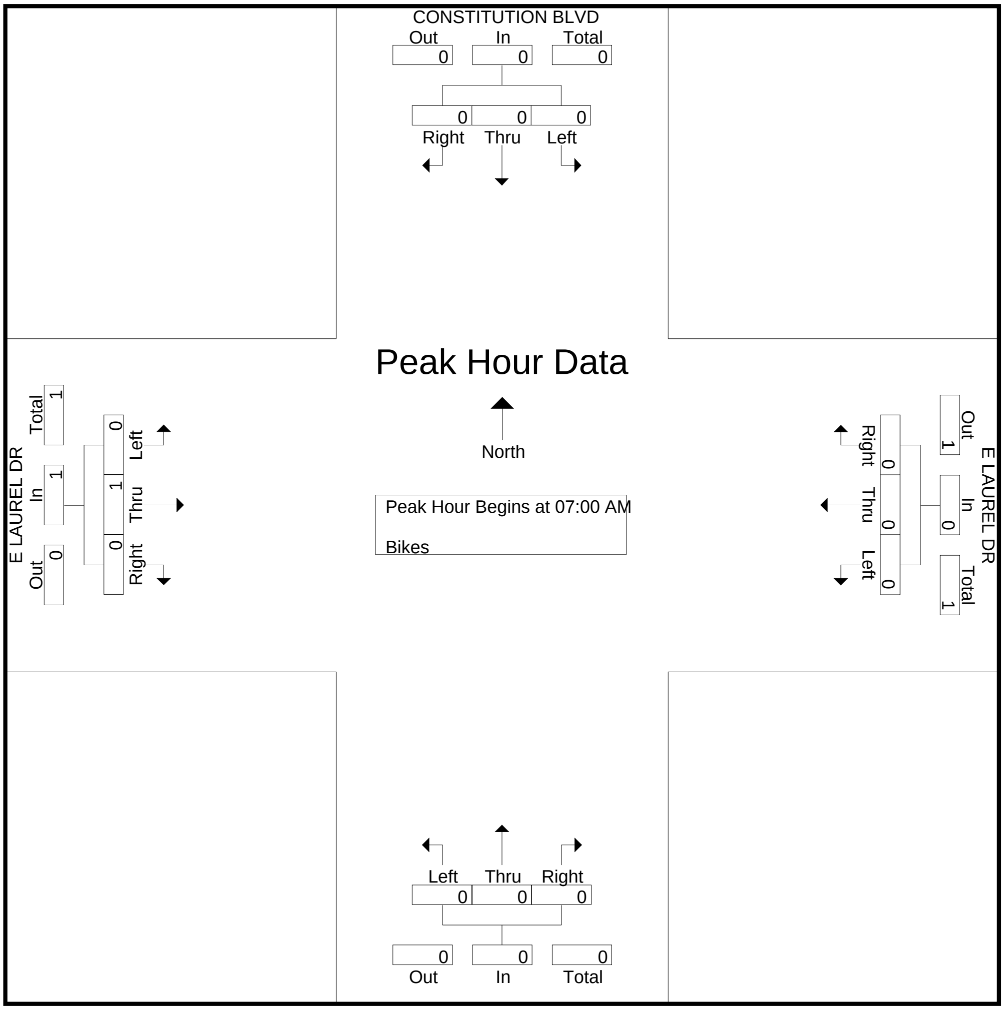
File Name : 34AM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 35AM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	Southbound					E BORONDA RD Westbound					N SANBORN RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	Southbound				E BORONDA RD Westbound				N SANBORN RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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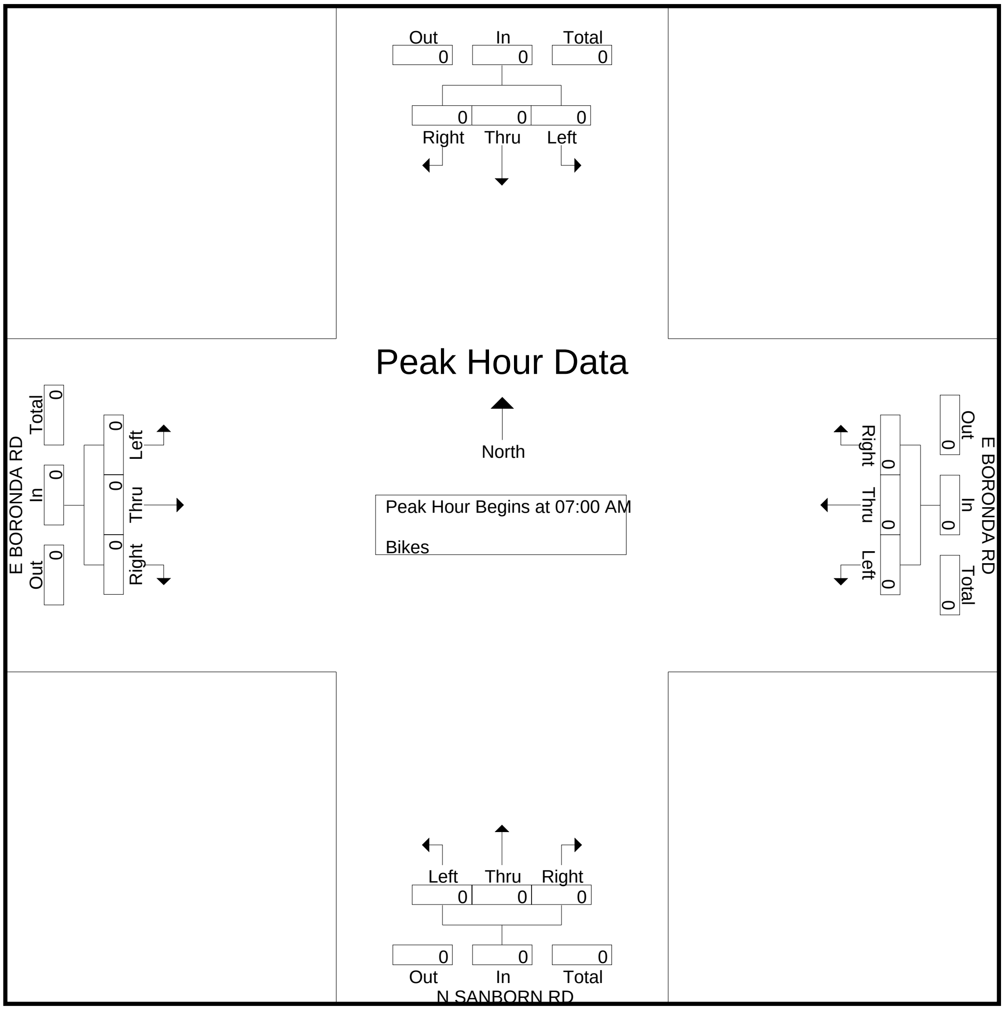
File Name : 35AM FINAL
Site Code : 00000035
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 36AM FINAL
Site Code : 00000036
Start Date : 11/17/2015

Groups Printed- Bikes

	OLD STAGE RD Southbound					WILLIAMS RD Westbound					OLD STAGE RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	OLD STAGE RD Southbound				WILLIAMS RD Westbound				OLD STAGE RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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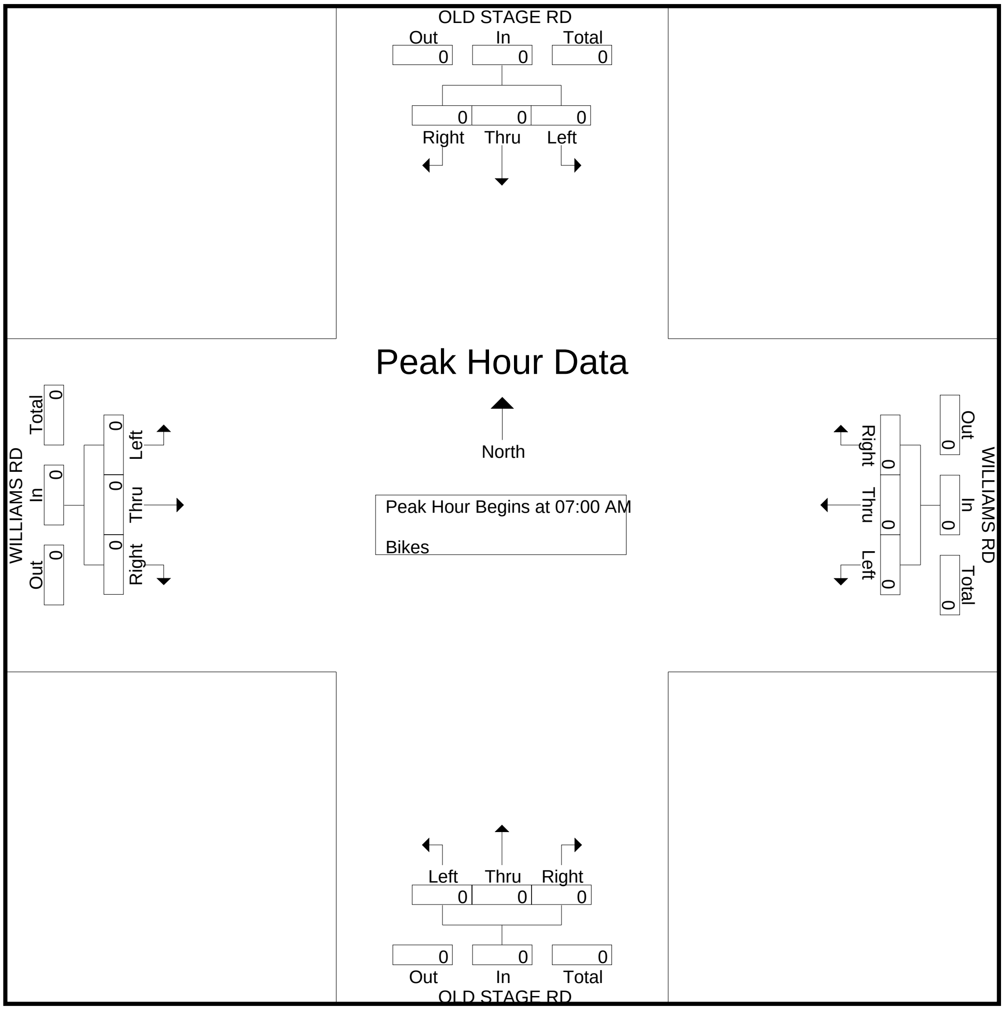
File Name : 36AM FINAL
Site Code : 00000036
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 37AM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E BERNAL DR Westbound					N MAIN ST Northbound					W BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	33.3	0	0	33.3	0	0	0	0	0	0	33.3	0	0	33.3	33.3	0	0	0	33.3	

	N MAIN ST Southbound				E BERNAL DR Westbound				N MAIN ST Northbound				W BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**2**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
% App. Total	0	100	0		0	0	0		0	100	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.000	.250	.375

Traffic Data Service

Campbell, CA
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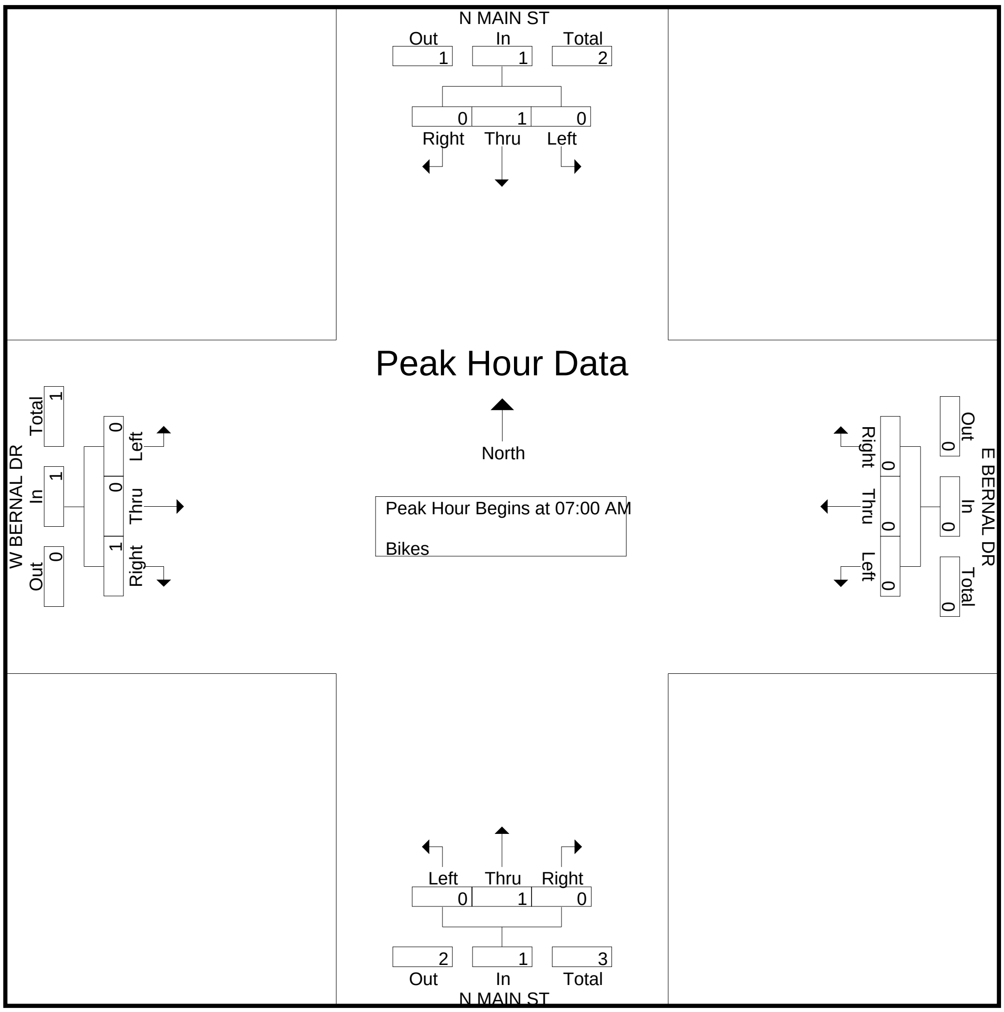
File Name : 37AM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 38AM FINAL
Site Code : 00000038
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

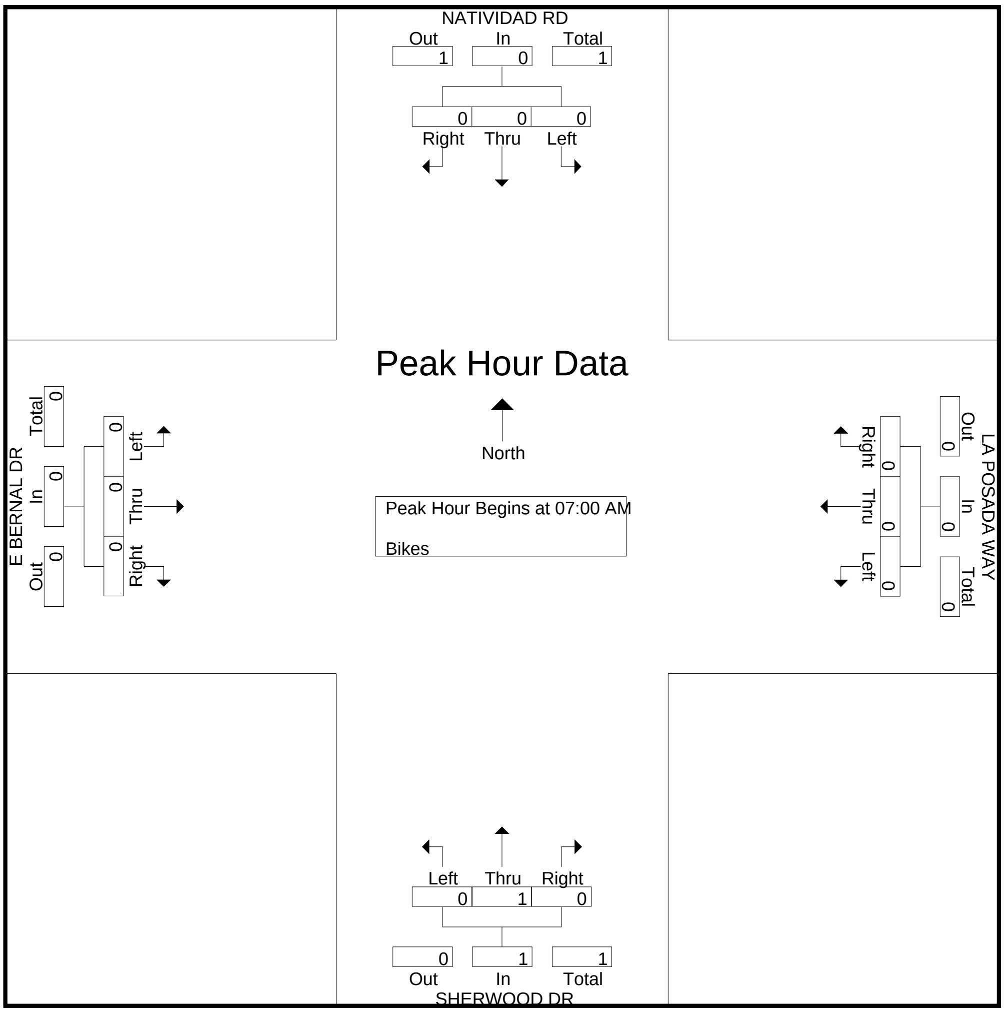
	NATIVIDAD RD Southbound					LA POSADA WAY Westbound					SHERWOOD DR Northbound					E BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	

	NATIVIDAD RD Southbound				LA POSADA WAY Westbound				SHERWOOD DR Northbound				E BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 38AM FINAL
Site Code : 00000038
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 39AM FINAL
Site Code : 00000039
Start Date : 11/17/2015

Groups Printed- Bikes

	E LAUREL DR Southbound					N SANBORN RD Westbound					E LAUREL DR Northbound					N SANBORN RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	0	50	0	0	50	

	E LAUREL DR Southbound				N SANBORN RD Westbound				E LAUREL DR Northbound				N SANBORN RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.500

Traffic Data Service

Campbell, CA

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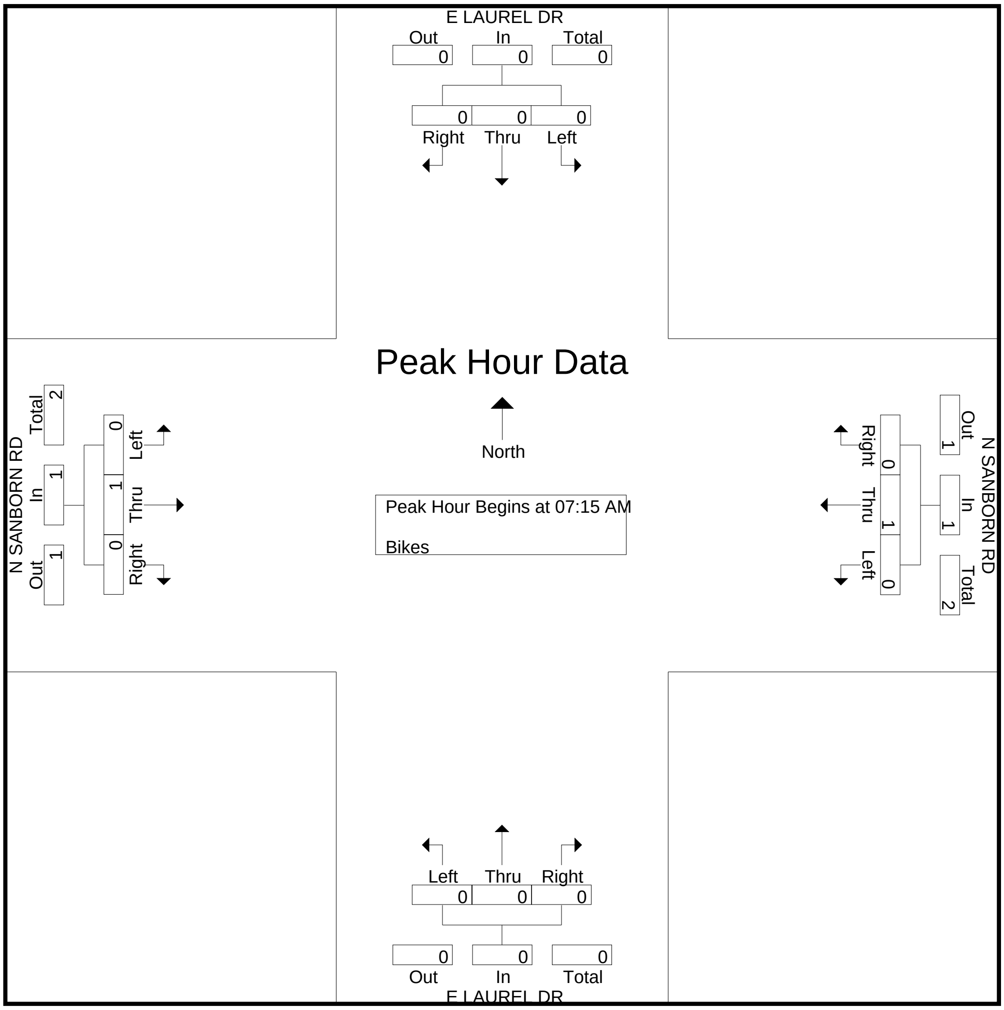
File Name : 39AM FINAL
Site Code : 00000039
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 40AM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	E BORONDA RD Southbound					WILLIAMS RD Westbound					Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	E BORONDA RD Southbound				WILLIAMS RD Westbound				Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
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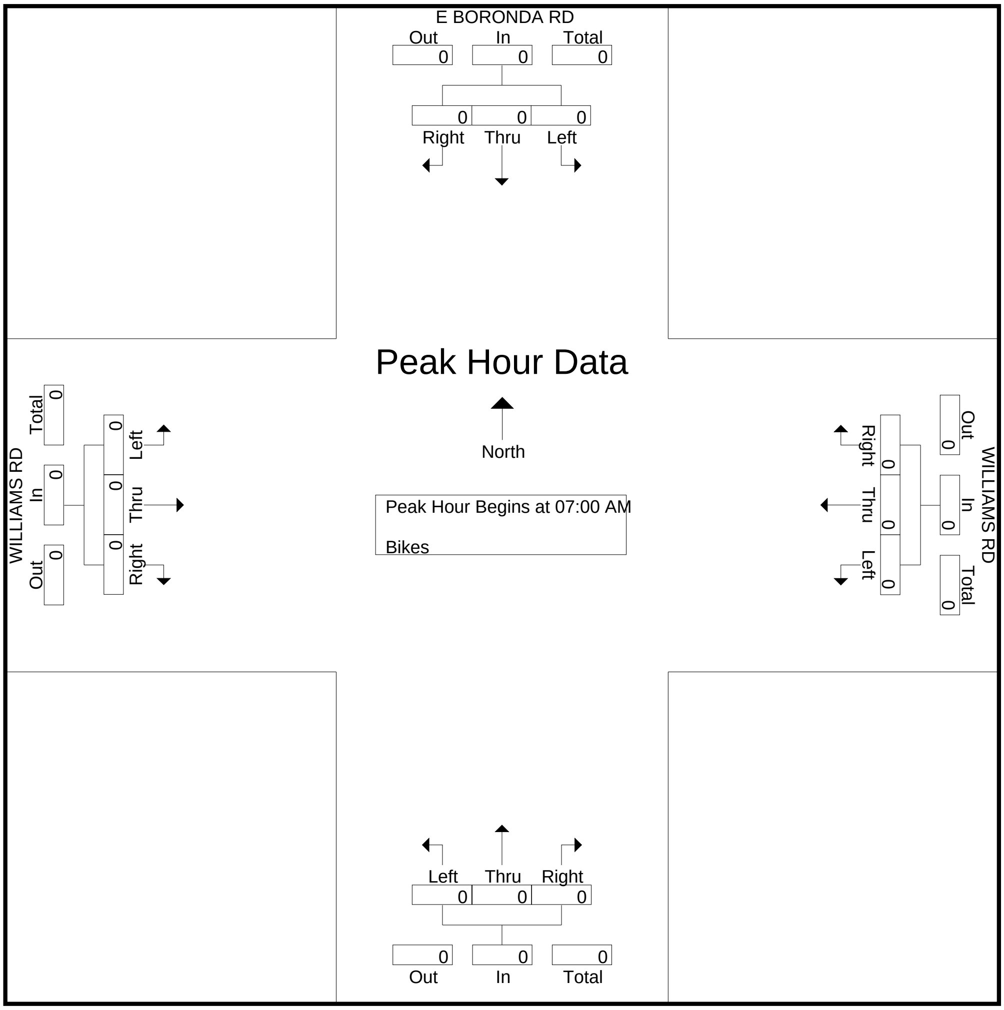
File Name : 40AM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 43AM FINAL
Site Code : 00000043
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

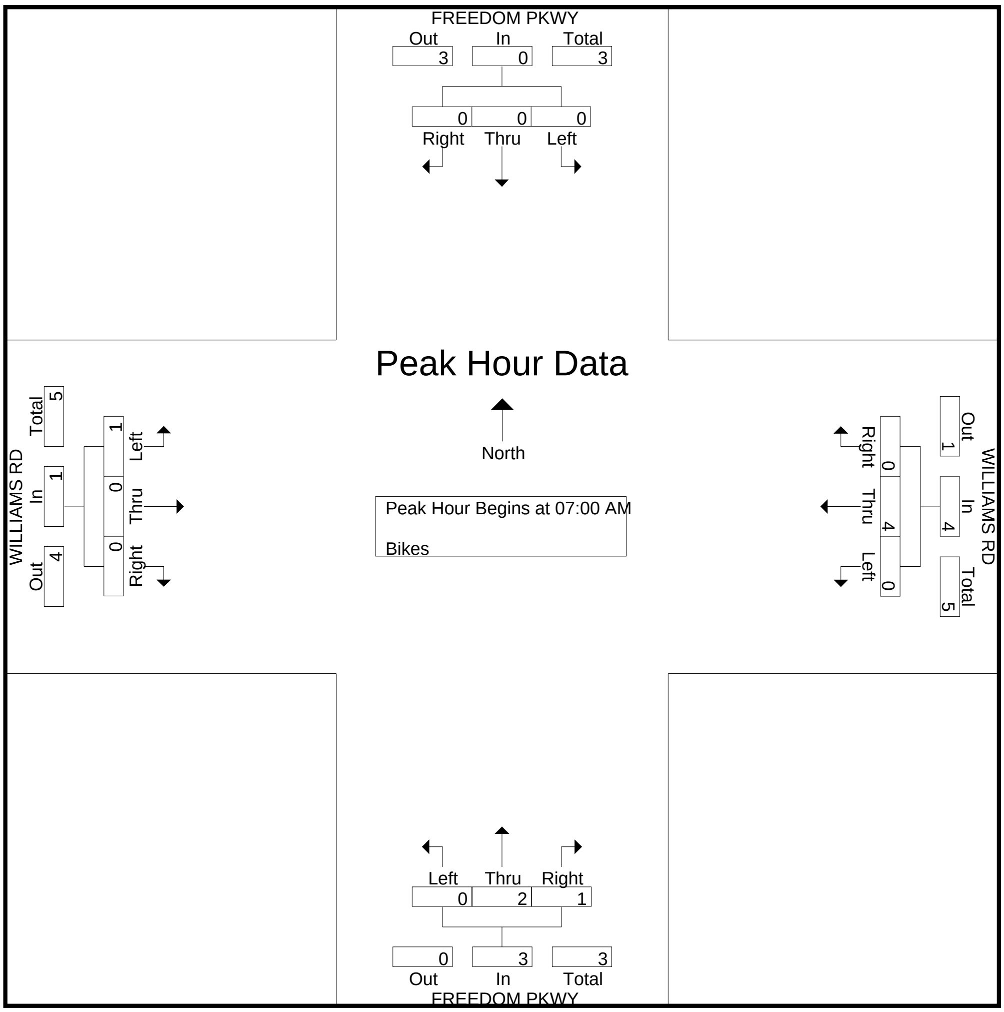
	FREEDOM PKWY Southbound					WILLIAMS RD Westbound					FREEDOM PKWY Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	1	0	1	3
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	3
Total	0	0	0	0	0	0	4	0	0	4	1	2	0	0	3	0	0	1	0	1	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	4	0	0	4	1	2	0	0	3	0	0	1	0	1	8
Apprch %	0	0	0	0		0	100	0	0		33.3	66.7	0	0		0	0	100	0		
Total %	0	0	0	0	0	0	50	0	0	50	12.5	25	0	0	37.5	0	0	12.5	0	12.5	

	FREEDOM PKWY Southbound				WILLIAMS RD Westbound				FREEDOM PKWY Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	1	0	1	**1**	0	0	**1**	0	0	**1**	**1**	**3**
07:30 AM	0	0	0	0	0	1	0	1	0	**1**	0	1	0	0	0	0	2
07:45 AM	0	0	0	0	0	**2**	0	**2**	0	1	0	1	0	0	0	0	3
Total Volume	0	0	0	0	0	4	0	4	1	2	0	3	0	0	1	1	8
% App. Total	0	0	0		0	100	0		33.3	66.7	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.250	.500	.000	.750	.000	.000	.250	.250	.667

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 43AM FINAL
Site Code : 00000043
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 44AM FINAL
Site Code : 00000044
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	BARDIN WAY Southbound					WILLIAMS RD Westbound					BARDIN RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	2	0	0	2	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	3	0	0	3	6
Total	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	4	7	0	0	11	16
Grand Total	0	0	0	0	0	0	1	0	0	1	4	1	0	0	5	4	7	0	0	11	17
Apprch %	0	0	0	0		0	100	0	0		80	20	0	0		36.4	63.6	0	0		
Total %	0	0	0	0	0	0	5.9	0	0	5.9	23.5	5.9	0	0	29.4	23.5	41.2	0	0	64.7	

	BARDIN WAY Southbound				WILLIAMS RD Westbound				BARDIN RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	**3**	3
08:15 AM	0	0	0	0	0	0	0	0	**2**	0	0	2	0	2	0	2	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
08:45 AM	0	0	0	0	0	0	0	0	2	**1**	0	**3**	0	**3**	0	3	**6**
Total Volume	0	0	0	0	0	0	0	0	4	1	0	5	4	7	0	11	16
% App. Total	0	0	0		0	0	0		80	20	0		36.4	63.6	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.500	.250	.000	.417	.333	.583	.000	.917	.667

Traffic Data Service

Campbell, CA
(408) 377-2988
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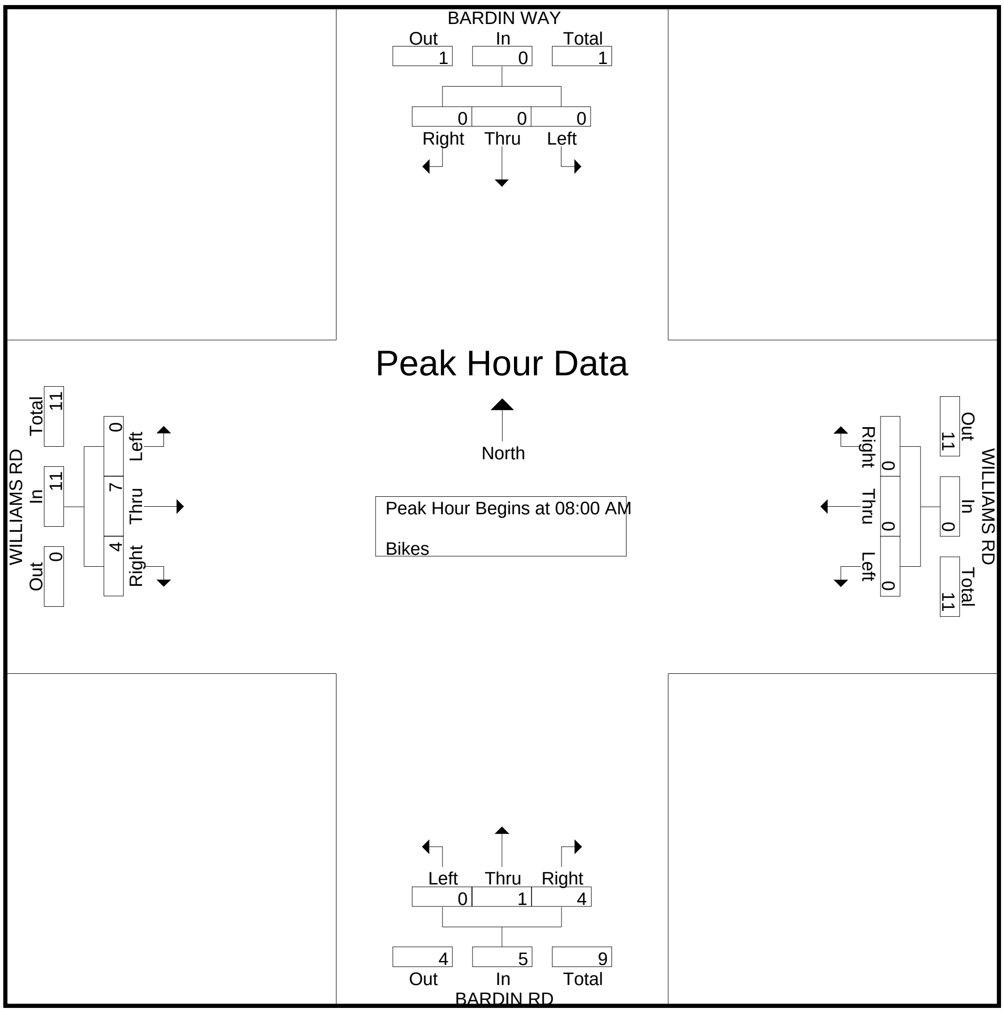
File Name : 44AM FINAL
Site Code : 00000044
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 41AM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	E MARKET ST Southbound					WILLIAMS RD Westbound					E MARKET ST Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	4
Apprch %	100	0	0	0		50	50	0	0		0	0	0	0		0	100	0	0		
Total %	25	0	0	0	25	25	25	0	0	50	0	0	0	0	0	0	25	0	0	25	

	E MARKET ST Southbound				WILLIAMS RD Westbound				E MARKET ST Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	**1**	0	0	**1**	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**2**
07:45 AM	0	0	0	0	0	**1**	0	1	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
% App. Total	100	0	0		50	50	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.250	.250	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.375

Traffic Data Service

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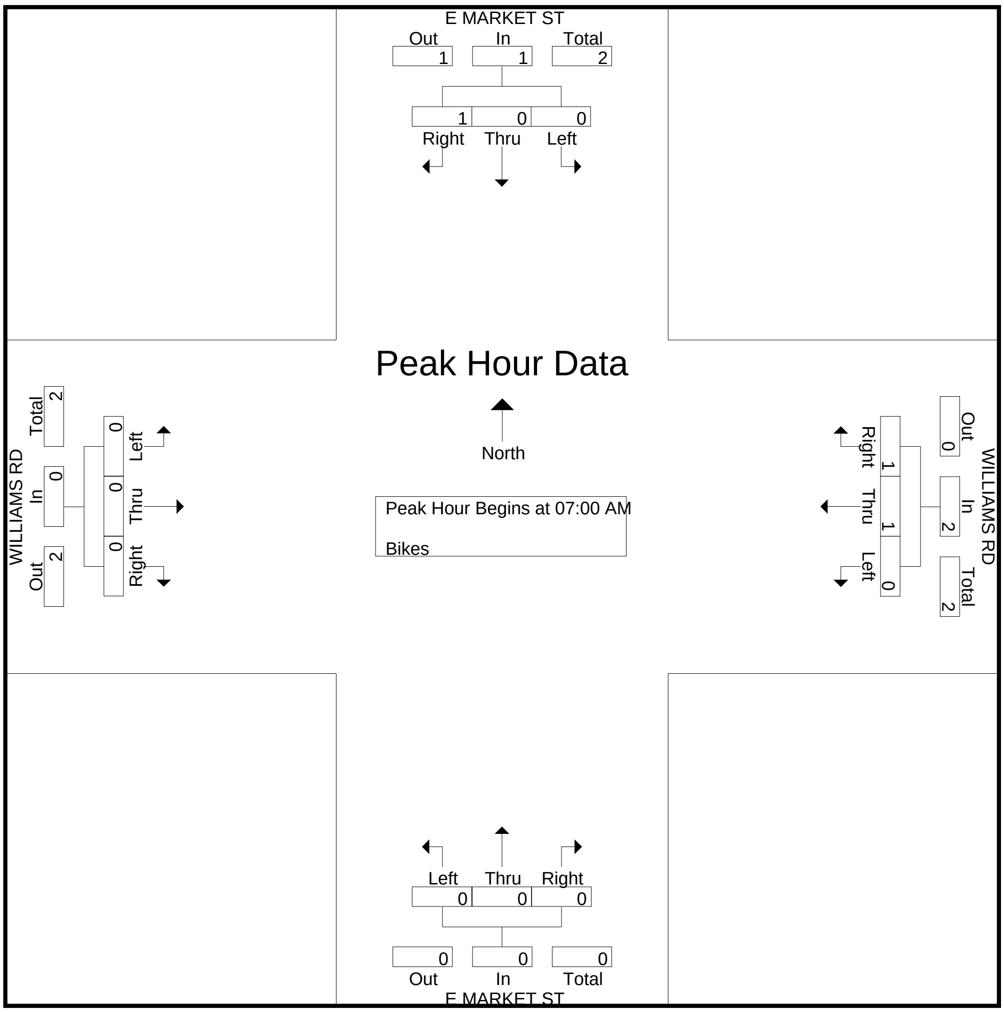
File Name : 41AM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 45AM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	WILLIAMS RD Southbound					E ALISAL ST Westbound					JOHN ST Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Grand Total	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Apprch %	100	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	50	0	0	0	50	0	0	0	0	0	50	0	0	0	50	0	0	0	0	0	

	WILLIAMS RD Southbound				E ALISAL ST Westbound				JOHN ST Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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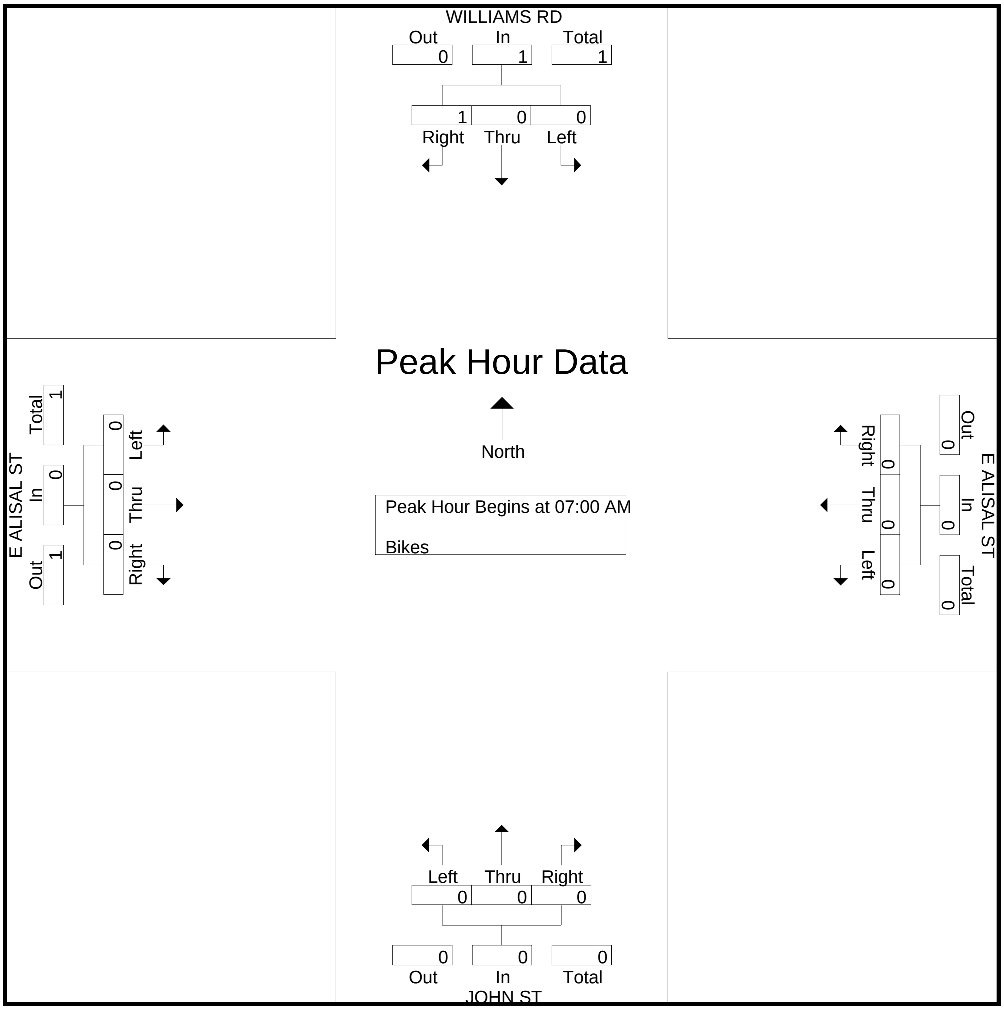
File Name : 45AM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 46AM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	S SANBORN RD Southbound					JOHN ST Westbound					S SANBORN RD Northbound					JOHN ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
07:15 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	7
Apprch %	25	75	0	0		0	0	0	0		0	0	0	0		66.7	33.3	0	0		
Total %	14.3	42.9	0	0	57.1	0	0	0	0	0	0	0	0	0	0	28.6	14.3	0	0	42.9	

	S SANBORN RD Southbound				JOHN ST Westbound				S SANBORN RD Northbound				JOHN ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**3**
07:15 AM	**1**	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	3	0	4	0	0	0	0	0	0	0	0	2	0	0	2	6
% App. Total	25	75	0		0	0	0		0	0	0		100	0	0		
PHF	.250	.375	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.500

Traffic Data Service

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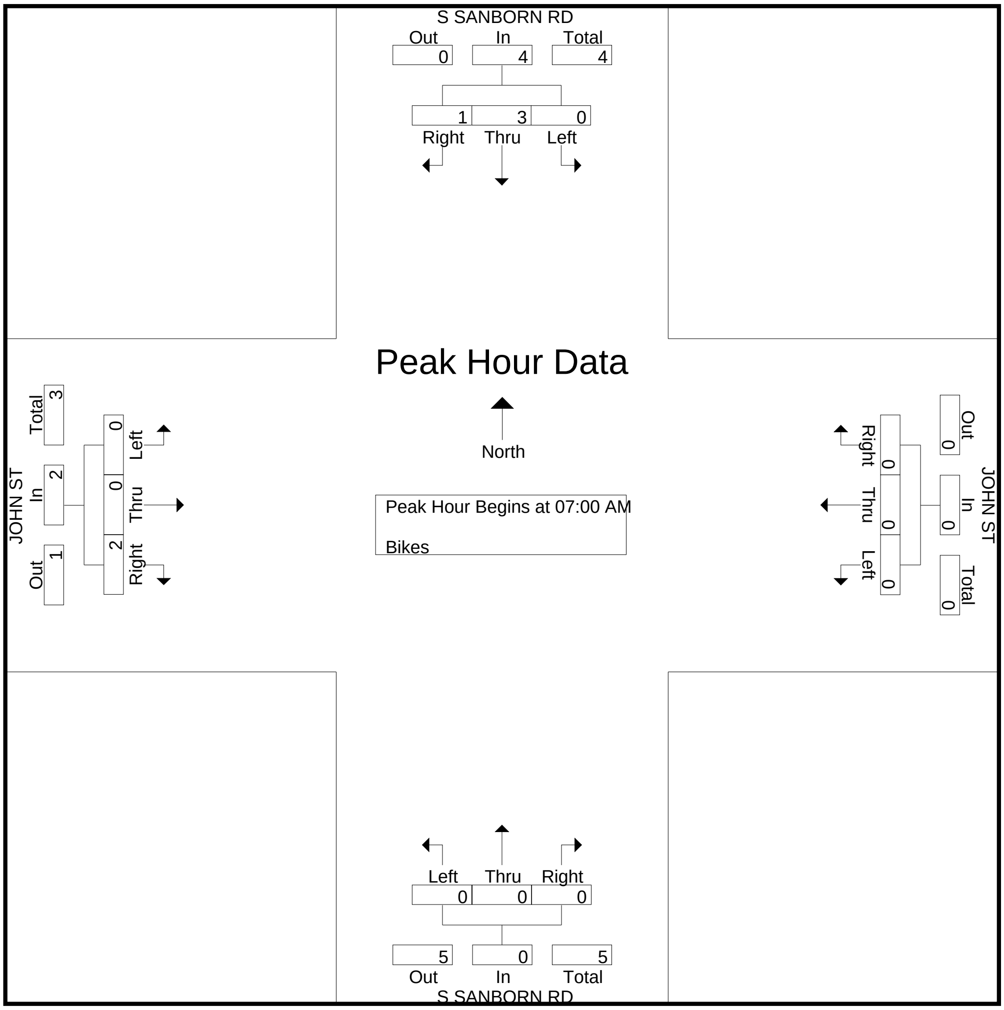
File Name : 46AM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 47AM FINAL
Site Code : 00000047
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	BARDIN RD Southbound					DRIVEWAY Westbound					ALISAL RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	BARDIN RD Southbound				DRIVEWAY Westbound				ALISAL RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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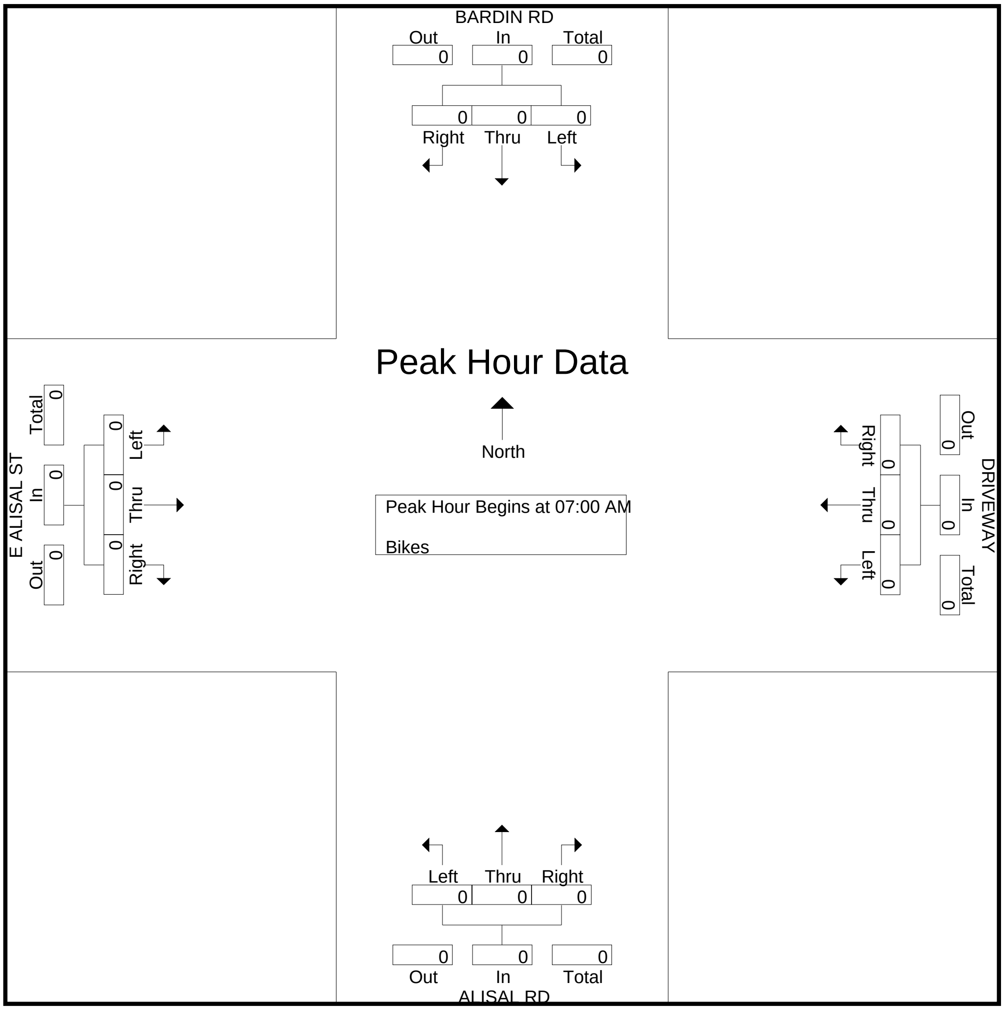
File Name : 47AM FINAL
Site Code : 00000047
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 48AM FINAL
Site Code : 00000048
Start Date : 1/14/2016

Groups Printed- Bikes

	SKYWAY BLVD Southbound					Westbound					SKYWAY BLVD Northbound					AIRPORT BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	

	SKYWAY BLVD Southbound				Westbound				SKYWAY BLVD Northbound				AIRPORT BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Traffic Data Service

Campbell, CA
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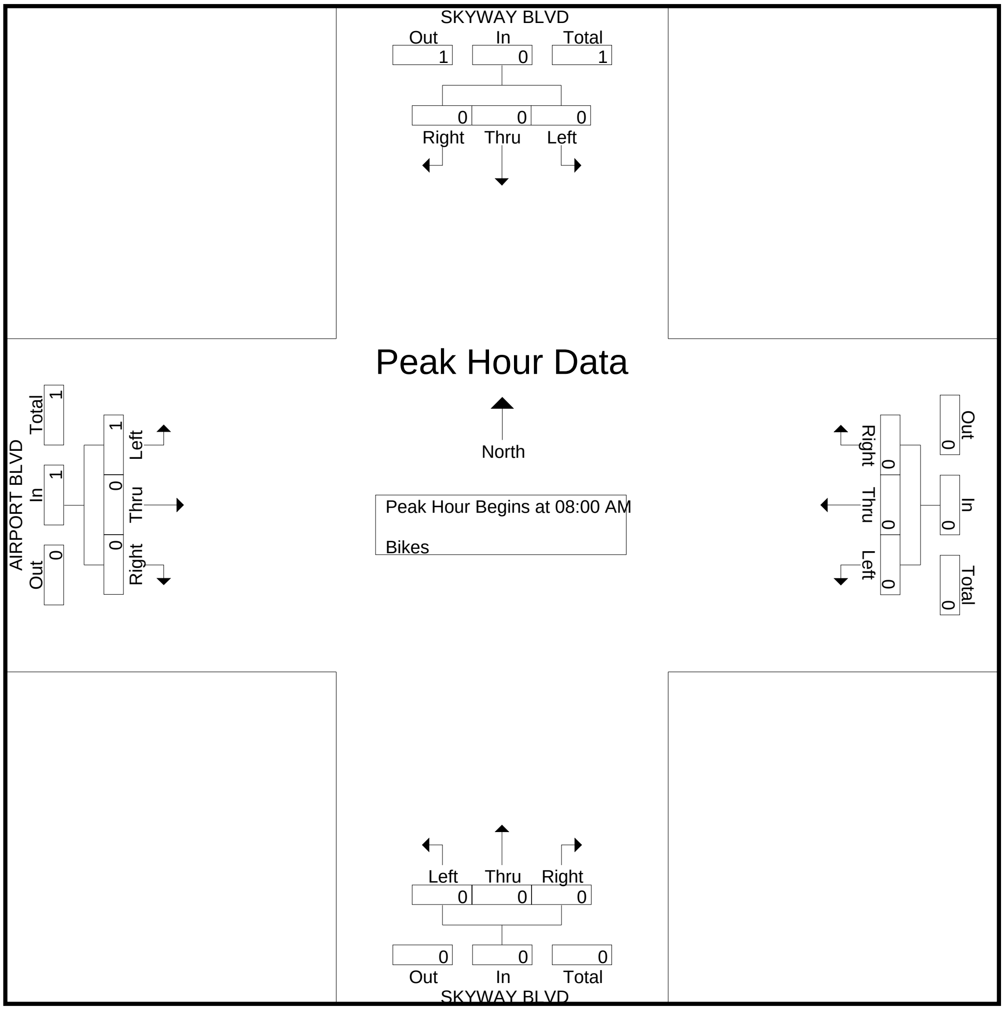
File Name : 48AM FINAL
Site Code : 00000048
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 49AM FINAL
Site Code : 00000049
Start Date : 11/18/2015

Groups Printed- Bikes

	N SANBORN RD Southbound					E ALISAL ST Westbound					S SANBORN RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	N SANBORN RD Southbound				E ALISAL ST Westbound				S SANBORN RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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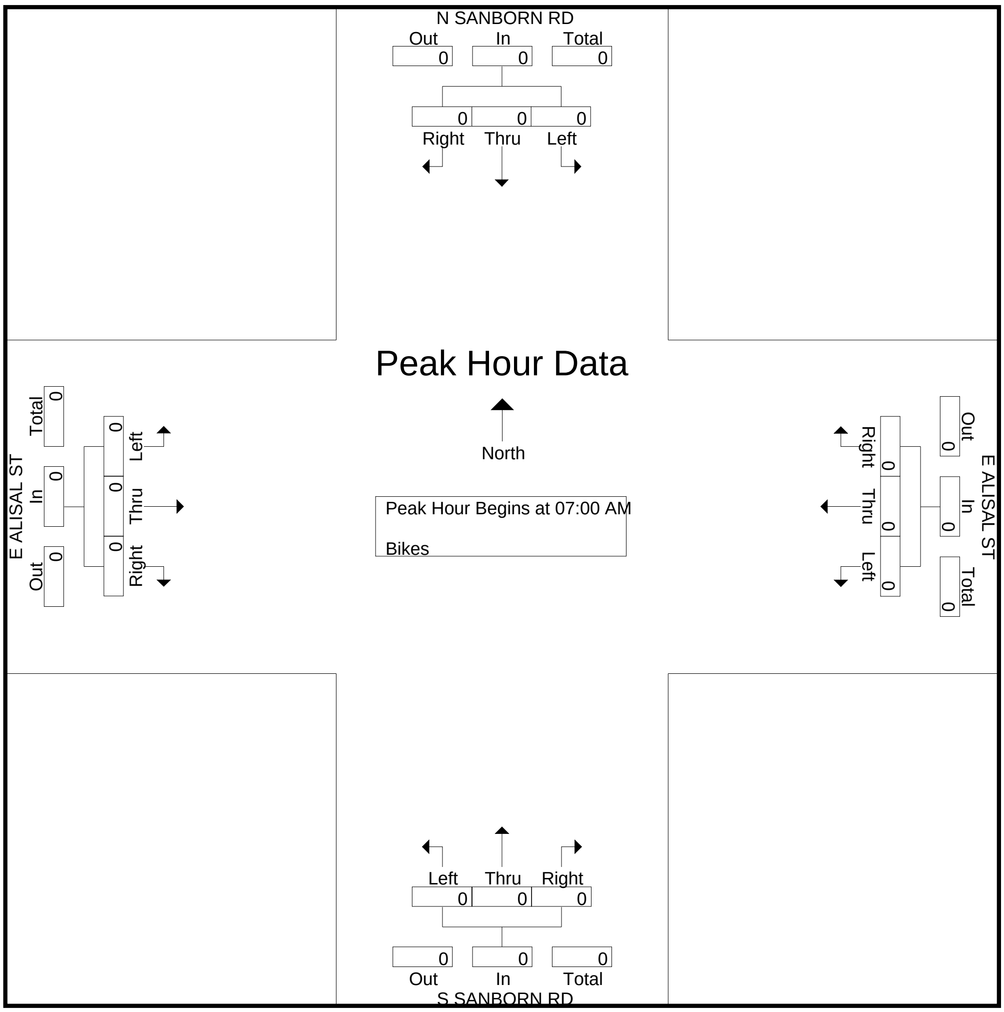
File Name : 49AM FINAL
Site Code : 00000049
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 50AM FINAL
Site Code : 00000050
Start Date : 1/14/2016

Groups Printed- Bikes

	ADAMS ST Southbound					W LAUREL DR Westbound					Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	ADAMS ST Southbound				W LAUREL DR Westbound				Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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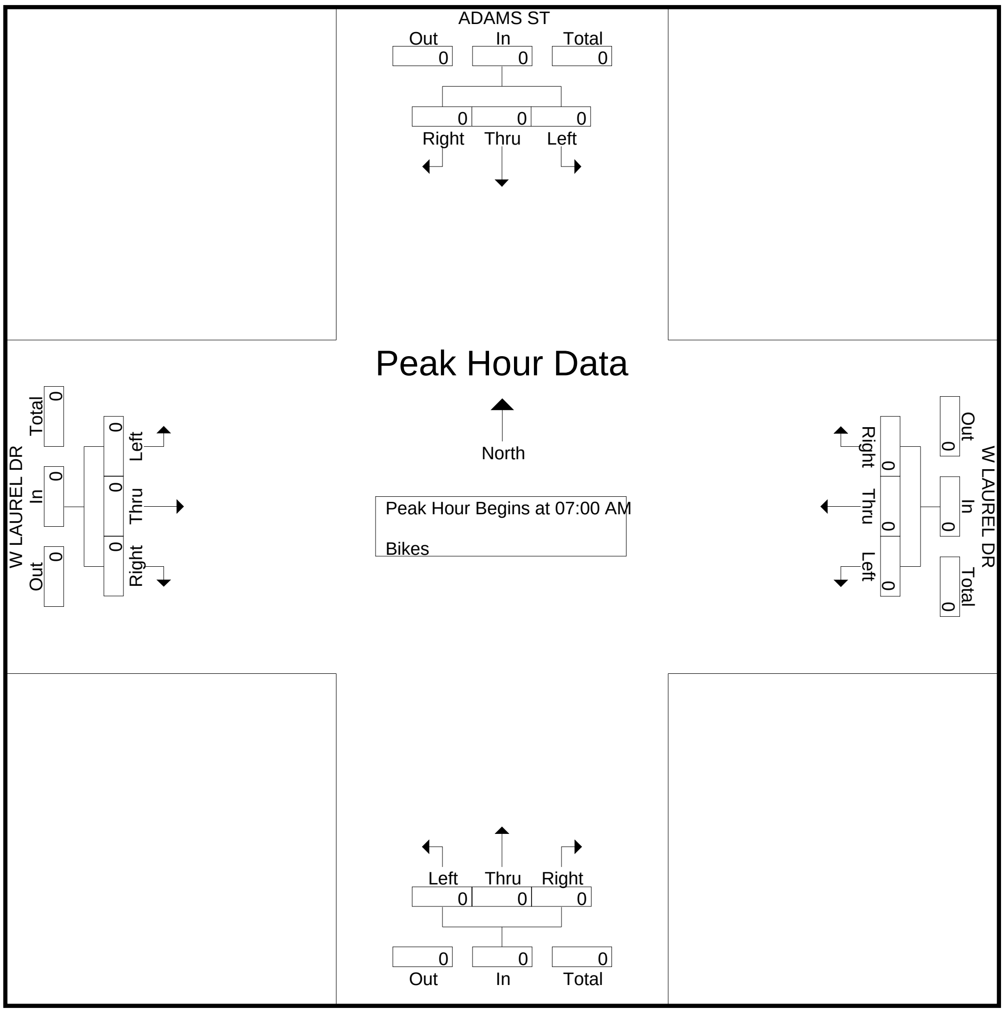
File Name : 50AM FINAL
Site Code : 00000050
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 51AM FINAL
Site Code : 00000051
Start Date : 1/14/2016

Groups Printed- Bikes

	N DAVIS RD Southbound					W LAUREL DR Westbound					N DAVIS RD Northbound					CALLE DEL ADOBE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	N DAVIS RD Southbound				W LAUREL DR Westbound				N DAVIS RD Northbound				CALLE DEL ADOBE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
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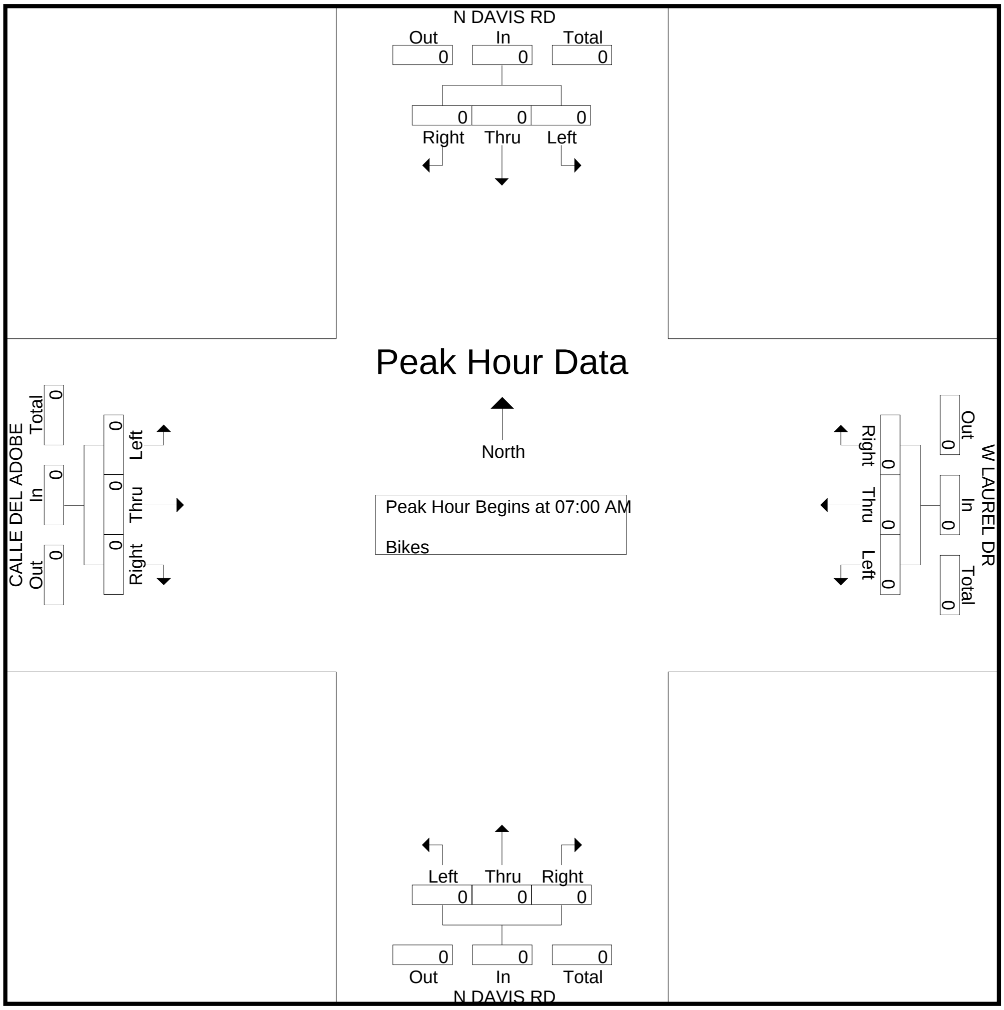
File Name : 51AM FINAL
Site Code : 00000051
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 52AM FINAL
Site Code : 00000052
Start Date : 1/14/2016

Groups Printed- Bikes

	SHERWOOD DR Southbound					E MARKET ST Westbound					E FRONT ST Northbound					MARKET WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	SHERWOOD DR Southbound				E MARKET ST Westbound				E FRONT ST Northbound				MARKET WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
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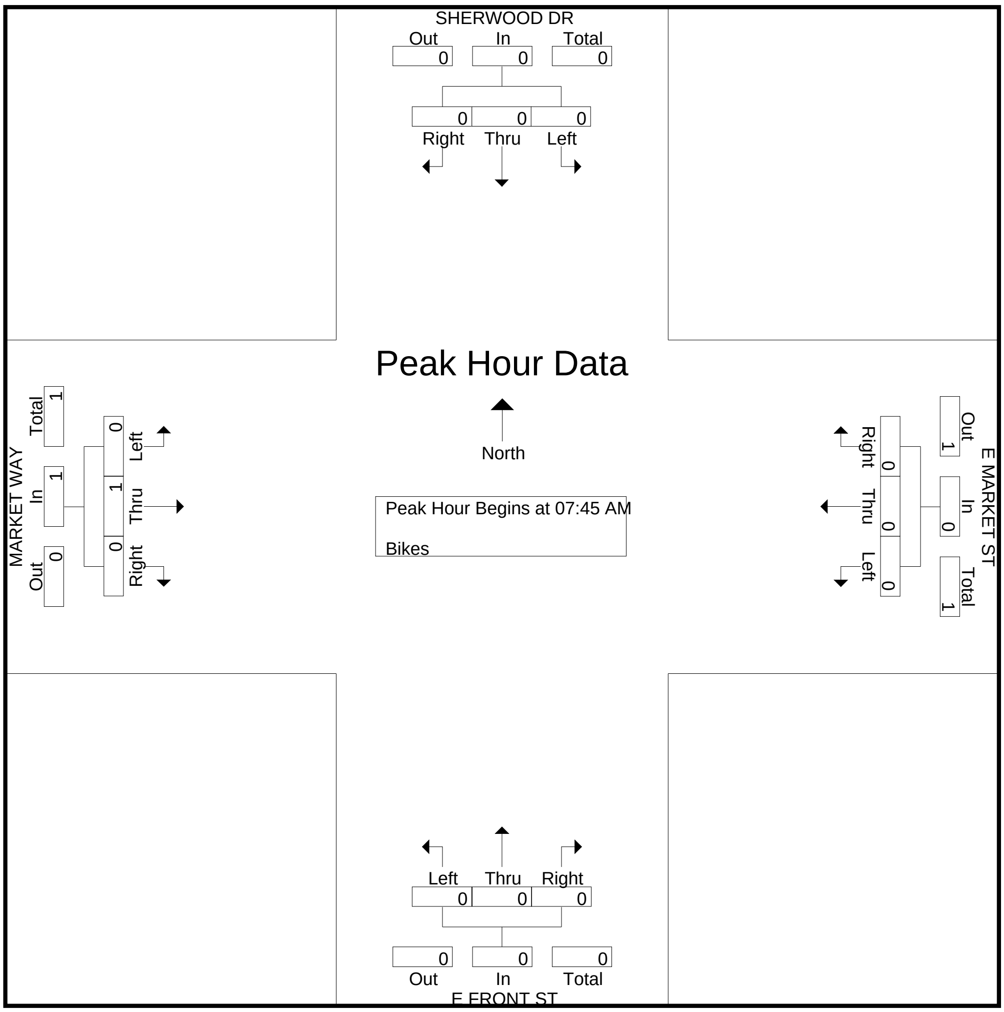
File Name : 52AM FINAL
Site Code : 00000052
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 53AM FINAL
Site Code : 00000053
Start Date : 1/14/2016

Groups Printed- Bikes

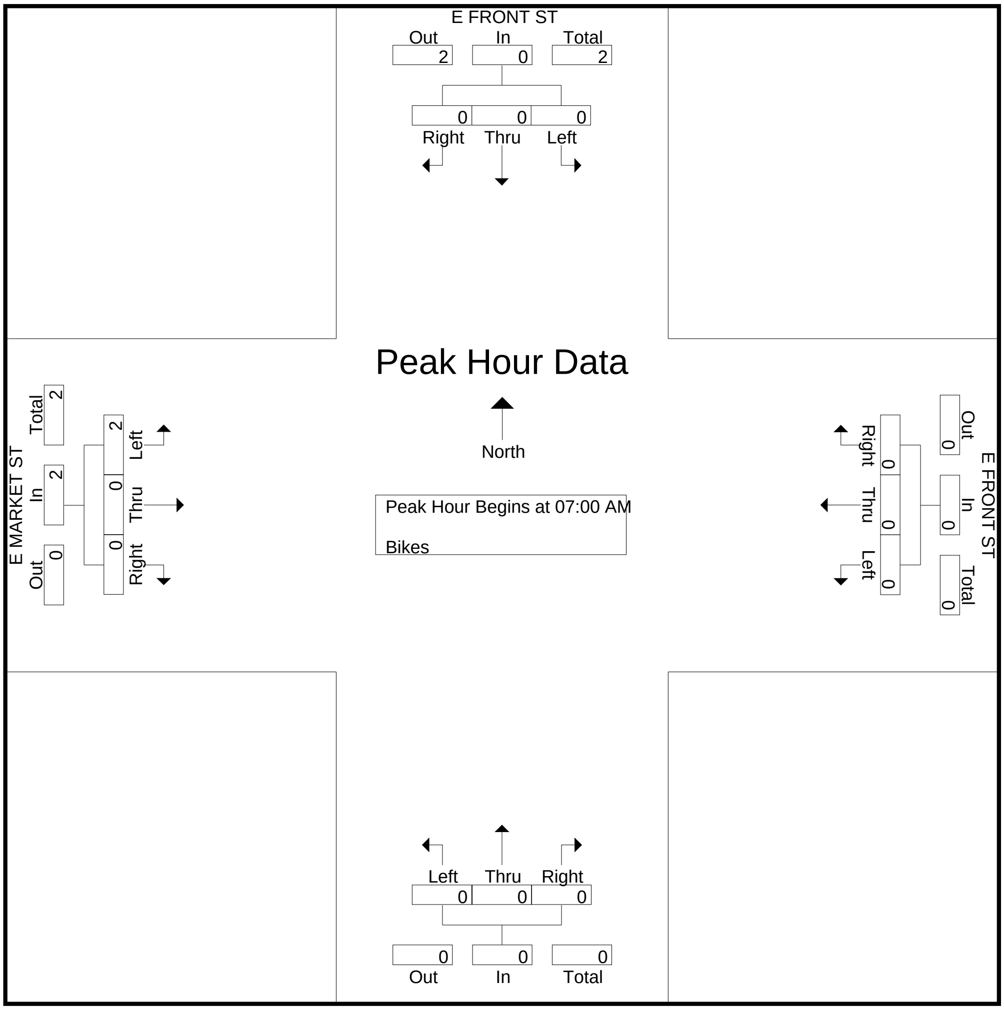
	E FRONT ST Southbound					E FRONT ST Westbound					Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	

	E FRONT ST Southbound				E FRONT ST Westbound				Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	**2**	**2**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 53AM FINAL
Site Code : 00000053
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 54AM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

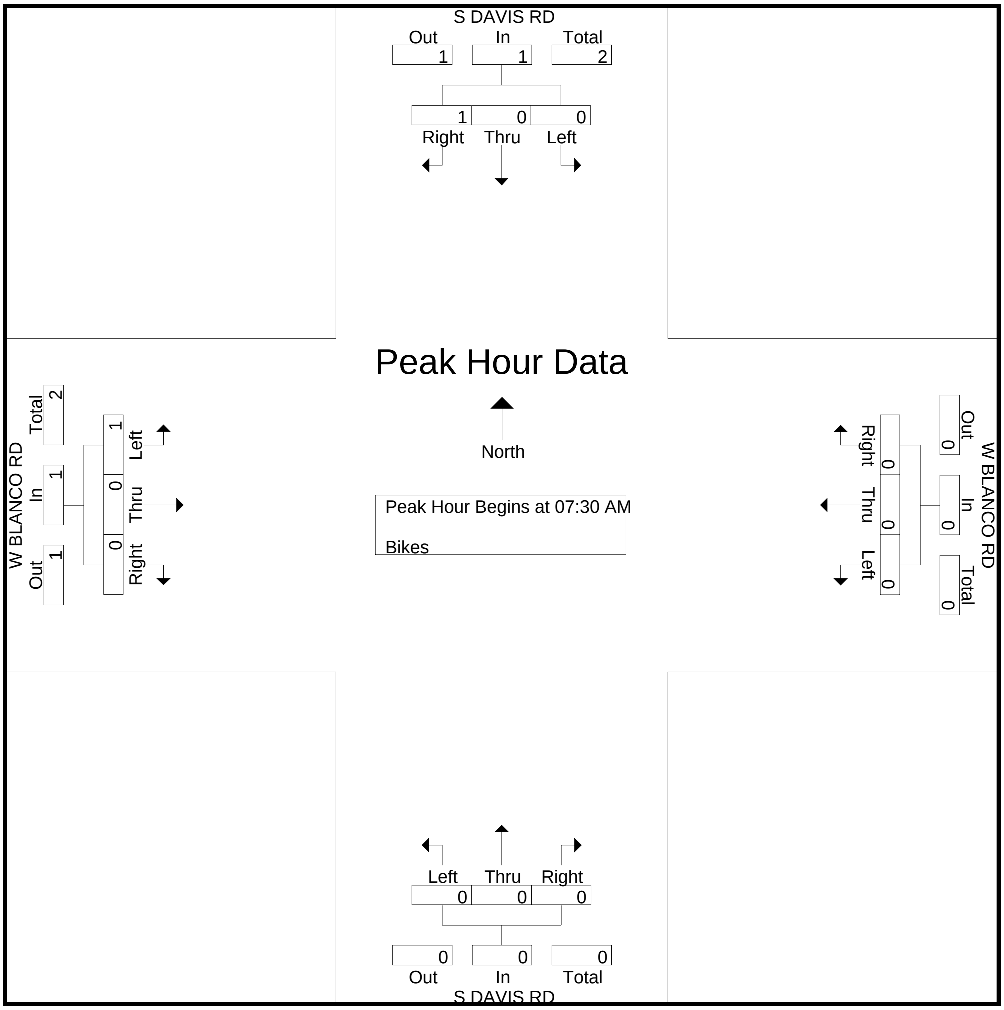
	S DAVIS RD Southbound					W BLANCO RD Westbound					S DAVIS RD Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Grand Total	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Apprch %	100	0	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	66.7	0	0	0	66.7	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0	33.3	

	S DAVIS RD Southbound				W BLANCO RD Westbound				S DAVIS RD Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
% App. Total	100	0	0		0	0	0		0	0	0		0	0	100		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 54AM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 55AM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 1

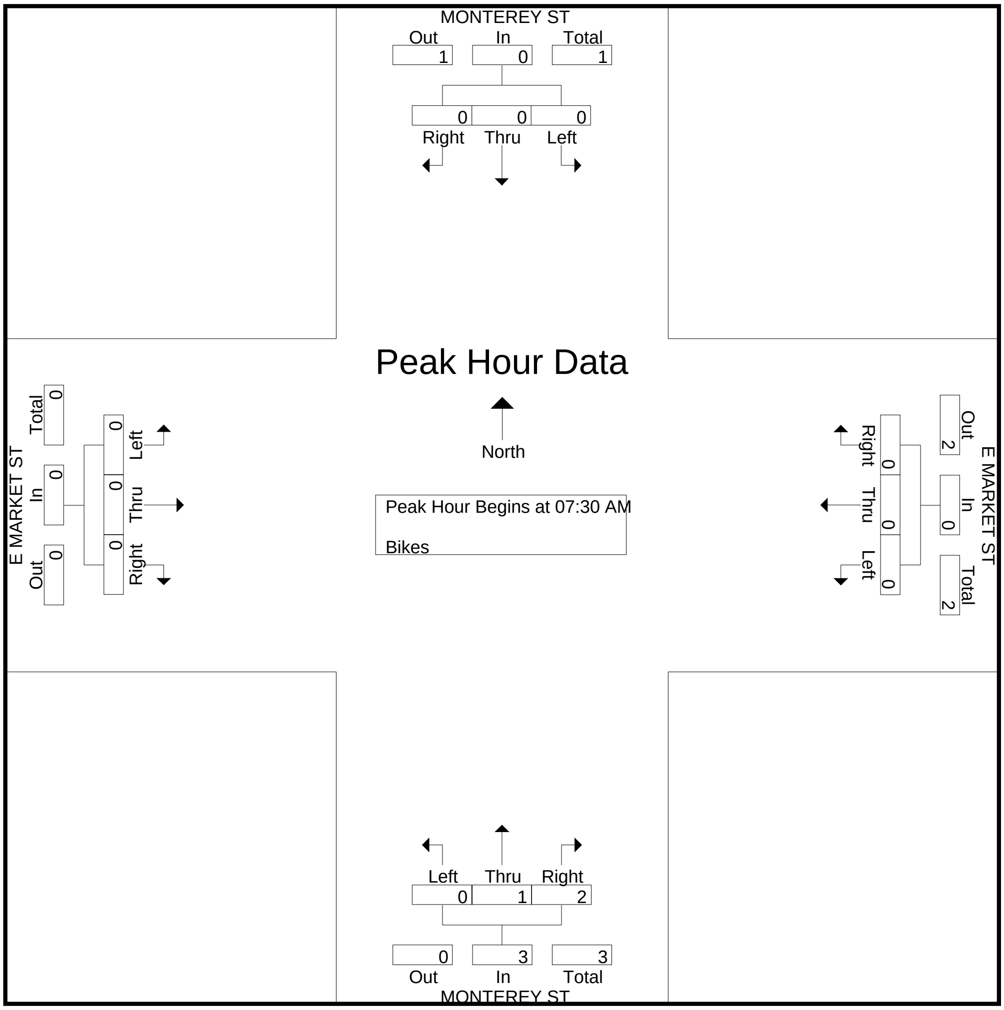
Groups Printed- Bikes

	MONTEREY ST Southbound					E MARKET ST Westbound					MONTEREY ST Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	4
Apprch %	0	0	0	0		0	0	0	0		50	50	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	50	50	0	0	100	0	0	0	0	0	

	MONTEREY ST Southbound				E MARKET ST Westbound				MONTEREY ST Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	**1**	**1**	0	**2**	0	0	0	0	**2**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	3
% App. Total	0	0	0		0	0	0		66.7	33.3	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.500	.250	.000	.375	.000	.000	.000	.000	.375

Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 55AM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 56AM FINAL
Site Code : 00000056
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E MARKET ST Westbound					SALINAS ST Northbound					W MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Apprch %	33.3	33.3	33.3	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	33.3	33.3	33.3	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	N MAIN ST Southbound				E MARKET ST Westbound				SALINAS ST Northbound				W MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	50	50		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

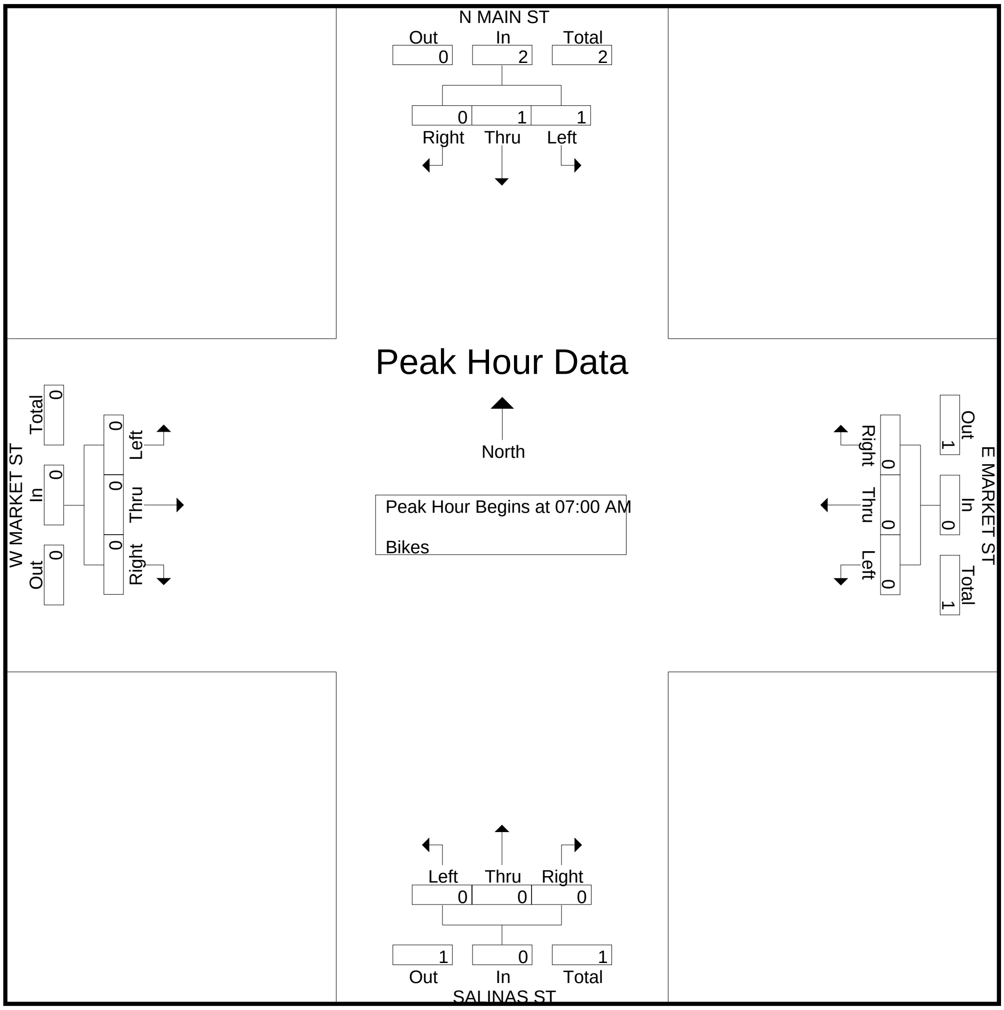
Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 56AM FINAL
Site Code : 00000056
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 57AM FINAL
Site Code : 00000057
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	SR-68 Southbound					E BLANCO RD Westbound					SR-68 Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	SR-68 Southbound				E BLANCO RD Westbound				SR-68 Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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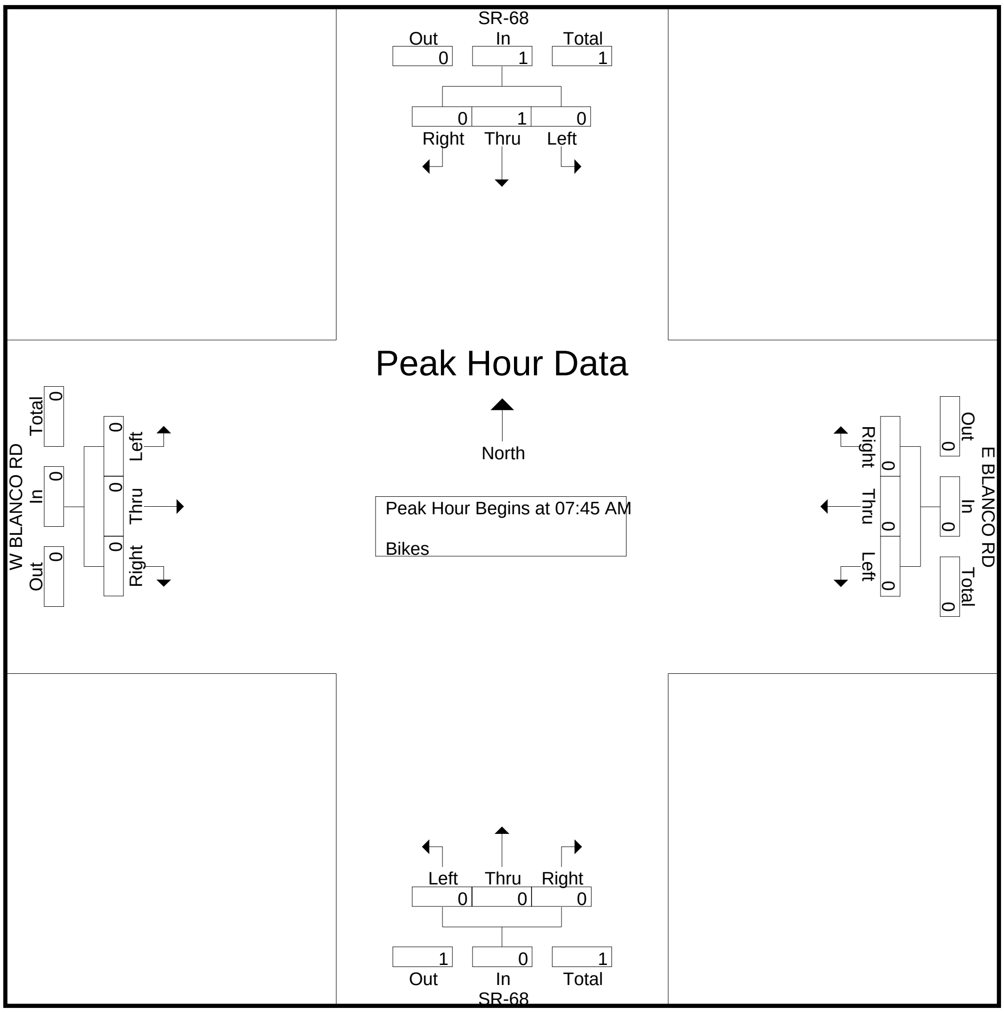
File Name : 57AM FINAL
Site Code : 00000057
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

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File Name : 1PM FINAL
Site Code : 00000001
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	US-101 SB OFF-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 SB ON-RAMP Northbound					ECHO VALLEY RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 SB OFF-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 SB ON-RAMP Northbound				ECHO VALLEY RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 1PM FINAL
Site Code : 00000001
Start Date : 11/19/2015
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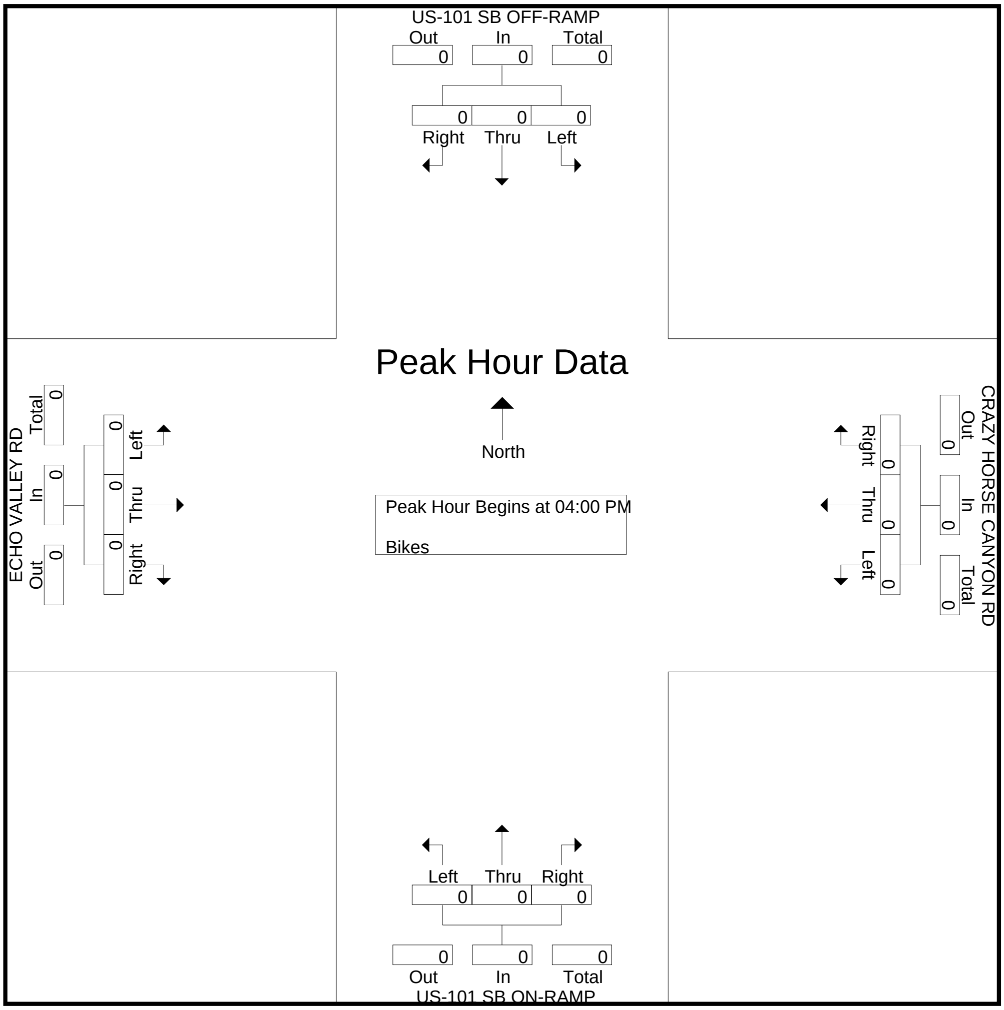

Traffic Data Service

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File Name : 2PM FINAL
Site Code : 00000002
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	US-101 NB ON-RAMP Southbound					CRAZY HORSE CANYON RD Westbound					US-101 NB OFF-RAMP Northbound					CRAZY HORSE CANYON RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB ON-RAMP Southbound				CRAZY HORSE CANYON RD Westbound				US-101 NB OFF-RAMP Northbound				CRAZY HORSE CANYON RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 2PM FINAL
Site Code : 00000002
Start Date : 11/19/2015
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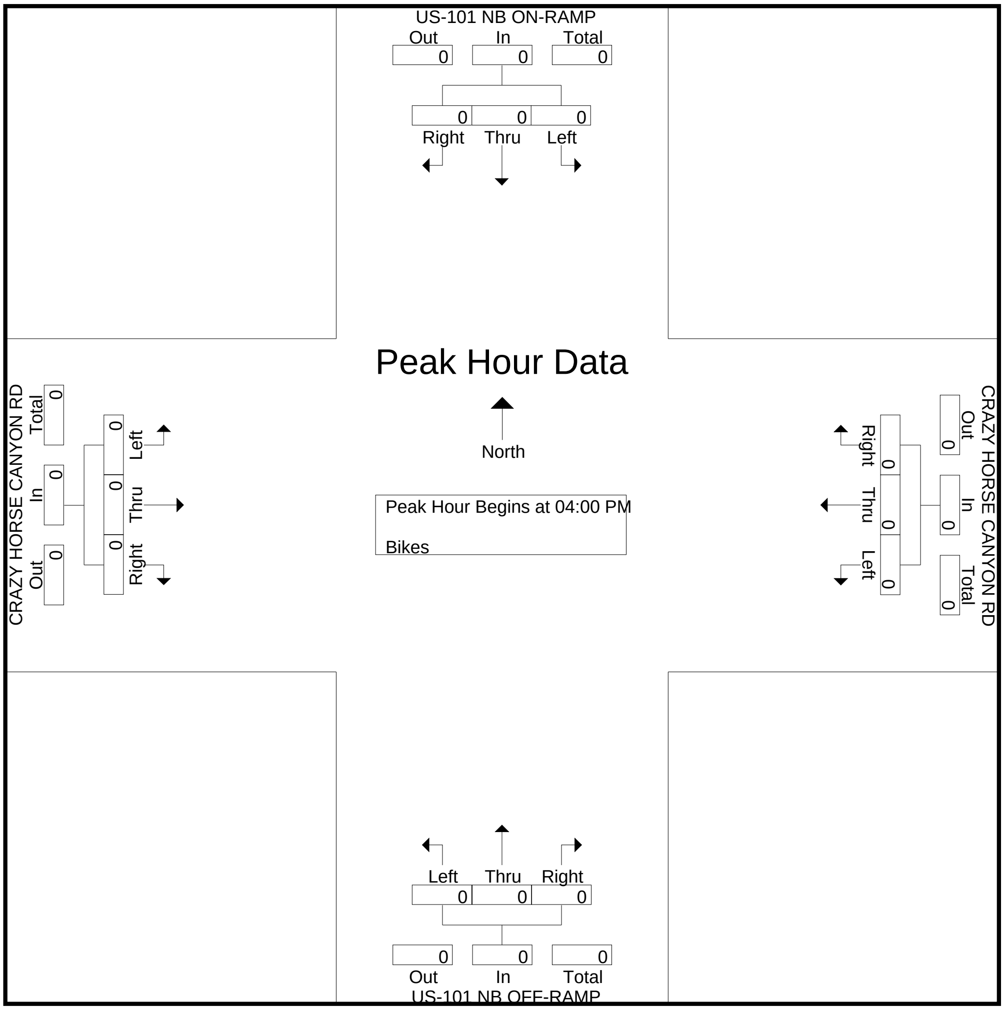

Traffic Data Service

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File Name : 3PM FINAL
Site Code : 00000003
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	US-101 NB ON-RAMP Southbound					SALA RD Westbound					US-101 NB OFF-RAMP Northbound					US-101 SB RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB ON-RAMP Southbound				SALA RD Westbound				US-101 NB OFF-RAMP Northbound				US-101 SB RAMPS Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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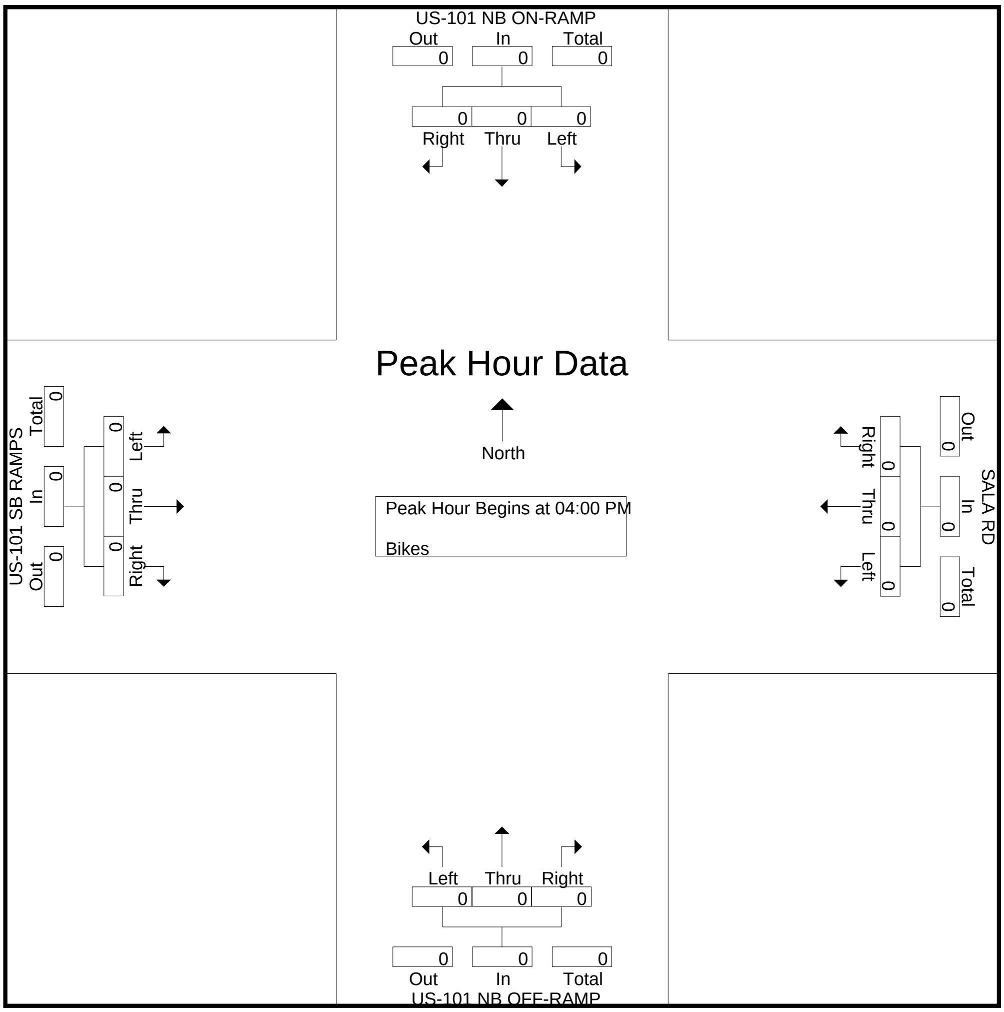
File Name : 3PM FINAL
Site Code : 00000003
Start Date : 11/17/2015
Page No : 2



Traffic Data Service
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File Name : 4PM FINAL
Site Code : 00000004
Start Date : 11/17/2015

Groups Printed- Bikes

	HARRISON RD Southbound					Westbound					HARRISON RD Northbound					SALA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	HARRISON RD Southbound				Westbound				HARRISON RD Northbound				SALA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 4PM FINAL
Site Code : 00000004
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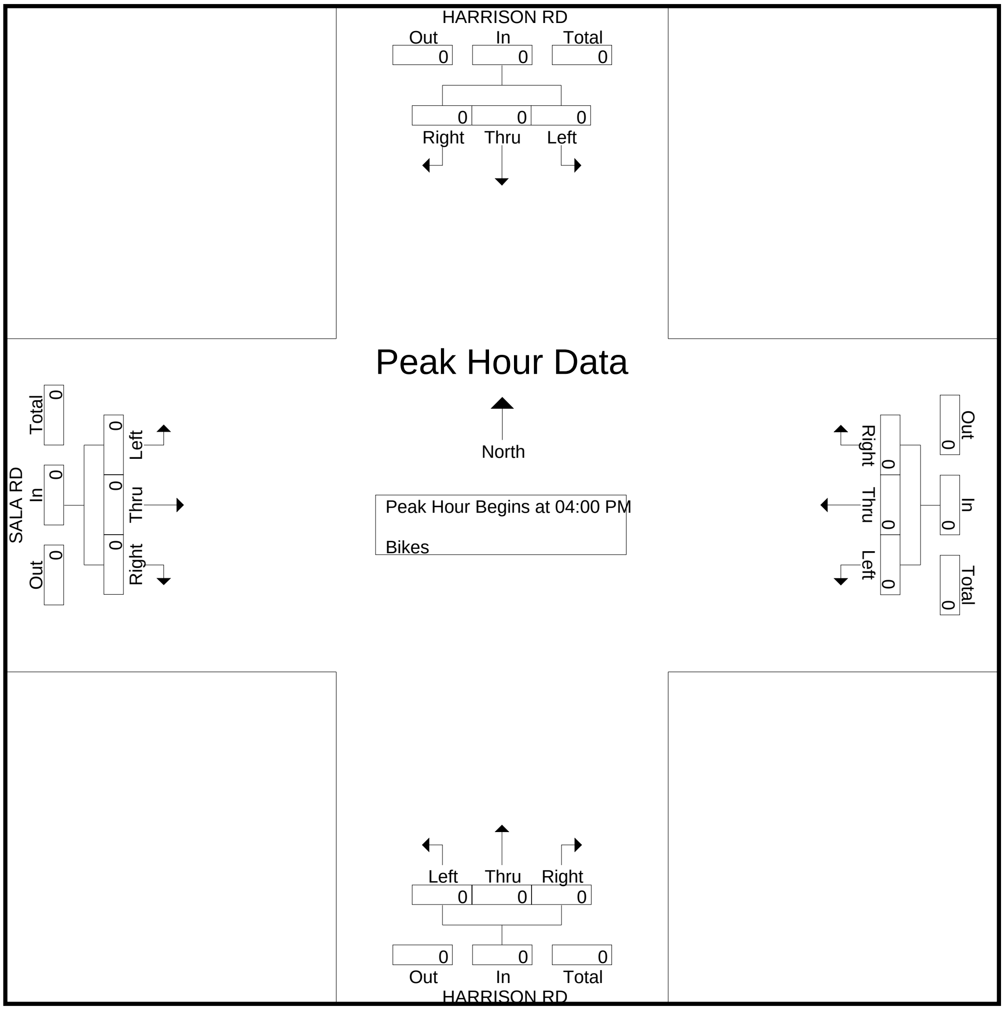

Traffic Data Service

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File Name : 5PM FINAL
Site Code : 00000005
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	CRAZY HORSE CANYON RD Southbound					SAN JUAN GRADE RD Westbound					CRAZY HORSE CANYON RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	CRAZY HORSE CANYON RD Southbound				SAN JUAN GRADE RD Westbound				CRAZY HORSE CANYON RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 5PM FINAL
Site Code : 00000005
Start Date : 11/19/2015
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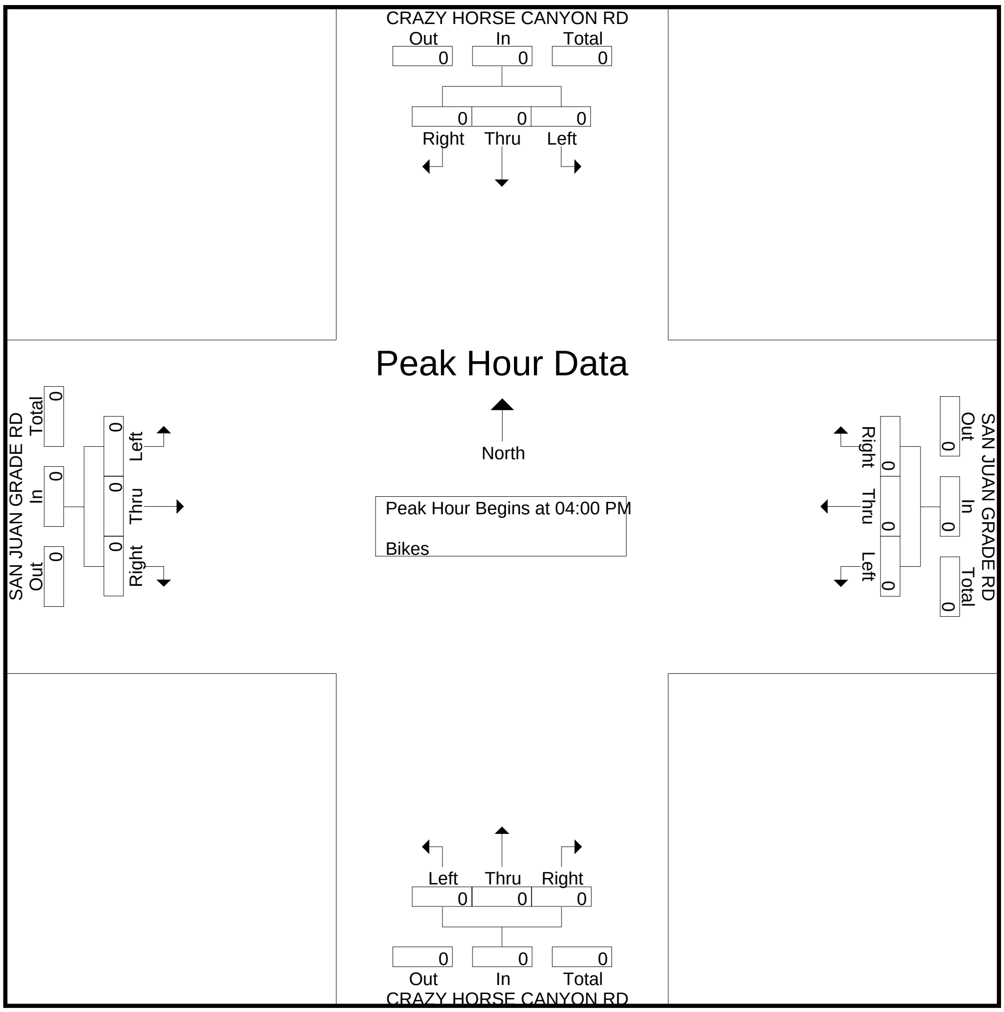

Traffic Data Service

Campbell, CA

(408) 377-2988

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File Name : 6PM FINAL
Site Code : 00000006
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	HERBERT RD Southbound					SAN JUAN GRADE RD Westbound					HERBERT RD Northbound					SAN JUAN GRADE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	0	1	0	0	1	4
04:15 PM	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	6	0	6	3	0	0	0	3	0	1	0	0	1	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	6	0	6	3	0	0	0	3	0	1	0	0	1	10
Apprch %	0	0	0	0		0	0	100	0		100	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	60	0	60	30	0	0	0	30	0	10	0	0	10	

	HERBERT RD Southbound				SAN JUAN GRADE RD Westbound				HERBERT RD Northbound				SAN JUAN GRADE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	**2**	**2**	1	0	0	1	0	**1**	0	**1**	**4**
04:15 PM	0	0	0	0	0	0	1	1	**2**	0	0	**2**	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	6	6	3	0	0	3	0	1	0	1	10
% App. Total	0	0	0		0	0	100		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.750	.750	.375	.000	.000	.375	.000	.250	.000	.250	.625

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File Name : 6PM FINAL
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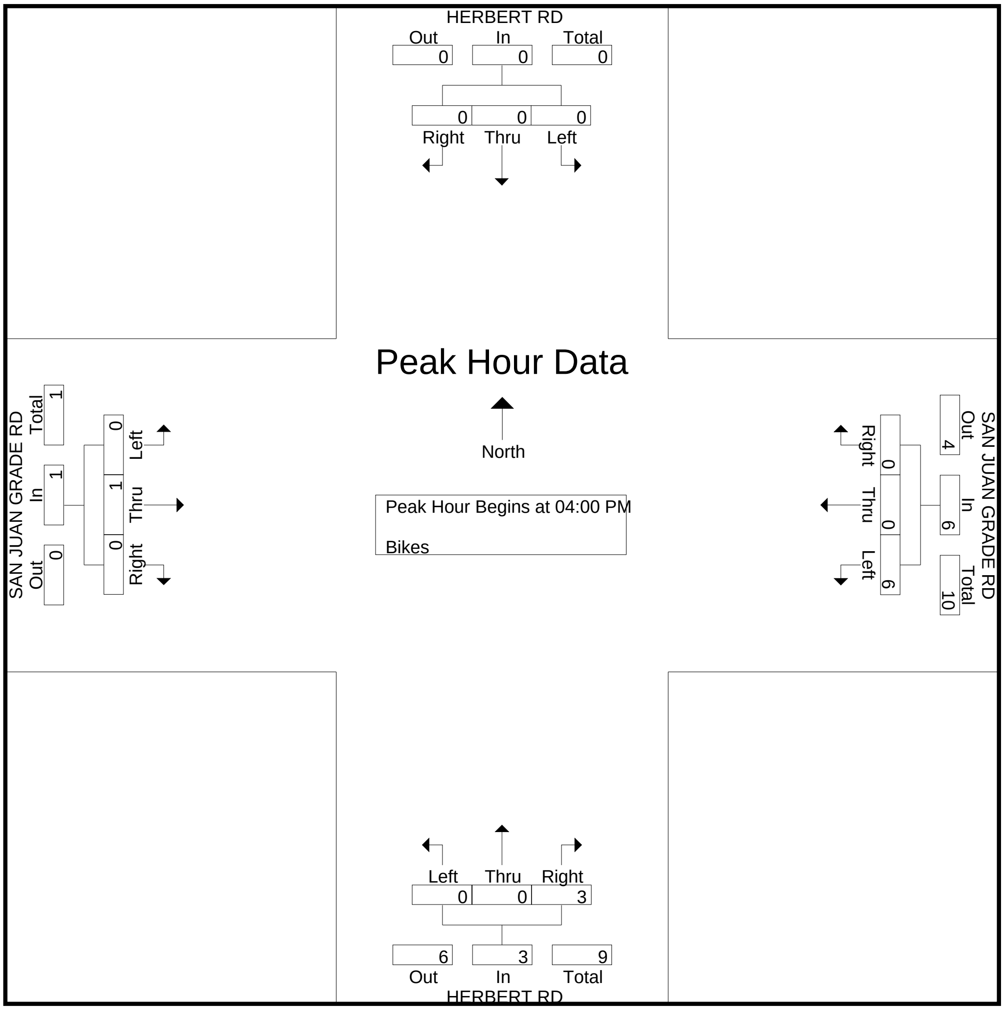

Traffic Data Service

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File Name : 7PM FINAL
Site Code : 00000007
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	HERBERT RD Southbound					OLD STAGE RD Westbound					OLD STAGE RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	HERBERT RD Southbound				OLD STAGE RD Westbound				OLD STAGE RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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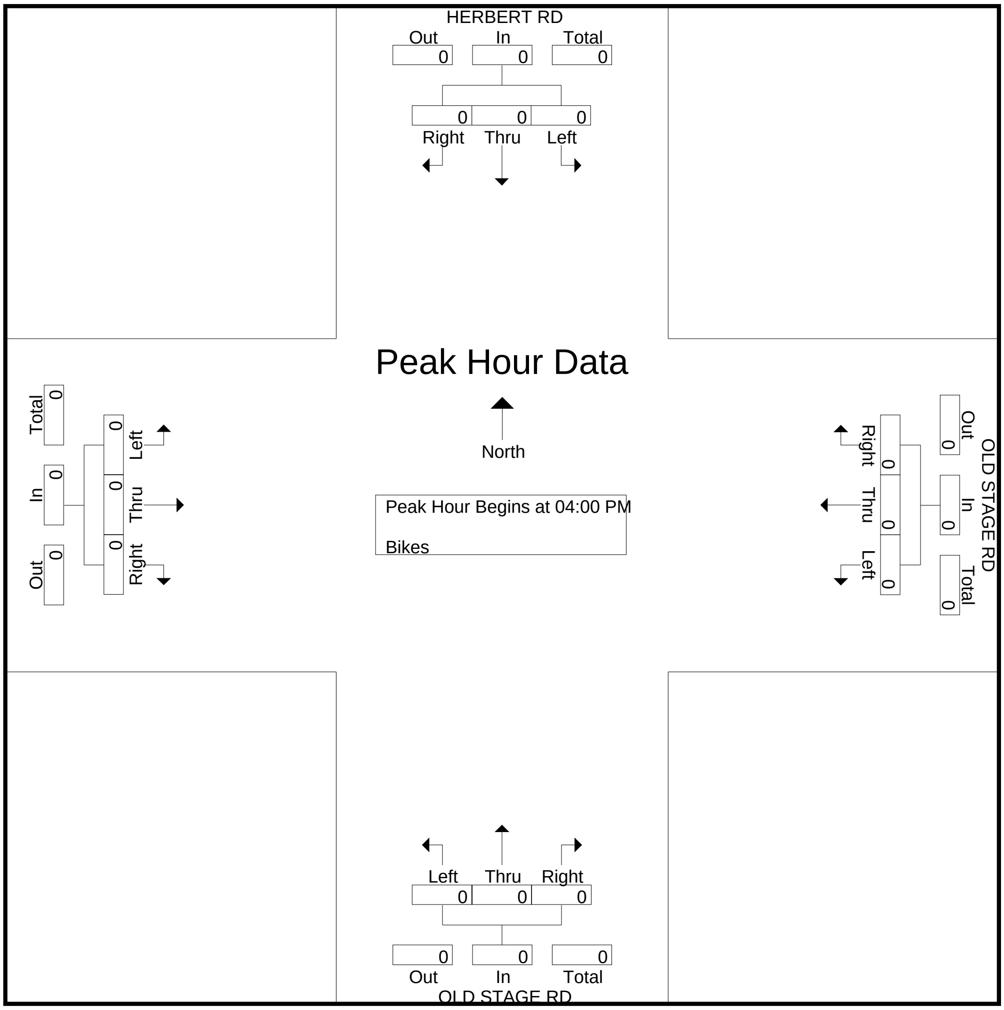
File Name : 7PM FINAL
Site Code : 00000007
Start Date : 11/17/2015



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File Name : 8PM FINAL
Site Code : 00000008
Start Date : 11/17/2015
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Groups Printed- Bikes

	HARRISON RD Southbound					RUSSELL RD Westbound					N MAIN ST Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	HARRISON RD Southbound				RUSSELL RD Westbound				N MAIN ST Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 8PM FINAL
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Start Date : 11/17/2015
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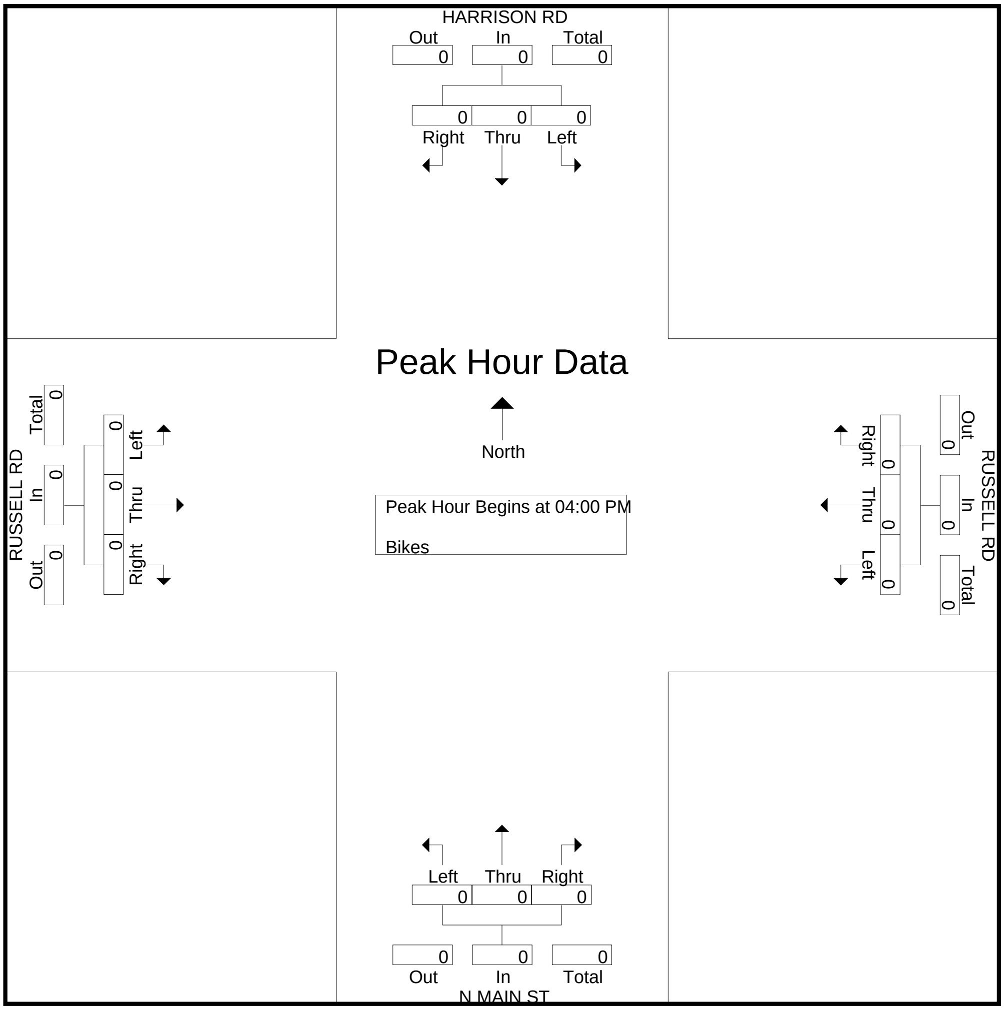

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File Name : 9PM FINAL
Site Code : 00000009
Start Date : 11/17/2015
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Groups Printed- Bikes

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	VAN BUREN AVE Southbound				RUSSELL RD Westbound				VAN BUREN AVE Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

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File Name : 9PM FINAL
Site Code : 00000009
Start Date : 11/17/2015
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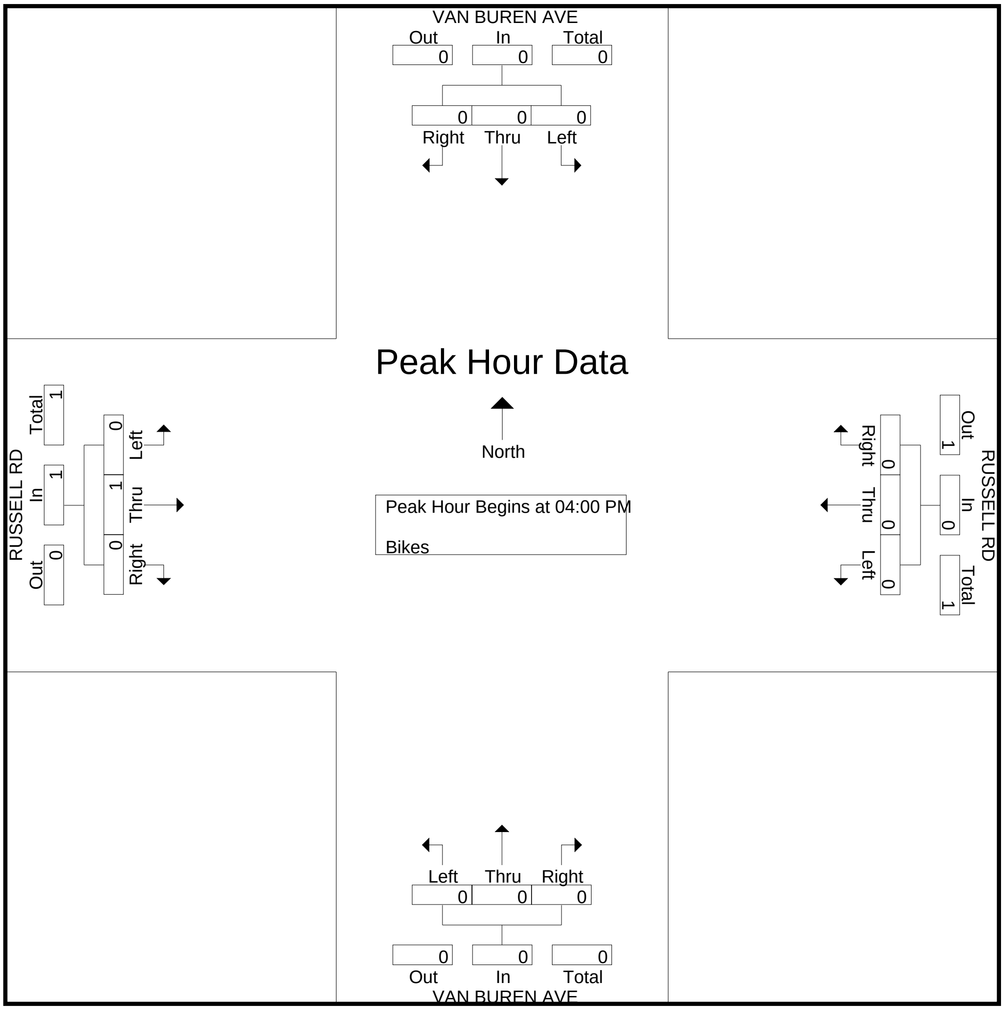

Traffic Data Service

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File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/17/2015
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Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					ROGGE RD Westbound					SAN JUAN GRADE RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	50	0	0	50	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	

	SAN JUAN GRADE RD Southbound				ROGGE RD Westbound				SAN JUAN GRADE RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.500

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File Name : 10PM FINAL
Site Code : 00000010
Start Date : 11/17/2015
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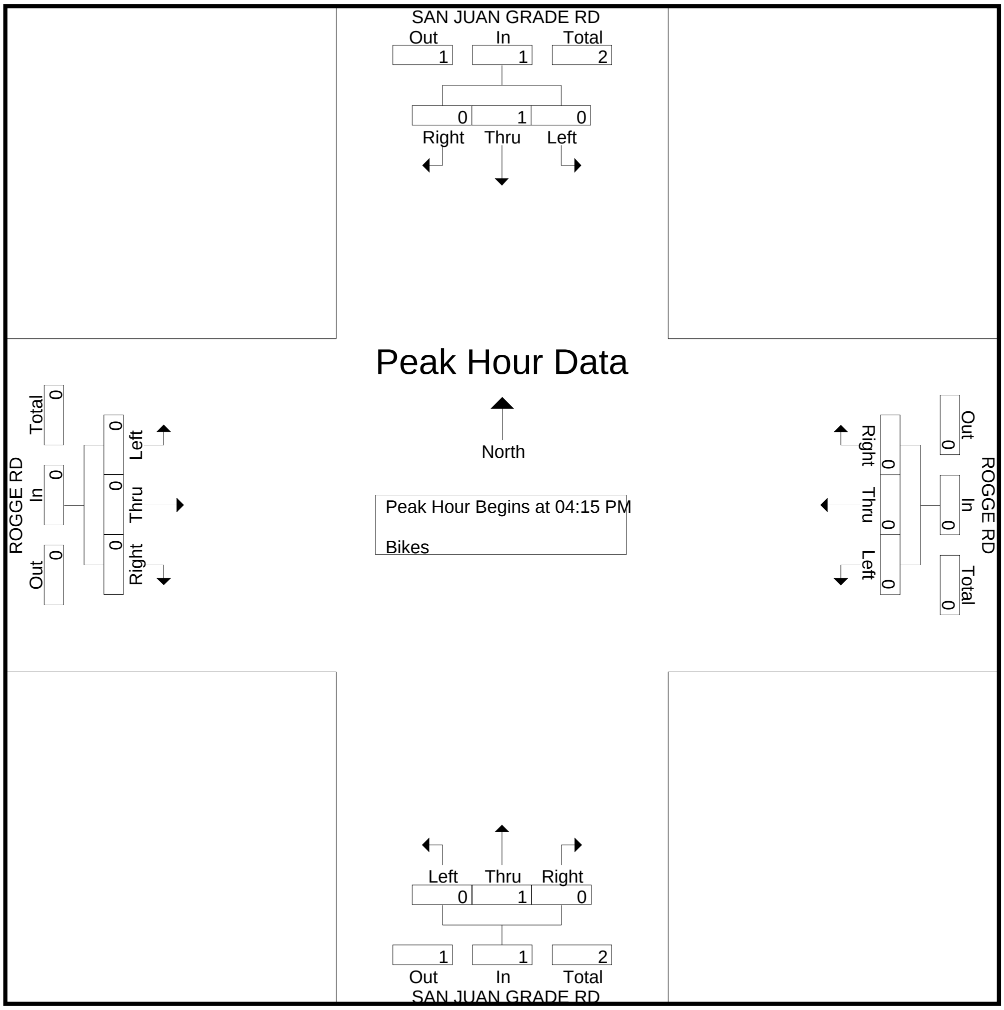

Traffic Data Service

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File Name : 11PM FINAL
Site Code : 00000011
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Grand Total	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	25	0	0	25	0	0	0	0	0	0	75	0	0	75	0	0	0	0	0	

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				RUSSELL RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.750

Traffic Data Service

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File Name : 11PM FINAL
Site Code : 00000011
Start Date : 11/17/2015
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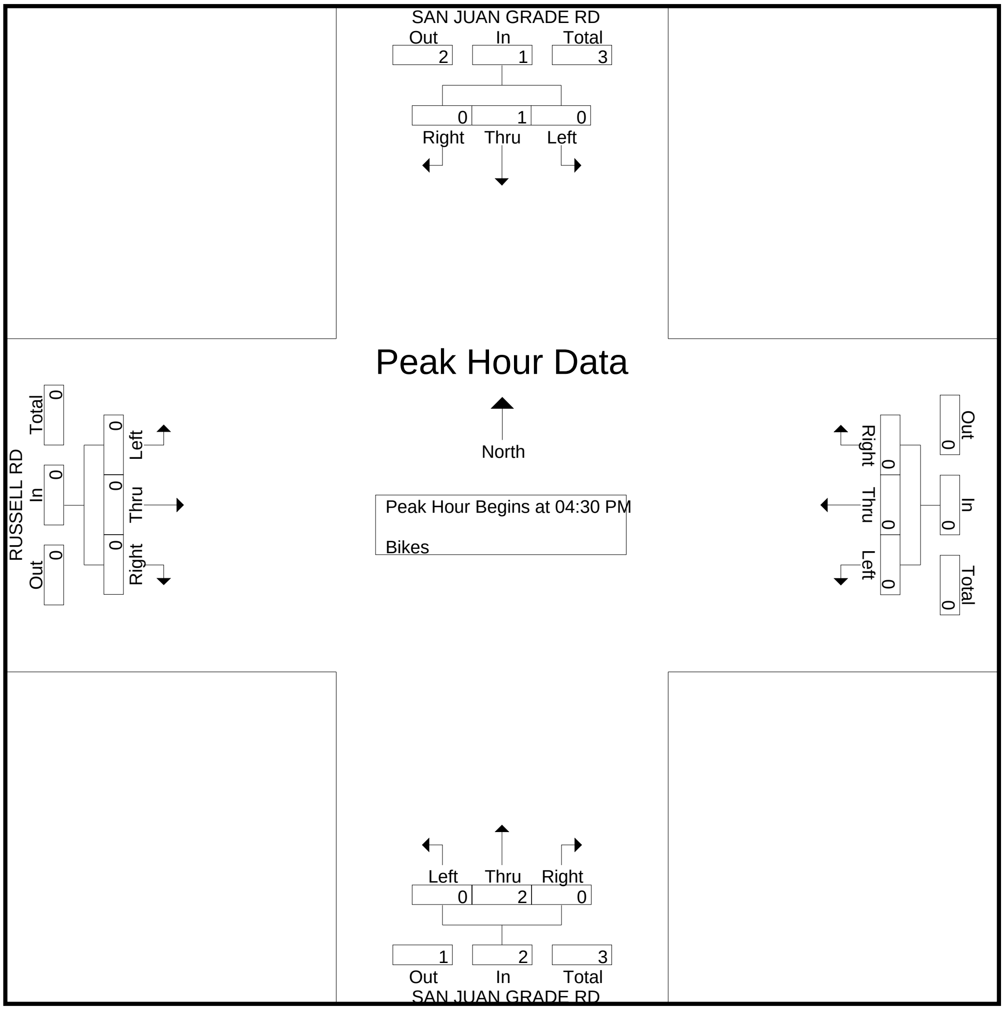

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 12PM FINAL
Site Code : 00000012
Start Date : 11/17/2015

Groups Printed- Bikes

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					ROGGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				ROGGE RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Traffic Data Service

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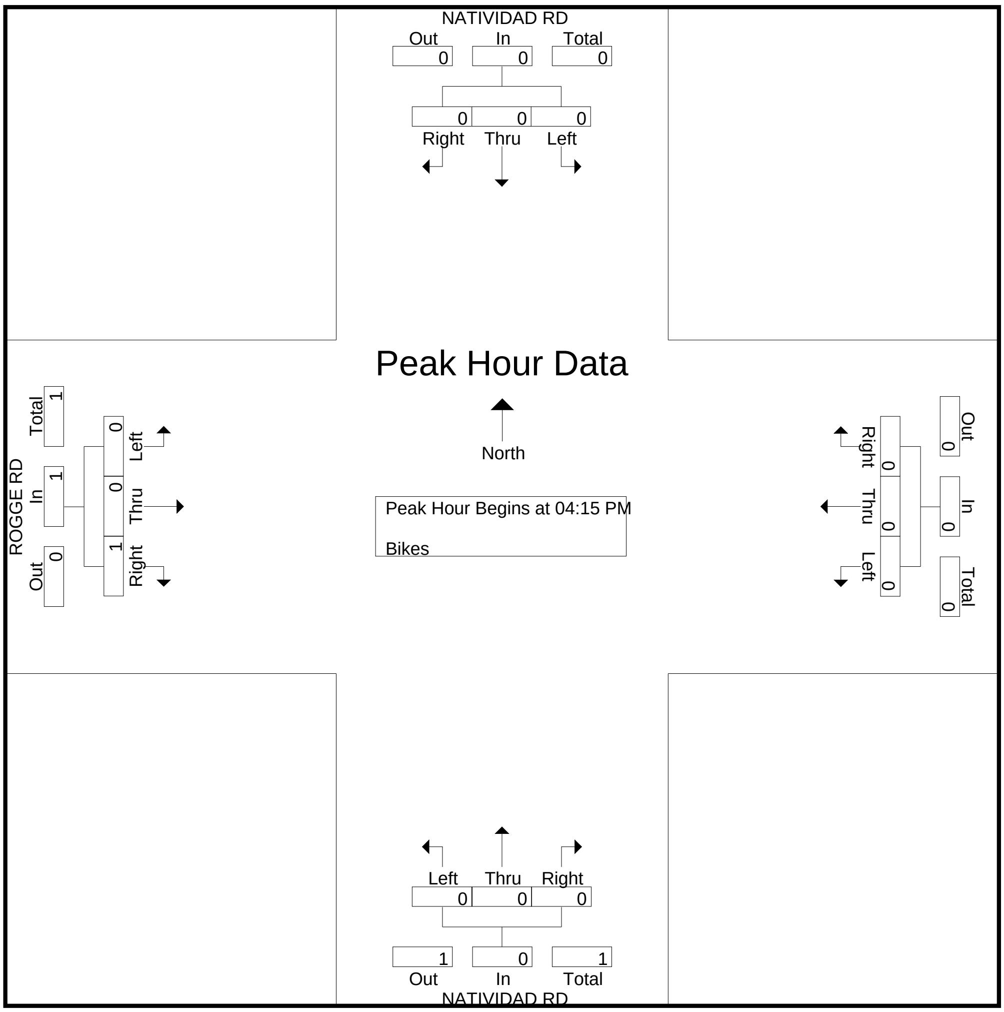
File Name : 12PM FINAL
Site Code : 00000012
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	SAN JUAN GRADE RD Southbound				Westbound				SAN JUAN GRADE RD Northbound				VAN BUREN AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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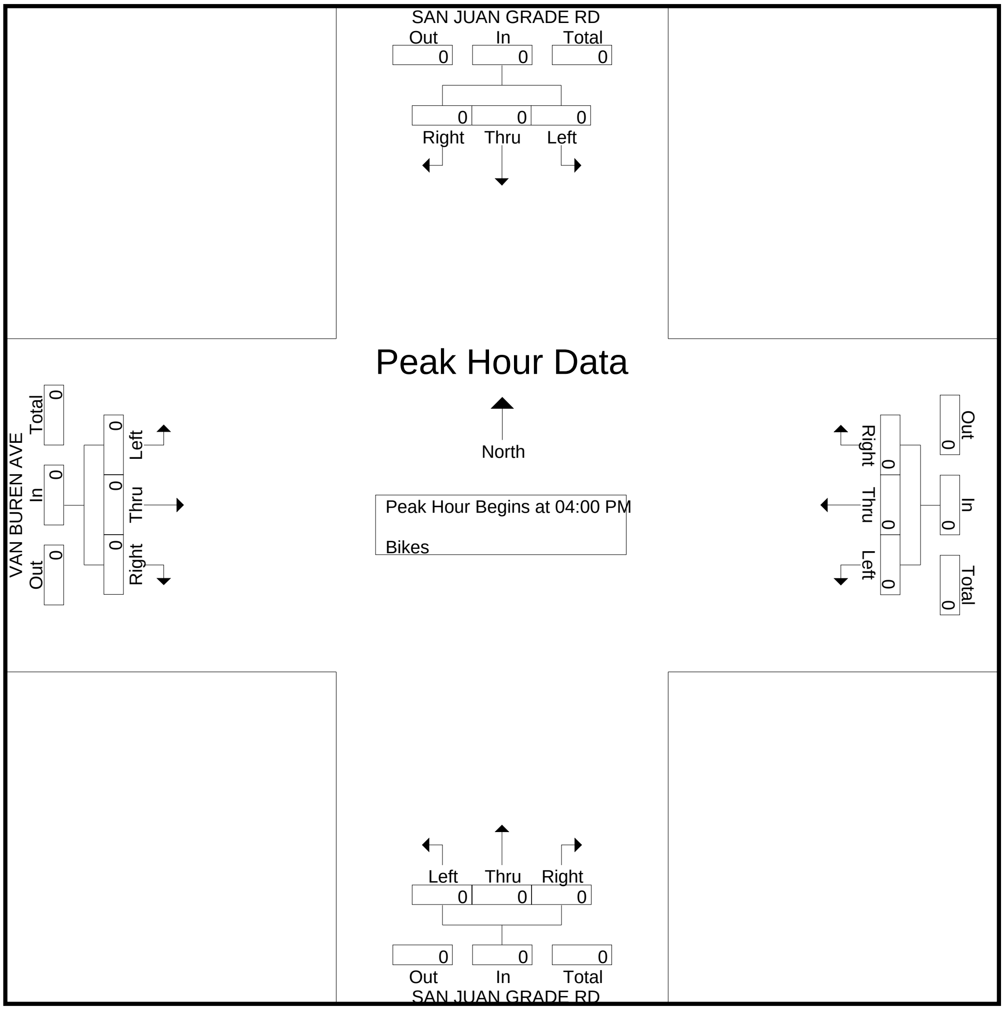
File Name : 14PM FINAL
Site Code : 00000014
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 15PM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					US-101 SB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 SB RAMPS Southbound				BORONDA RD Westbound				US-101 SB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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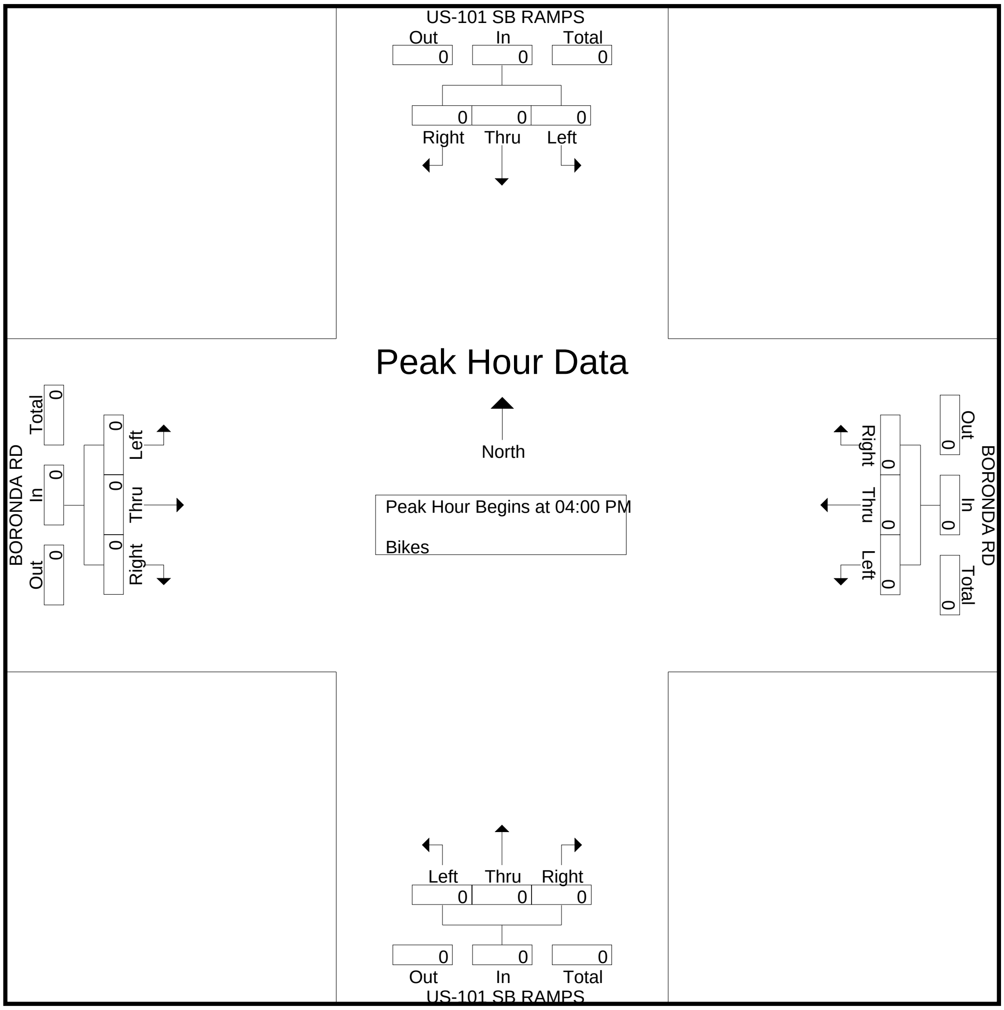
File Name : 15PM FINAL
Site Code : 00000015
Start Date : 1/14/2016
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 16PM FINAL
Site Code : 00000016
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	US-101 NB RAMPS Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	US-101 NB RAMPS Southbound				BORONDA RD Westbound				US-101 NB RAMPS Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA

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File Name : 16PM FINAL
Site Code : 00000016
Start Date : 1/14/2016
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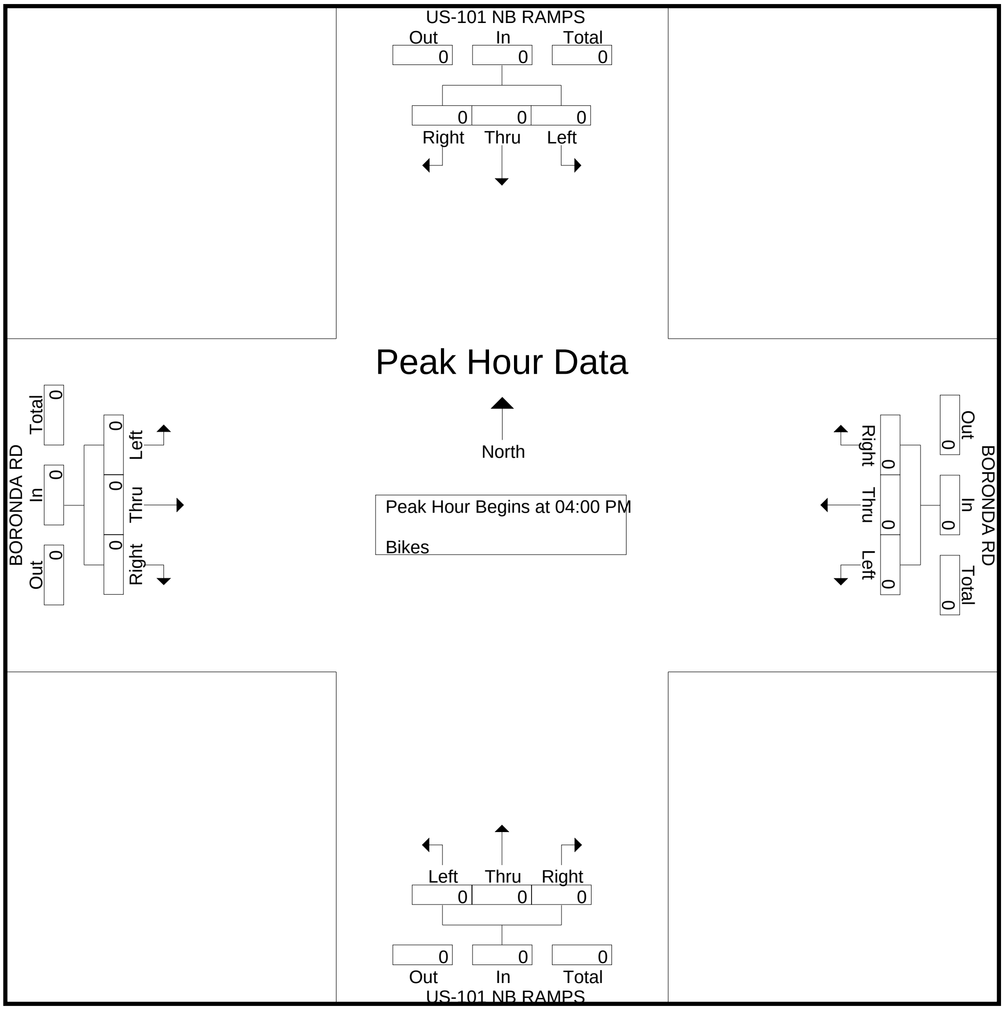

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 17PM FINAL
Site Code : 00000017
Start Date : 1/14/2016

Groups Printed- Bikes

	N MAIN ST Southbound					E BORONDA RD Westbound					N MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	50	0	0	50	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	

	N MAIN ST Southbound				E BORONDA RD Westbound				N MAIN ST Northbound				BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.500

Traffic Data Service

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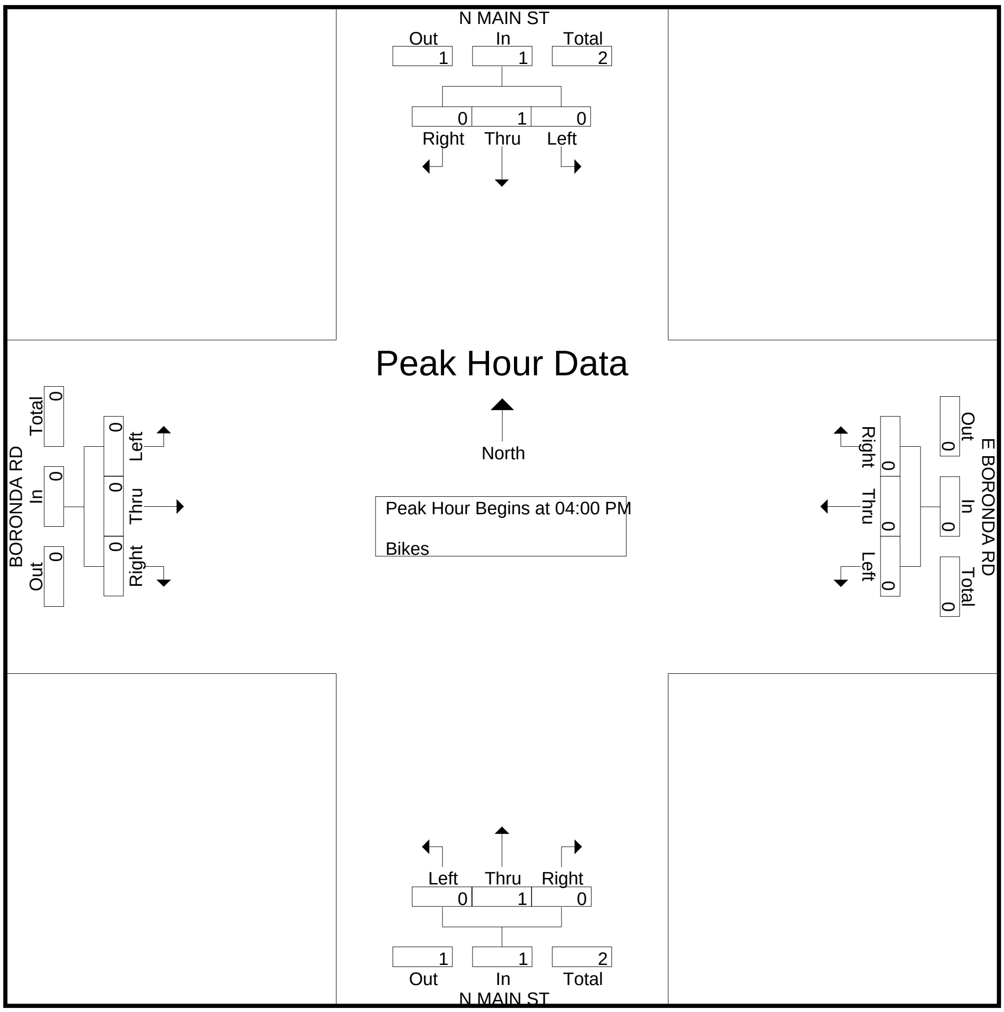
File Name : 17PM FINAL
Site Code : 00000017
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 18PM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					SAN JUAN GRADE RD Westbound					N MAIN ST Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	N MAIN ST Southbound				SAN JUAN GRADE RD Westbound				N MAIN ST Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

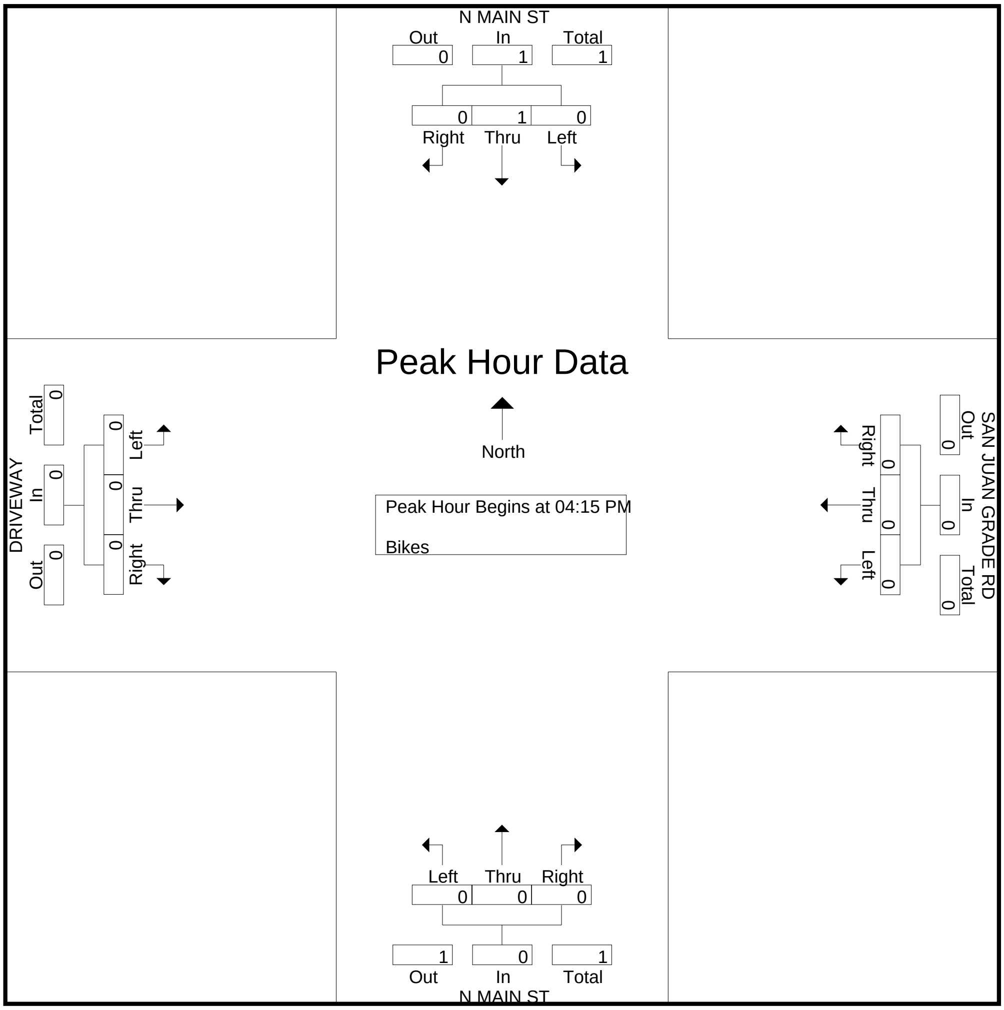
Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 18PM FINAL
Site Code : 00000018
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 19PM FINAL
Site Code : 00000019
Start Date : 11/18/2015

Groups Printed- Bikes

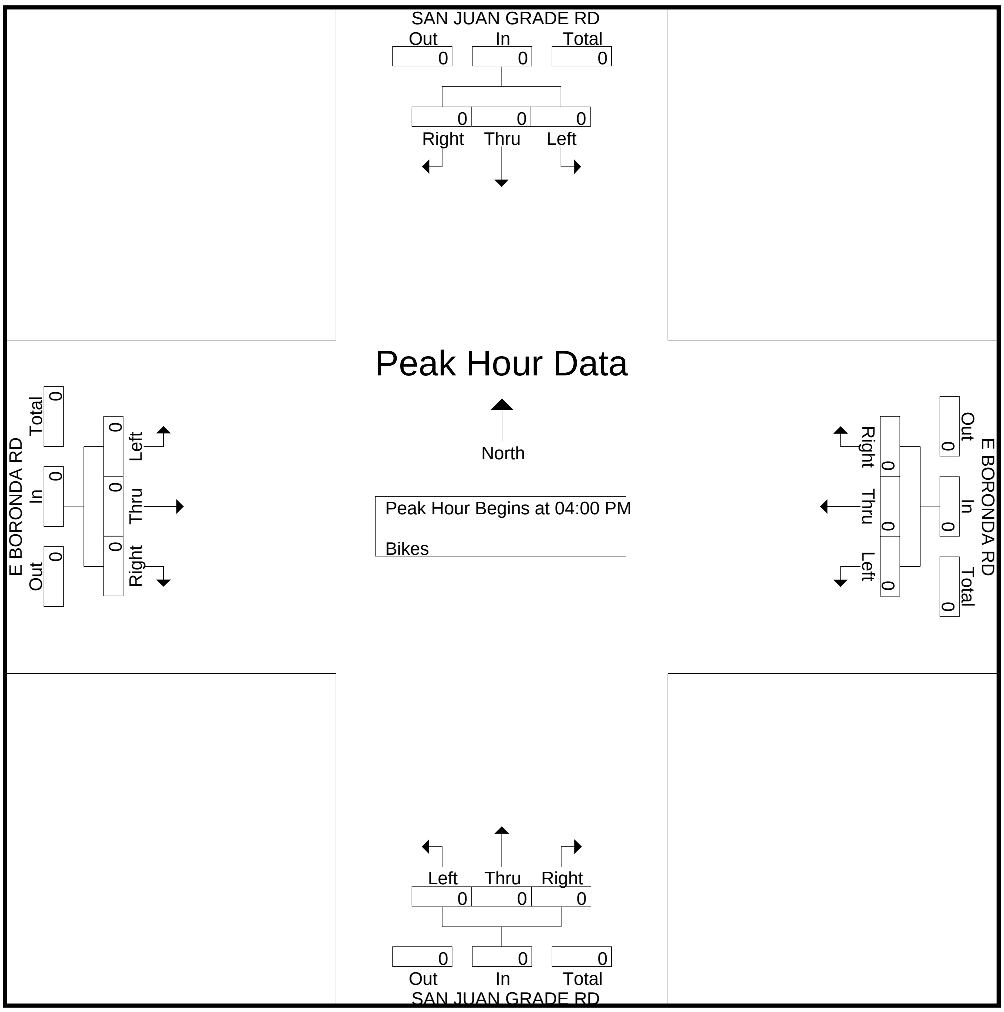
	SAN JUAN GRADE RD Southbound					E BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	SAN JUAN GRADE RD Southbound				E BORONDA RD Westbound				SAN JUAN GRADE RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 19PM FINAL
Site Code : 00000019
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 20PM FINAL
Site Code : 00000020
Start Date : 11/18/2015

Groups Printed- Bikes

	MCKINNON ST Southbound					E BORONDA RD Westbound					MCKINNON ST Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	4
Grand Total	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	4
Apprch %	0	0	0	0		0	100	0	0		100	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	25	0	0	25	25	0	0	0	25	0	50	0	0	50	

	MCKINNON ST Southbound				E BORONDA RD Westbound				MCKINNON ST Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	**2**
05:30 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	1	1	0	0	1	0	2	0	2	4
% App. Total	0	0	0		0	100	0		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.000	.250	.000	.250	.000	.250	.500

Traffic Data Service

Campbell, CA
(408) 377-2988
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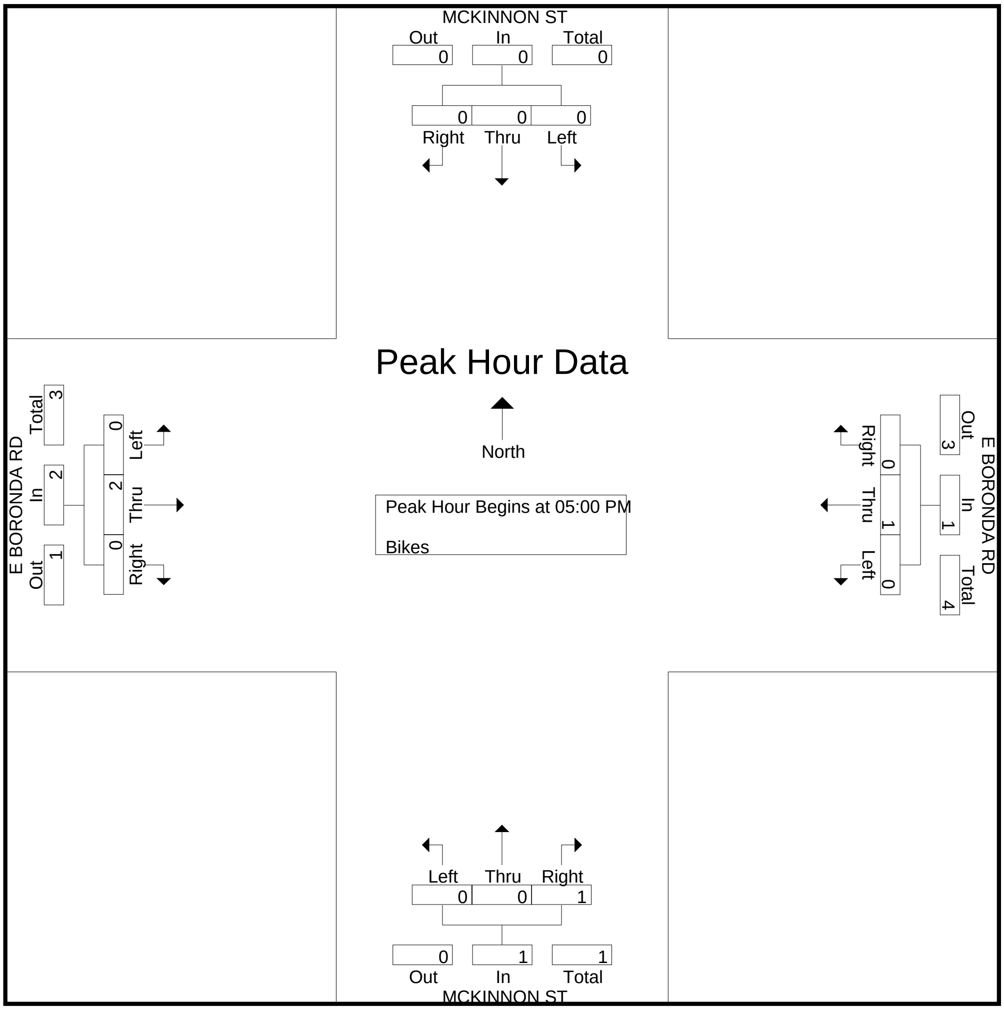
File Name : 20PM FINAL
Site Code : 00000020
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 21PM FINAL
Site Code : 00000021
Start Date : 11/18/2015

Groups Printed- Bikes

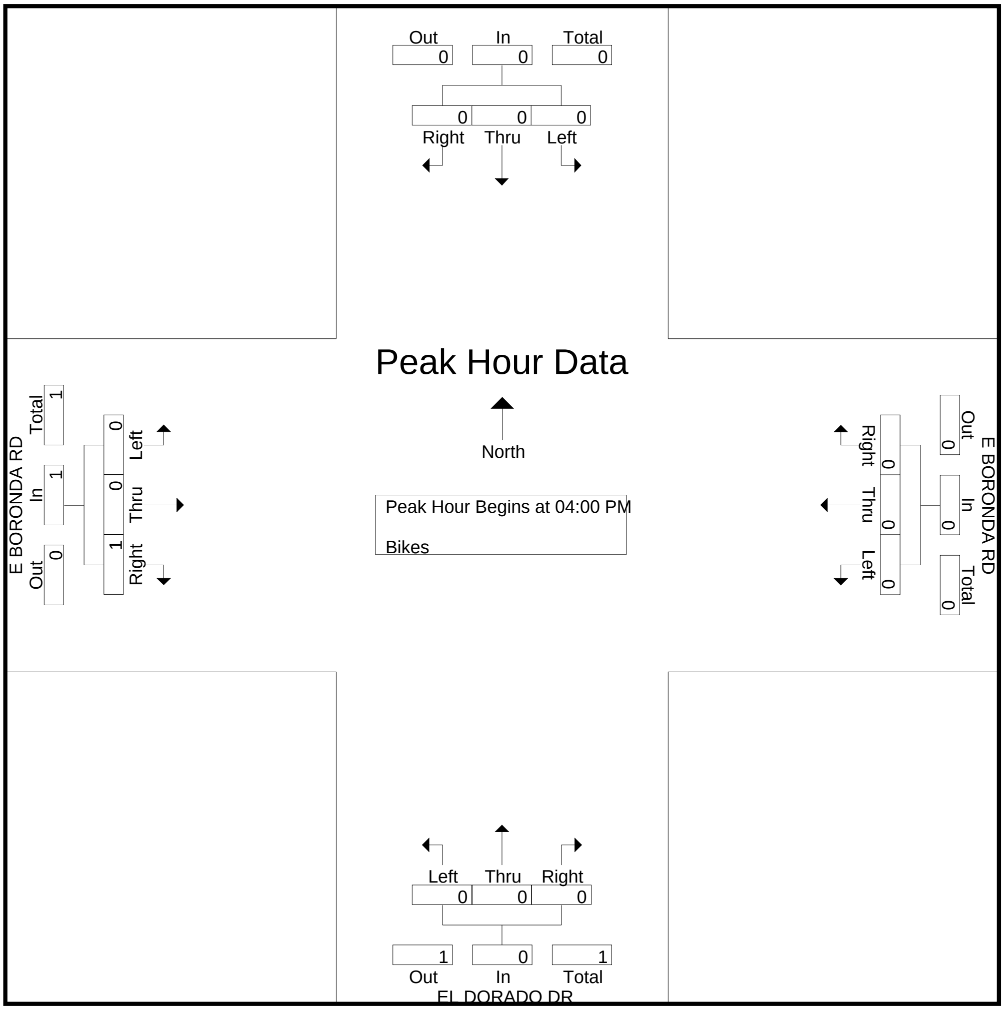
	Southbound					E BORONDA RD Westbound					EL DORADO DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	

	Southbound				E BORONDA RD Westbound				EL DORADO DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 21PM FINAL
Site Code : 00000021
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/17/2015

Groups Printed- Bikes

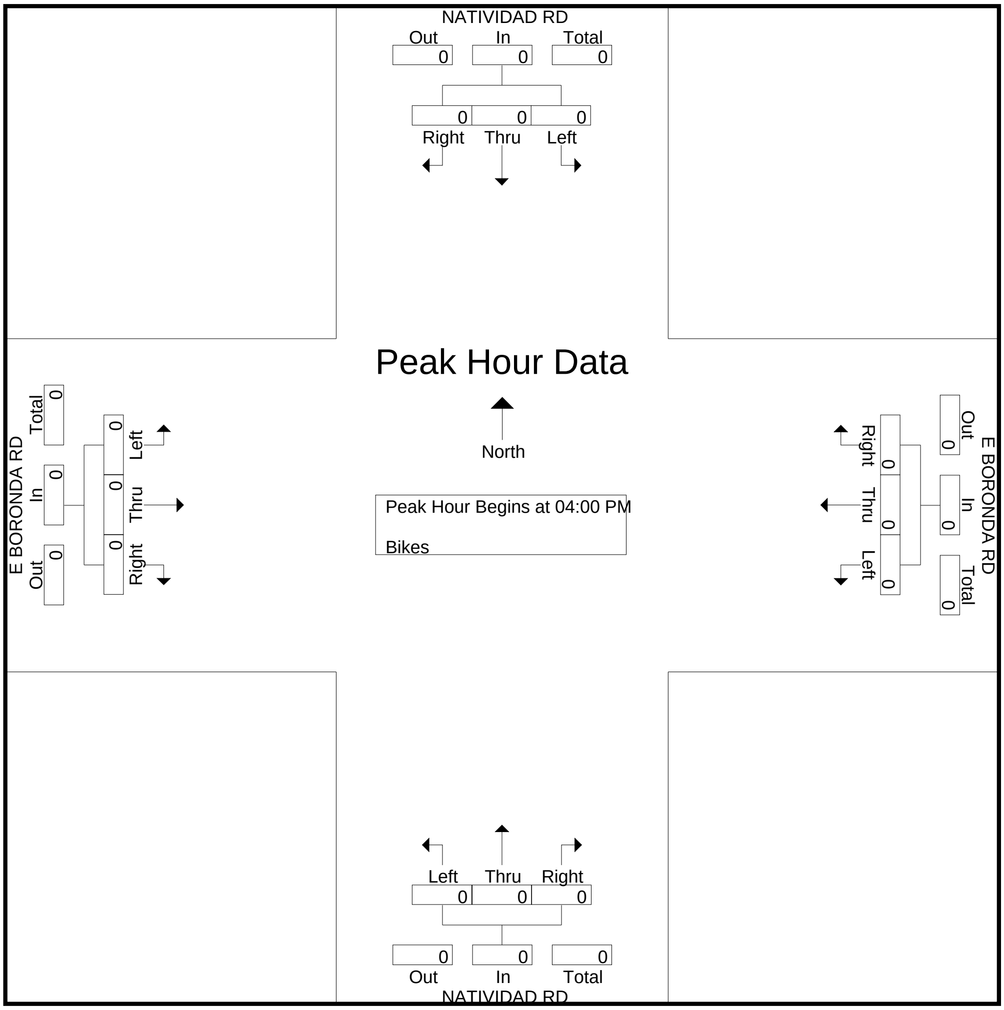
	NATIVIDAD RD Southbound					E BORONDA RD Westbound					NATIVIDAD RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	NATIVIDAD RD Southbound				E BORONDA RD Westbound				NATIVIDAD RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 22PM FINAL
Site Code : 00000022
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 23PM FINAL
Site Code : 00000023
Start Date : 11/17/2015

Groups Printed- Bikes

	Southbound					E BORONDA RD Westbound					INDEPENDENCE BLVD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	Southbound				E BORONDA RD Westbound				INDEPENDENCE BLVD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

Traffic Data Service

Campbell, CA
(408) 377-2988
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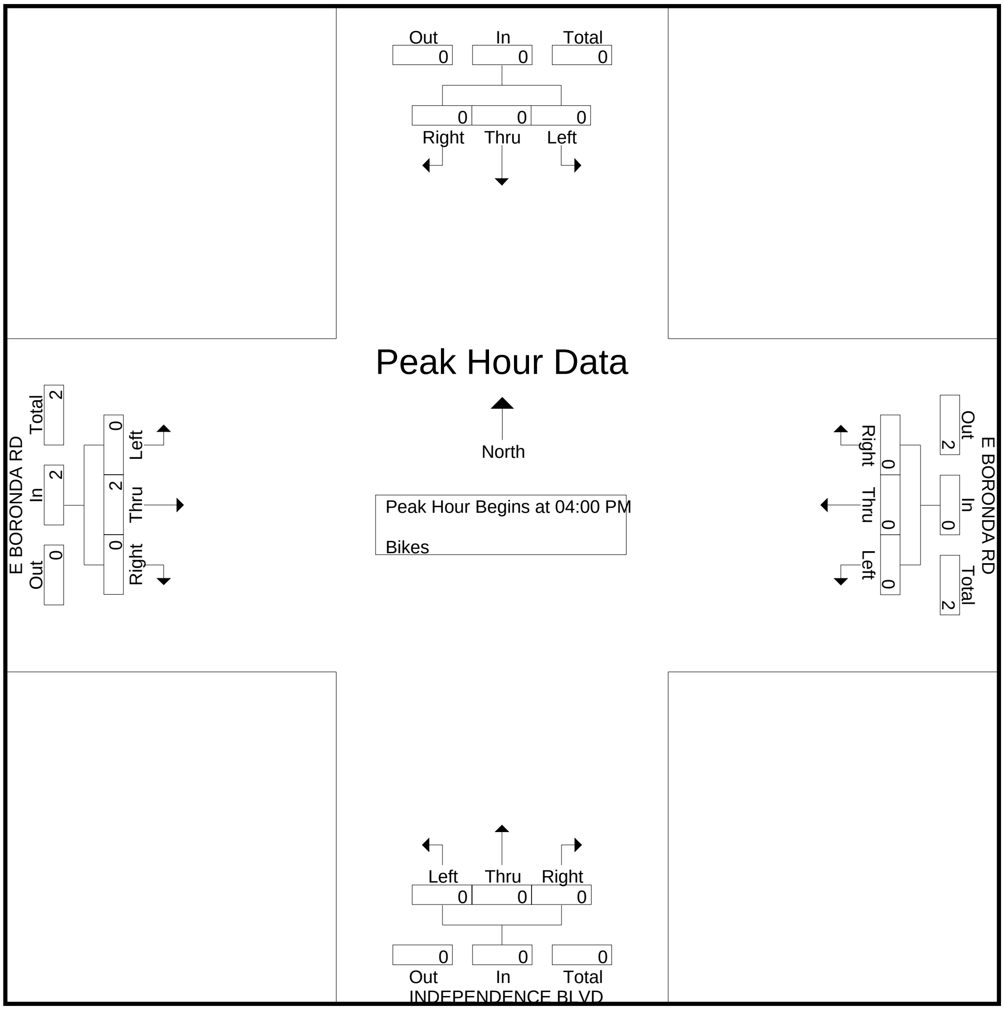
File Name : 23PM FINAL
Site Code : 00000023
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 24PM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

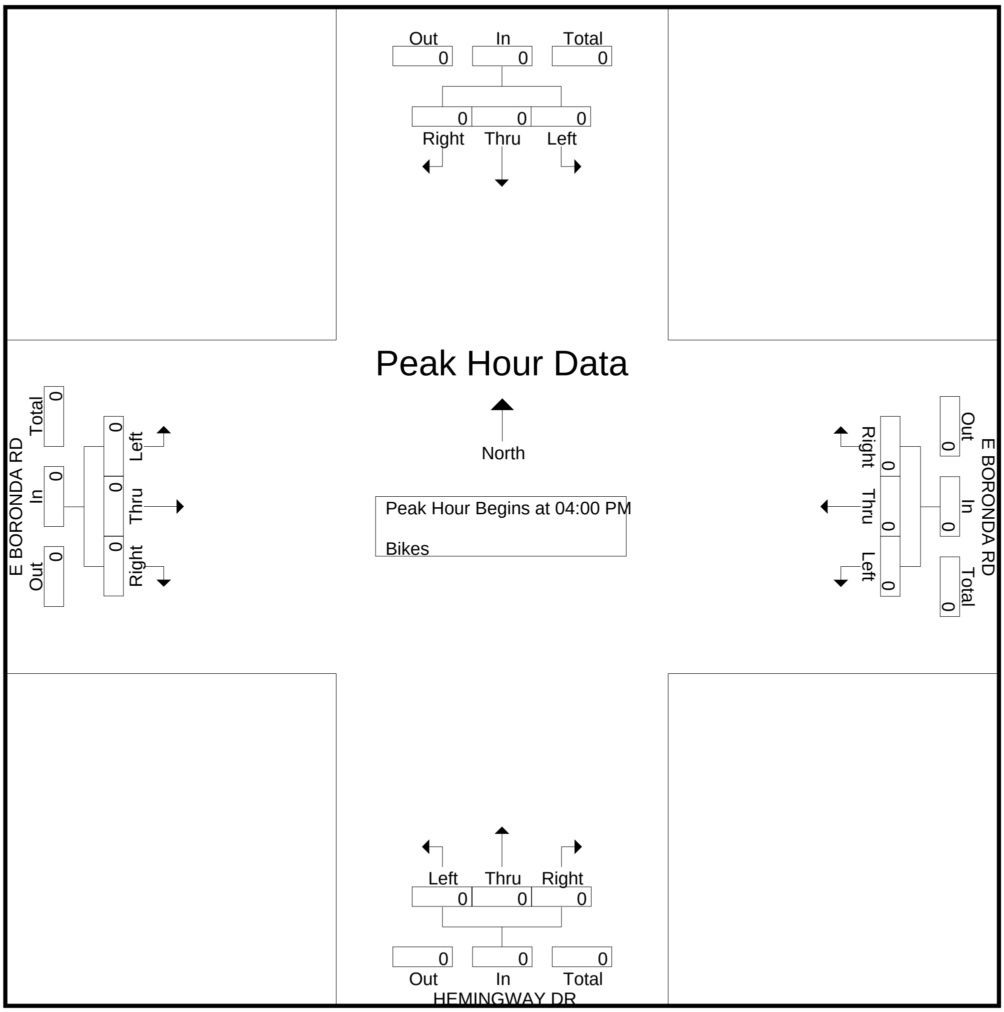
	Southbound					E BORONDA RD Westbound					HEMINGWAY DR Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	Southbound				E BORONDA RD Westbound				HEMINGWAY DR Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 24PM FINAL
Site Code : 00000024
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 26PM FINAL
Site Code : 00000026
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E ALVIN DR Westbound					N MAIN ST Northbound					W ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
Apprch %	50	50	0	0		0	100	0	0		0	100	0	0		0	0	0	0		
Total %	25	25	0	0	50	0	25	0	0	25	0	25	0	0	25	0	0	0	0	0	

	N MAIN ST Southbound				E ALVIN DR Westbound				N MAIN ST Northbound				W ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
04:45 PM	**1**	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	1	0	2	0	1	0	1	0	1	0	1	0	0	0	0	4
% App. Total	50	50	0		0	100	0		0	100	0		0	0	0		
PHF	.250	.250	.000	.500	.000	.250	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	1.00

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File Name : 26PM FINAL
Site Code : 00000026
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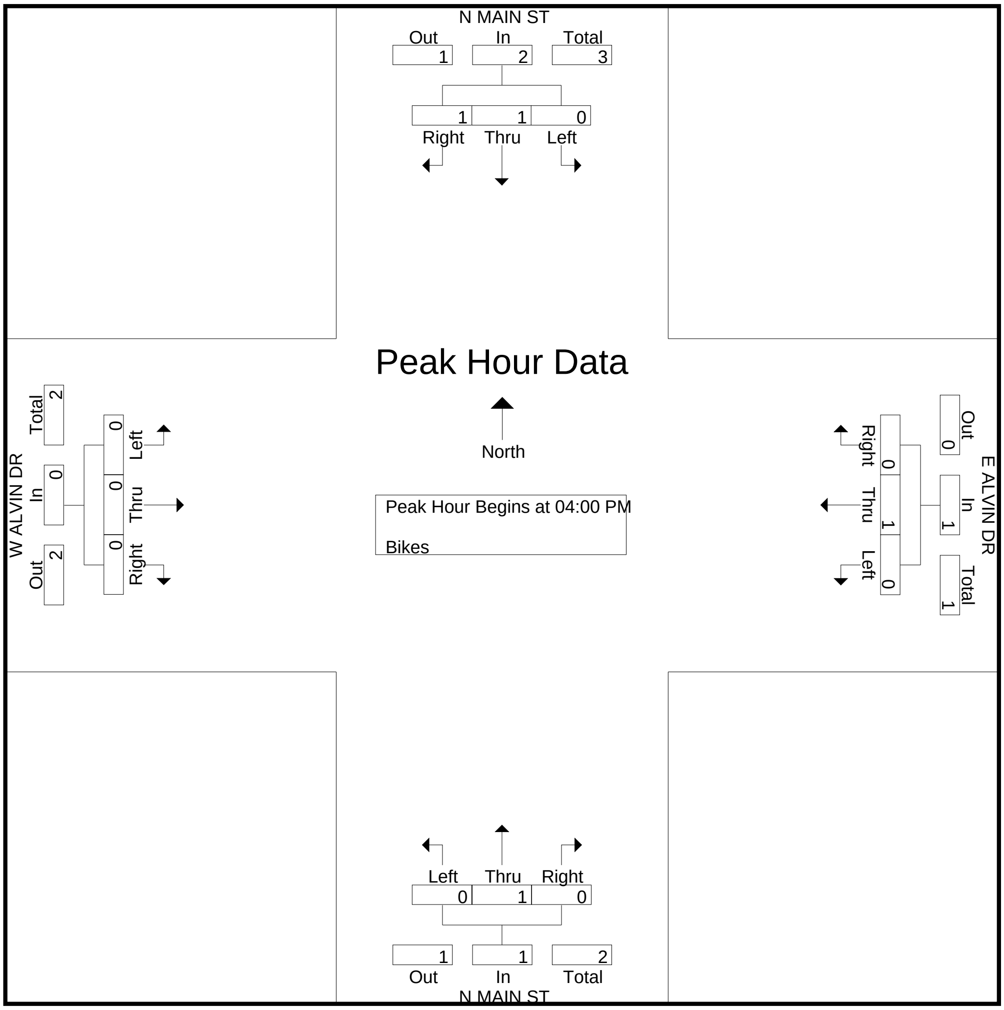

Traffic Data Service

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File Name : 27PM FINAL
Site Code : 00000027
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	NATIVIDAD RD Southbound					Westbound					NATIVIDAD RD Northbound					E ALVIN DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	NATIVIDAD RD Southbound				Westbound				NATIVIDAD RD Northbound				E ALVIN DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 27PM FINAL
Site Code : 00000027
Start Date : 11/18/2015
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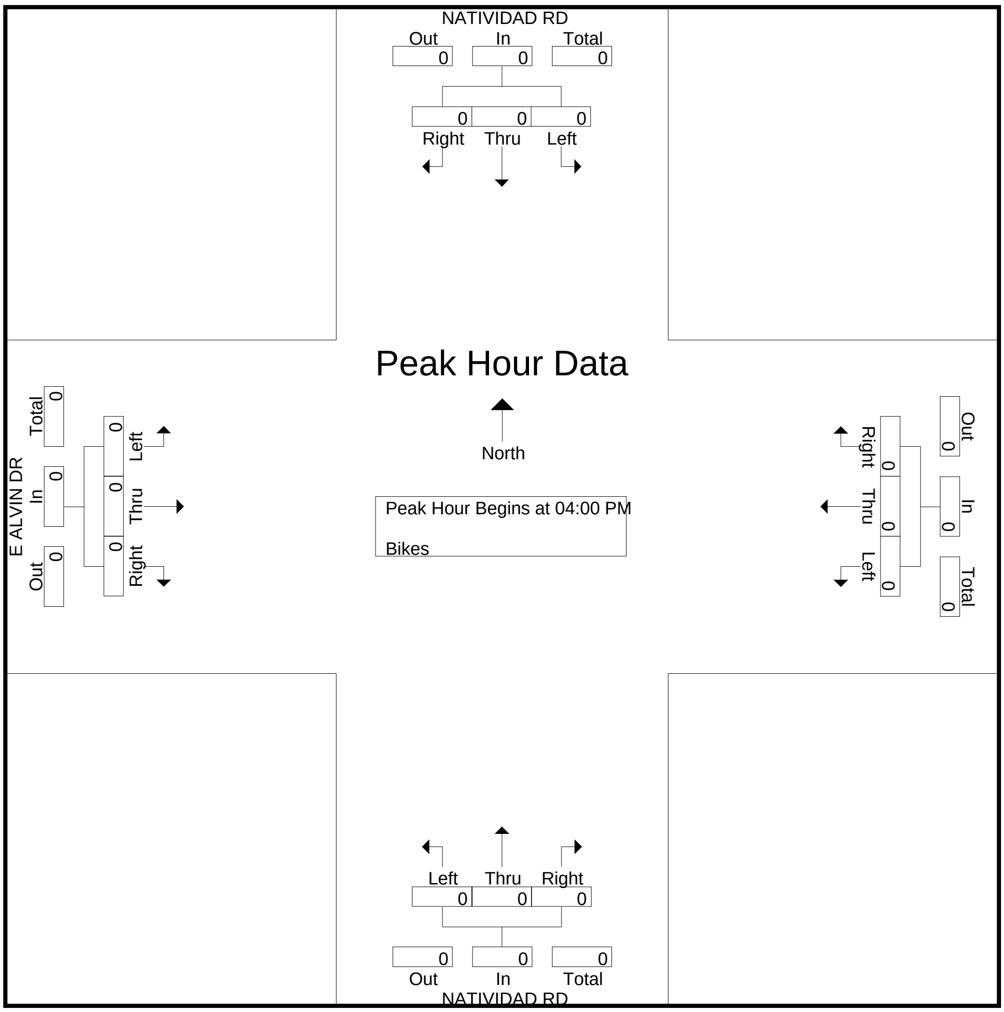

Traffic Data Service

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File Name : 28PM FINAL
Site Code : 00000028
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	INDEPENDENCE BLVD Southbound					CONSTITUTION BLVD Westbound					DRIVEWAY Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	INDEPENDENCE BLVD Southbound				CONSTITUTION BLVD Westbound				DRIVEWAY Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 28PM FINAL
Site Code : 00000028
Start Date : 11/17/2015
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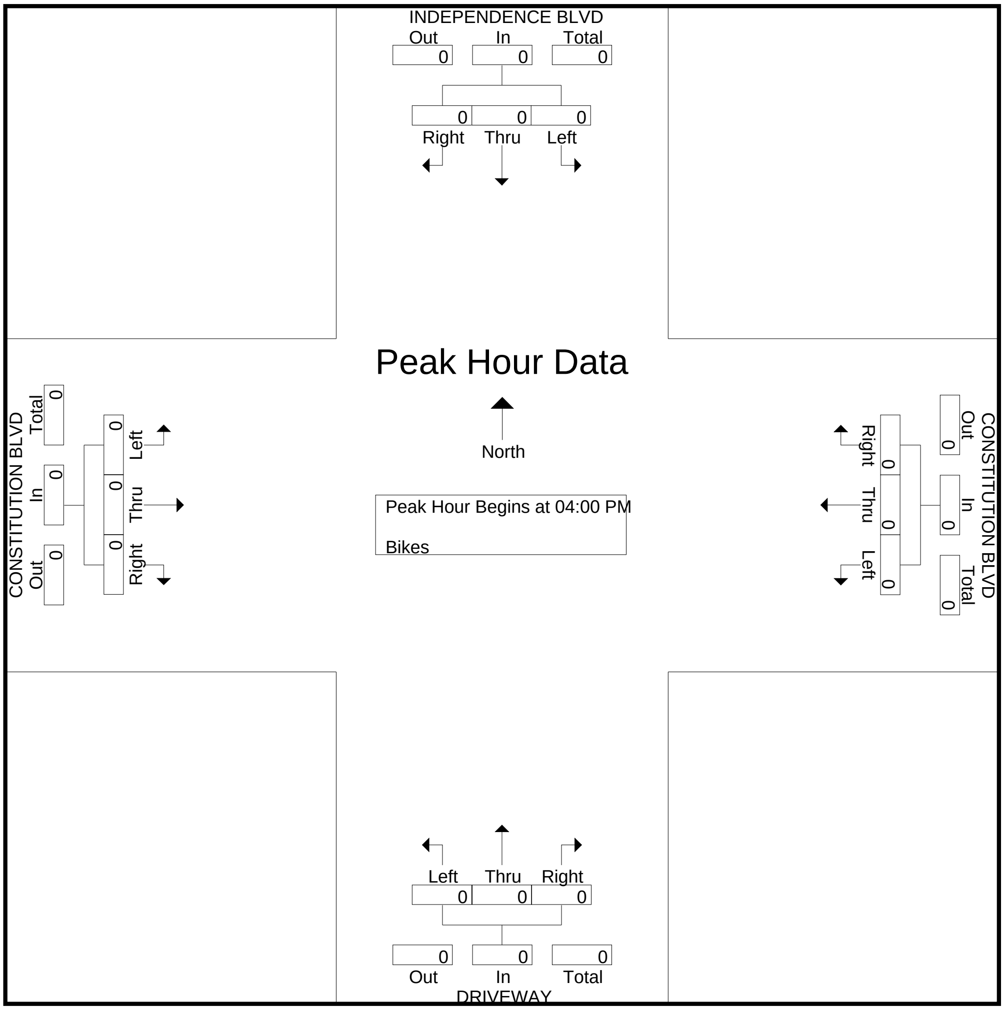

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File Name : 29PM FINAL
Site Code : 00000029
Start Date : 11/17/2015
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Groups Printed- Bikes

	E BORONDA RD Southbound					Westbound					E BORONDA RD Northbound					CONSTITUTION BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	E BORONDA RD Southbound				Westbound				E BORONDA RD Northbound				CONSTITUTION BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

Traffic Data Service

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File Name : 29PM FINAL
Site Code : 00000029
Start Date : 11/17/2015
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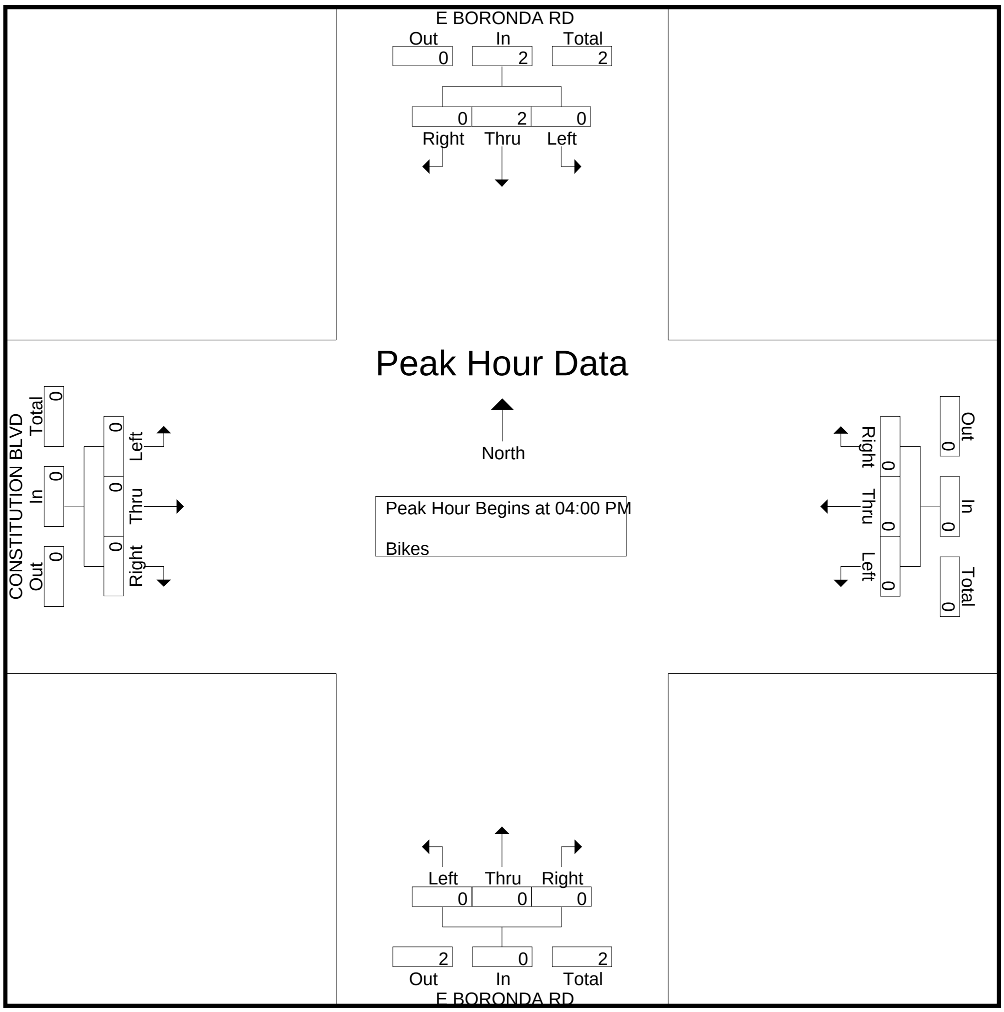

Traffic Data Service

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File Name : 30PM FINAL
Site Code : 00000030
Start Date : 1/14/2016
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Groups Printed- Bikes

	US-101 SB RAMPS Southbound					W LAUREL DR Westbound					US-101 SB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
Grand Total	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
Apprch %	0	0	0	0		100	0	0	0		0	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	50	0	0	0	50	0	0	0	0	0	50	0	0	0	50	

	US-101 SB RAMPS Southbound				W LAUREL DR Westbound				US-101 SB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
% App. Total	0	0	0		100	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.500

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File Name : 30PM FINAL
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Start Date : 1/14/2016
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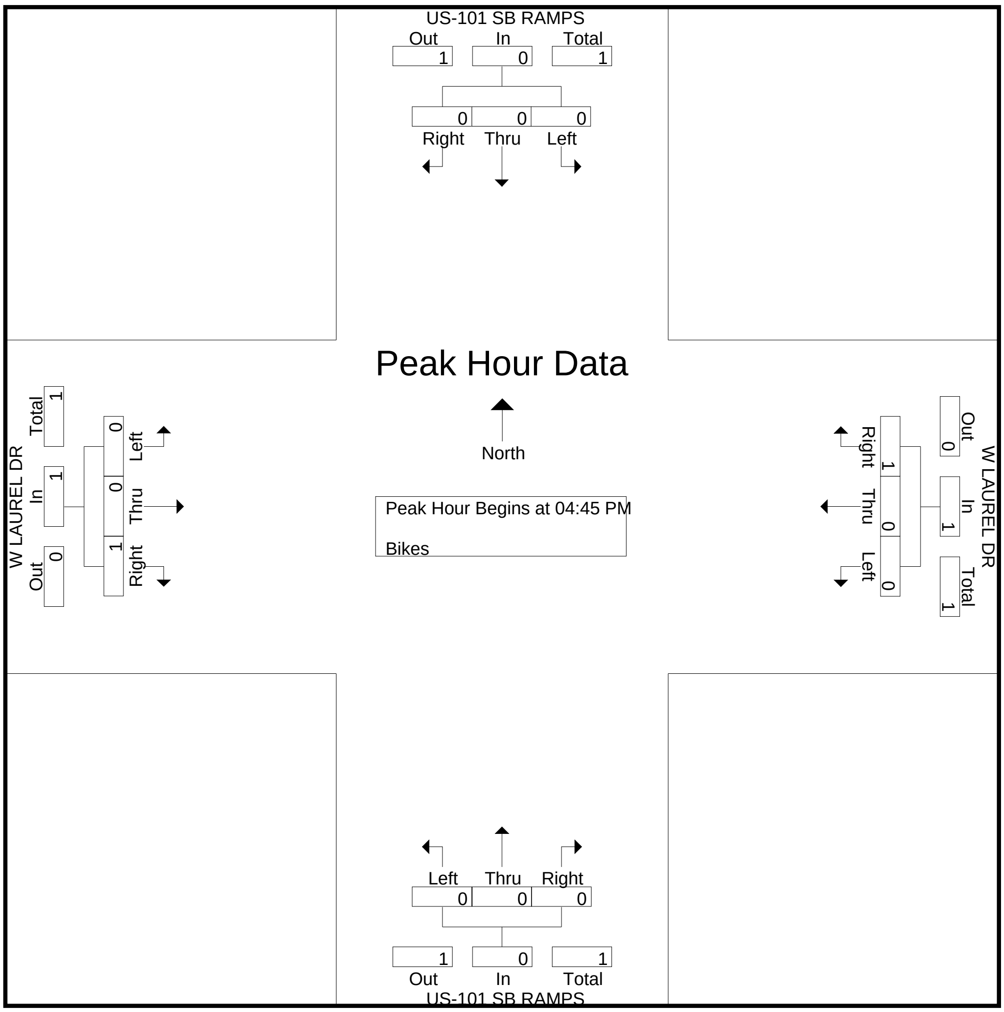

Traffic Data Service

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File Name : 31PM FINAL
Site Code : 00000031
Start Date : 1/14/2016
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Groups Printed- Bikes

	US-101 NB RAMPS Southbound					W LAUREL DR Westbound					US-101 NB RAMPS Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	US-101 NB RAMPS Southbound				W LAUREL DR Westbound				US-101 NB RAMPS Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

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File Name : 31PM FINAL
Site Code : 00000031
Start Date : 1/14/2016
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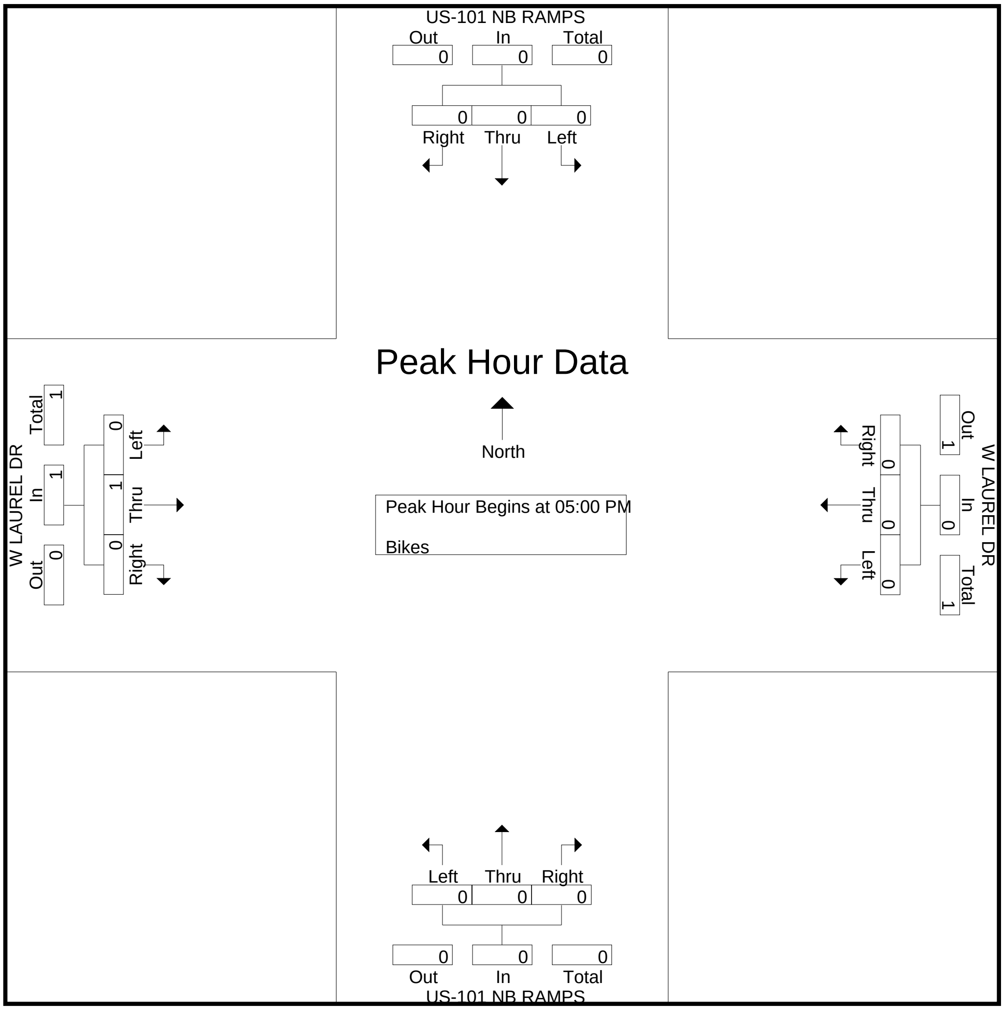

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 32PM FINAL
Site Code : 00000032
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E LAUREL DR Westbound					N MAIN ST Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	50	50	0		
Total %	0	50	0	0	50	0	0	0	0	0	0	0	0	0	0	0	25	25	0	50	

	N MAIN ST Southbound				E LAUREL DR Westbound				N MAIN ST Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**3**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	1	1	2	4
% App. Total	0	100	0		0	0	0		0	0	0		0	50	50		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	.333

Traffic Data Service

Campbell, CA
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File Name : 32PM FINAL
Site Code : 00000032
Start Date : 1/14/2016
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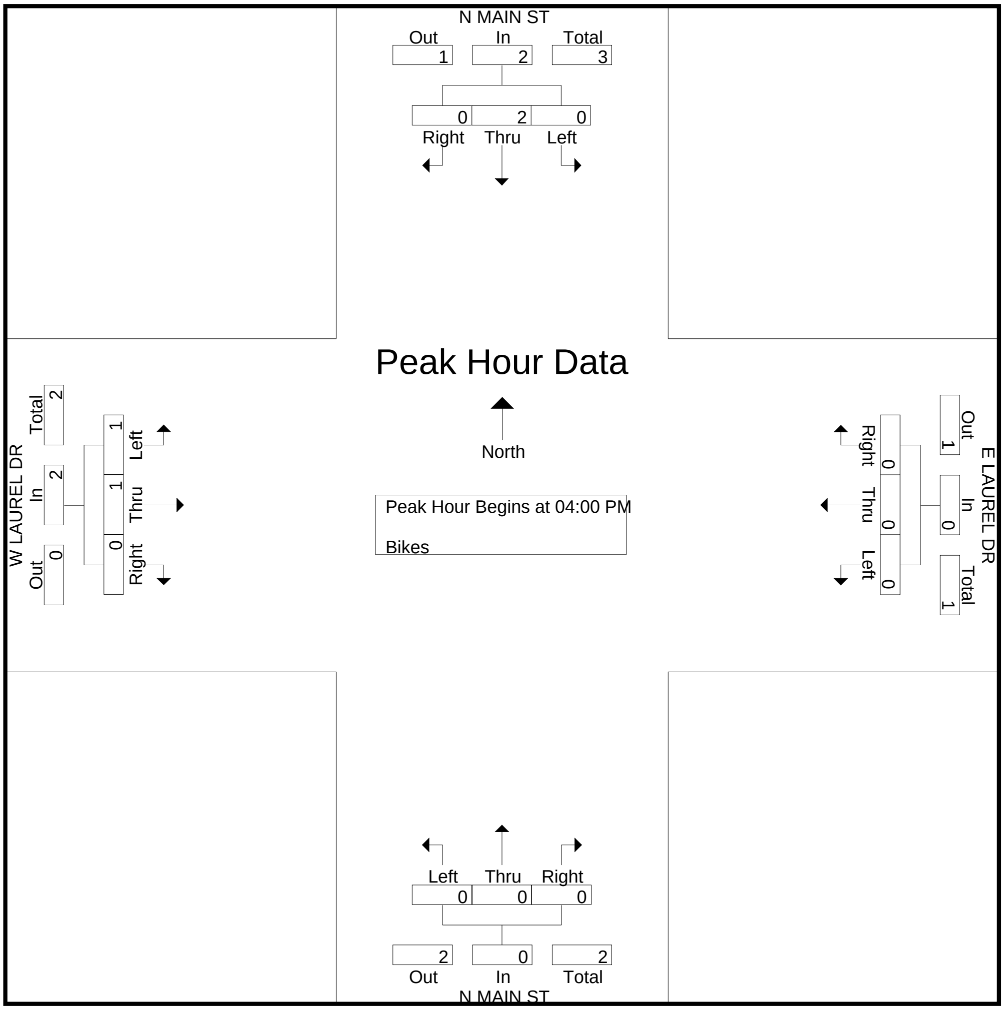

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 33PM FINAL
Site Code : 00000033
Start Date : 1/14/2016

Groups Printed- Bikes

	NATIVIDAD RD Southbound					E LAUREL DR Westbound					NATIVIDAD RD Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	NATIVIDAD RD Southbound				E LAUREL DR Westbound				NATIVIDAD RD Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

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File Name : 33PM FINAL
Site Code : 00000033
Start Date : 1/14/2016
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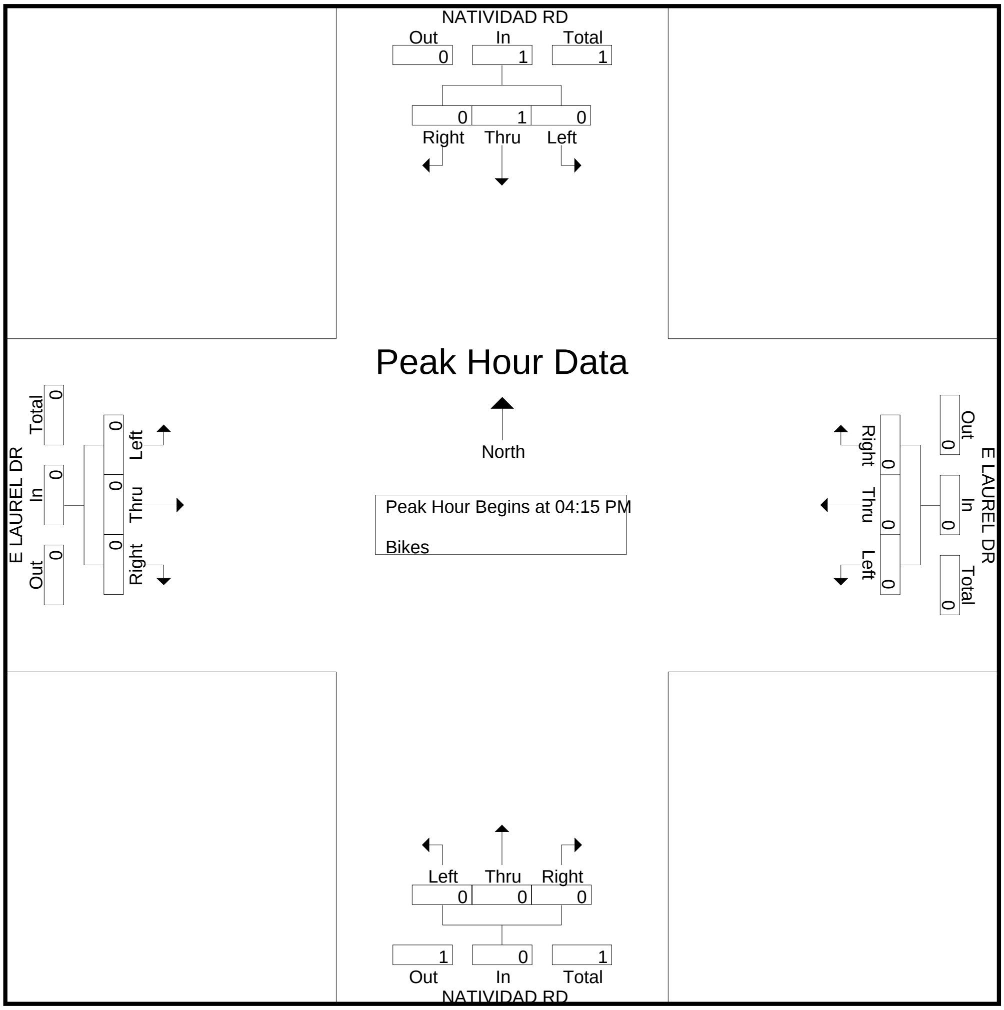

Traffic Data Service

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File Name : 34PM FINAL
Site Code : 00000034
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	CONSTITUTION BLVD Southbound					E LAUREL DR Westbound					Northbound					E LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Grand Total	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
Apprch %	0	0	100	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	33.3	0	33.3	0	33.3	0	0	33.3	0	0	0	0	0	0	33.3	0	0	33.3	

	CONSTITUTION BLVD Southbound				E LAUREL DR Westbound				Northbound				E LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
05:45 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
% App. Total	0	0	100		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.500

Traffic Data Service

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File Name : 34PM FINAL
Site Code : 00000034
Start Date : 11/17/2015
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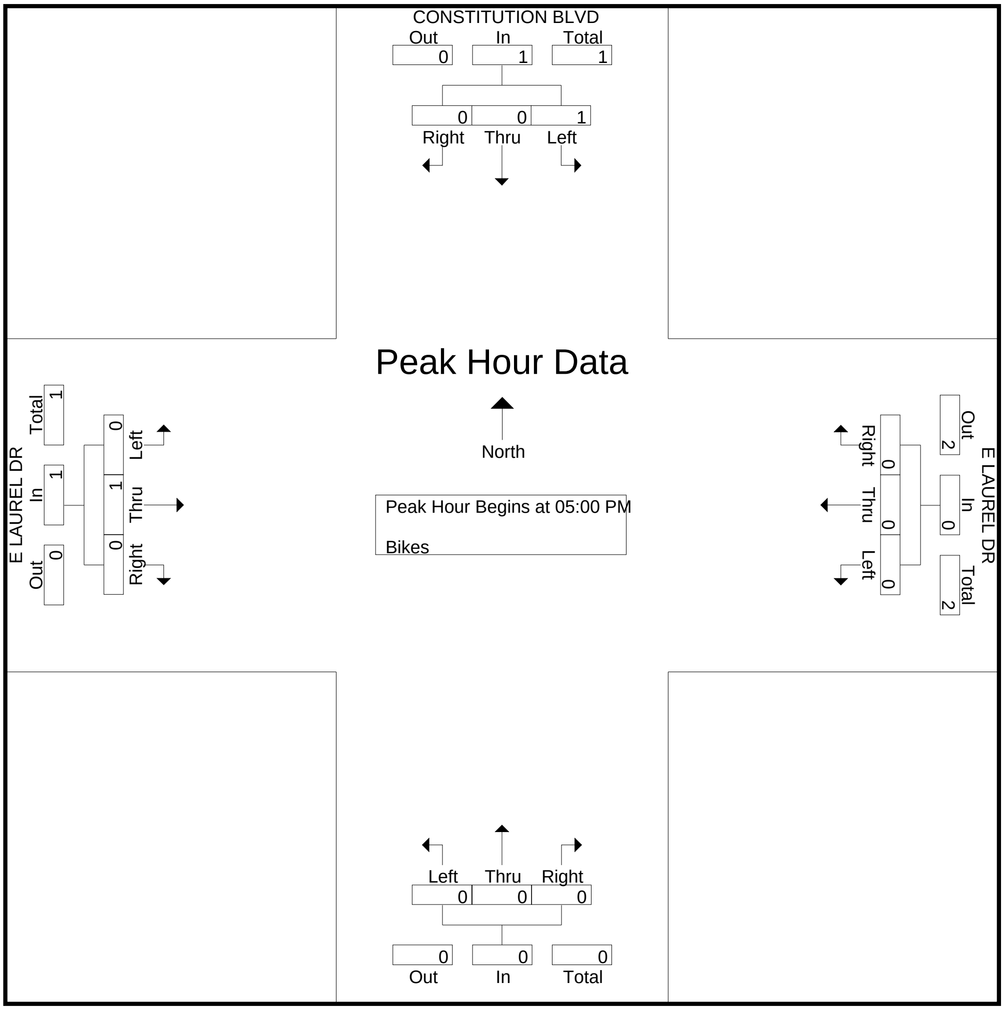

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 35PM FINAL
Site Code : 00000035
Start Date : 1/14/2016

Groups Printed- Bikes

	Southbound					E BORONDA RD Westbound					N SANBORN RD Northbound					E BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	Southbound				E BORONDA RD Westbound				N SANBORN RD Northbound				E BORONDA RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA
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File Name : 35PM FINAL
Site Code : 00000035
Start Date : 1/14/2016
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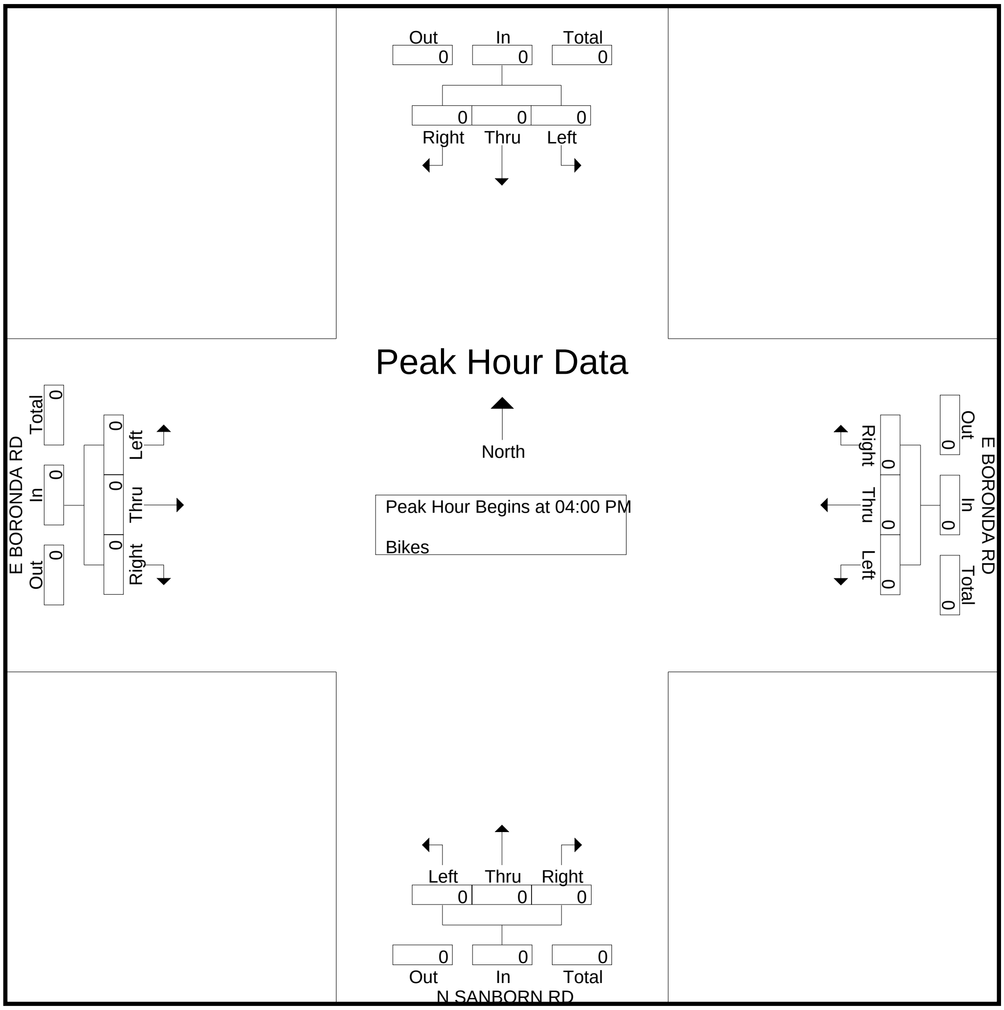

Traffic Data Service

Campbell, CA
(408) 377-2988
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File Name : 36PM FINAL
Site Code : 00000036
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	OLD STAGE RD Southbound					WILLIAMS RD Westbound					OLD STAGE RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	OLD STAGE RD Southbound				WILLIAMS RD Westbound				OLD STAGE RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 36PM FINAL
Site Code : 00000036
Start Date : 11/17/2015
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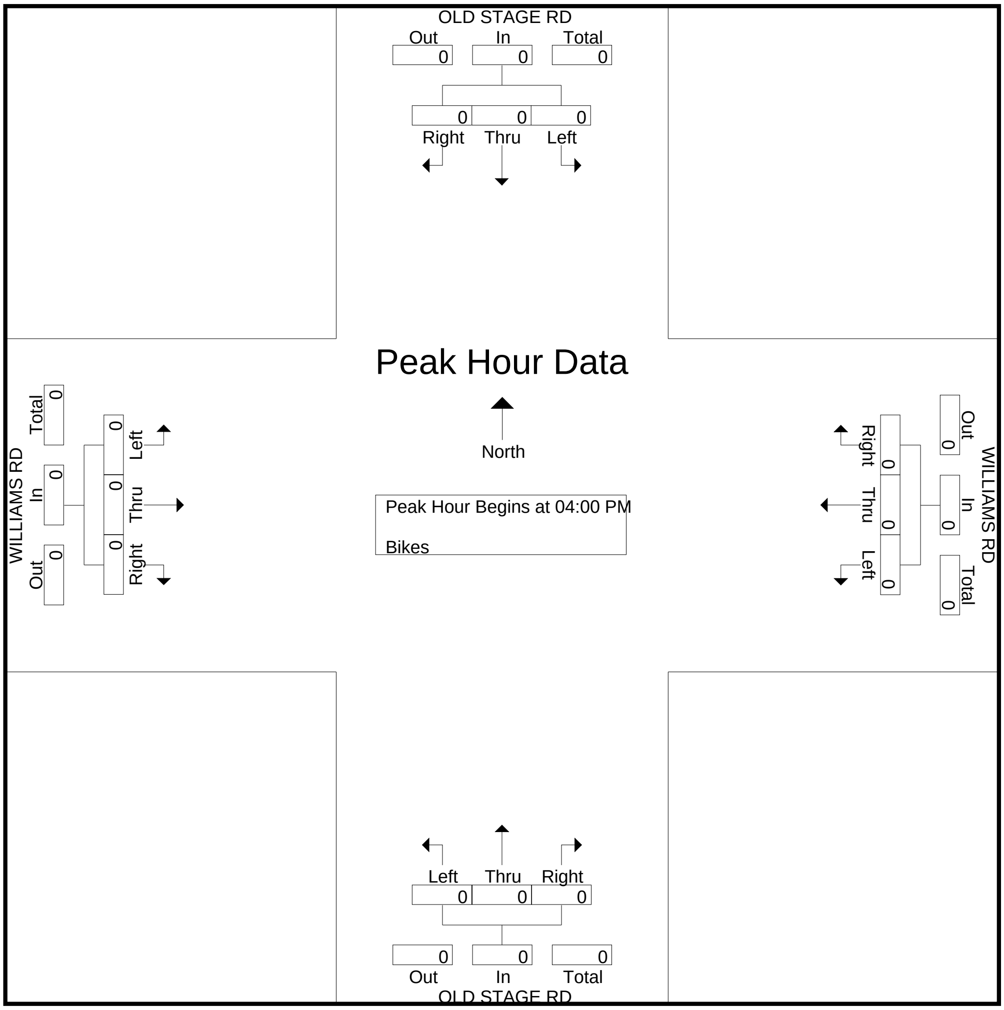

Traffic Data Service

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File Name : 37PM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E BERNAL DR Westbound					N MAIN ST Northbound					W BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
Grand Total	0	0	1	0	1	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	7
Apprch %	0	0	100	0		0	100	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	14.3	0	14.3	0	28.6	0	0	28.6	0	57.1	0	0	57.1	0	0	0	0	0	

	N MAIN ST Southbound				E BERNAL DR Westbound				N MAIN ST Northbound				W BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**2**
05:15 PM	0	0	**1**	**1**	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	1	1	0	0	0	0	0	4	0	4	0	0	0	0	5
% App. Total	0	0	100		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.625

Traffic Data Service

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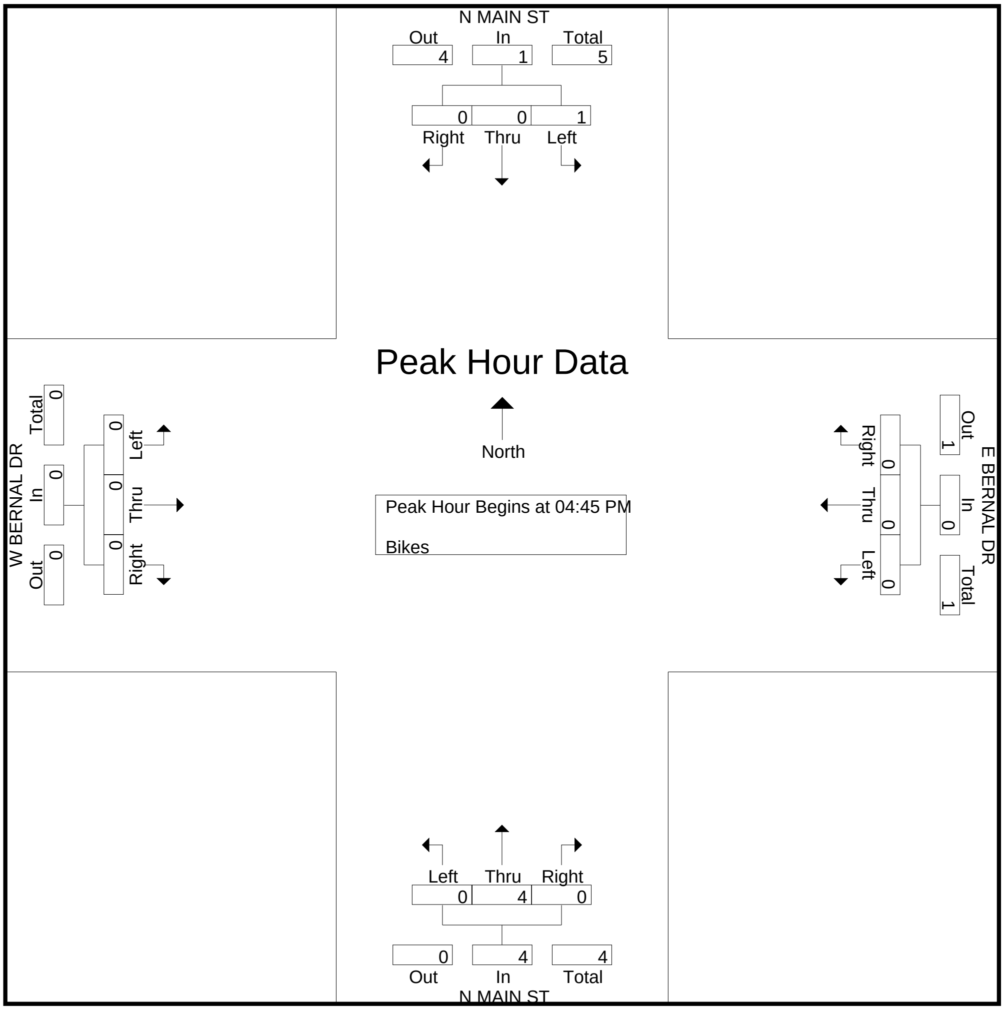
File Name : 37PM FINAL
Site Code : 00000037
Start Date : 11/18/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 38PM FINAL
Site Code : 00000038
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	NATIVIDAD RD Southbound					LA POSADA WAY Westbound					SHERWOOD DR Northbound					E BERNAL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4
Grand Total	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	5
Apprch %	0	100	0	0		0	0	0	0		0	0	100	0		0	0	100	0		
Total %	0	60	0	0	60	0	0	0	0	0	0	0	20	0	20	0	0	20	0	20	

	NATIVIDAD RD Southbound				LA POSADA WAY Westbound				SHERWOOD DR Northbound				E BERNAL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	0	**1**	**1**	0	0	0	0	**2**
Total Volume	0	2	0	2	0	0	0	0	0	0	1	1	0	0	1	1	4
% App. Total	0	100	0		0	0	0		0	0	100		0	0	100		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.250	.250	.500

Traffic Data Service

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File Name : 38PM FINAL
Site Code : 00000038
Start Date : 1/14/2016
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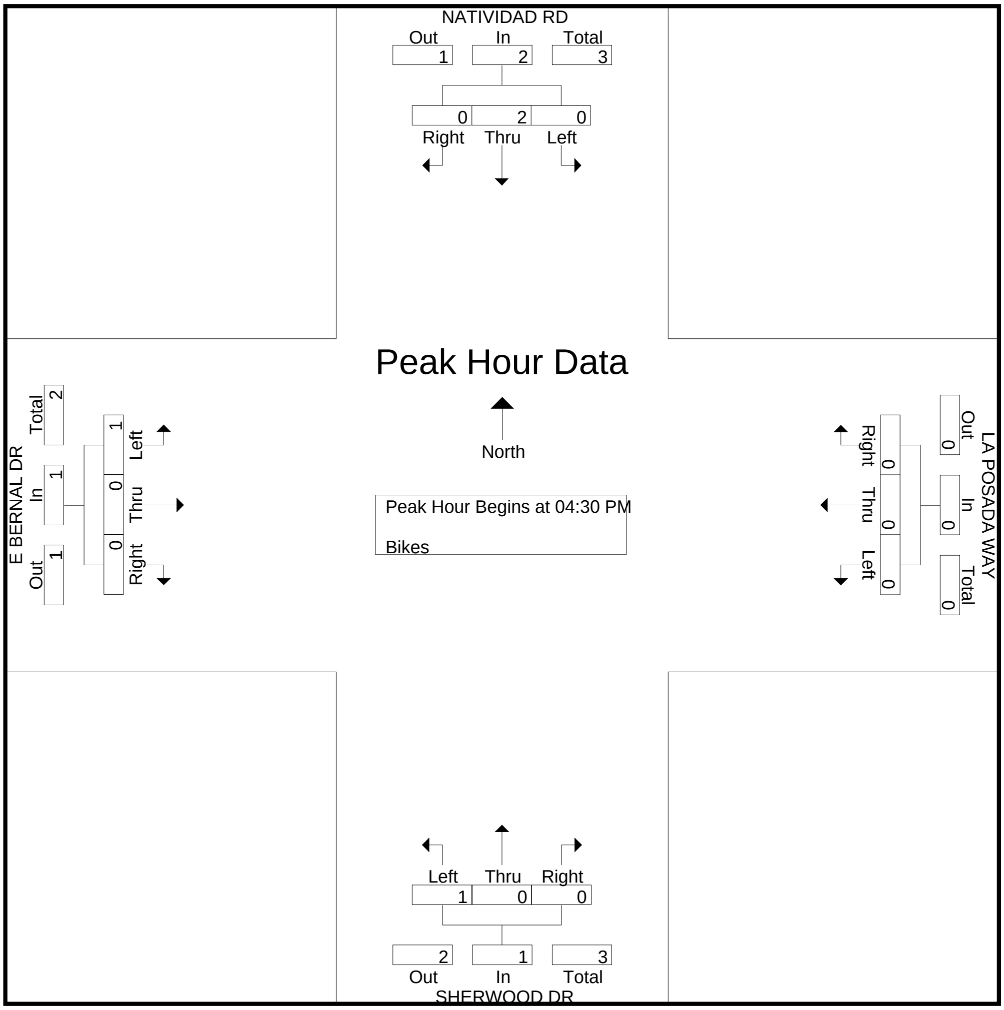

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 39PM FINAL
Site Code : 00000039
Start Date : 11/17/2015

Groups Printed- Bikes

	E LAUREL DR Southbound					N SANBORN RD Westbound					E LAUREL DR Northbound					N SANBORN RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	

	E LAUREL DR Southbound				N SANBORN RD Westbound				E LAUREL DR Northbound				N SANBORN RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

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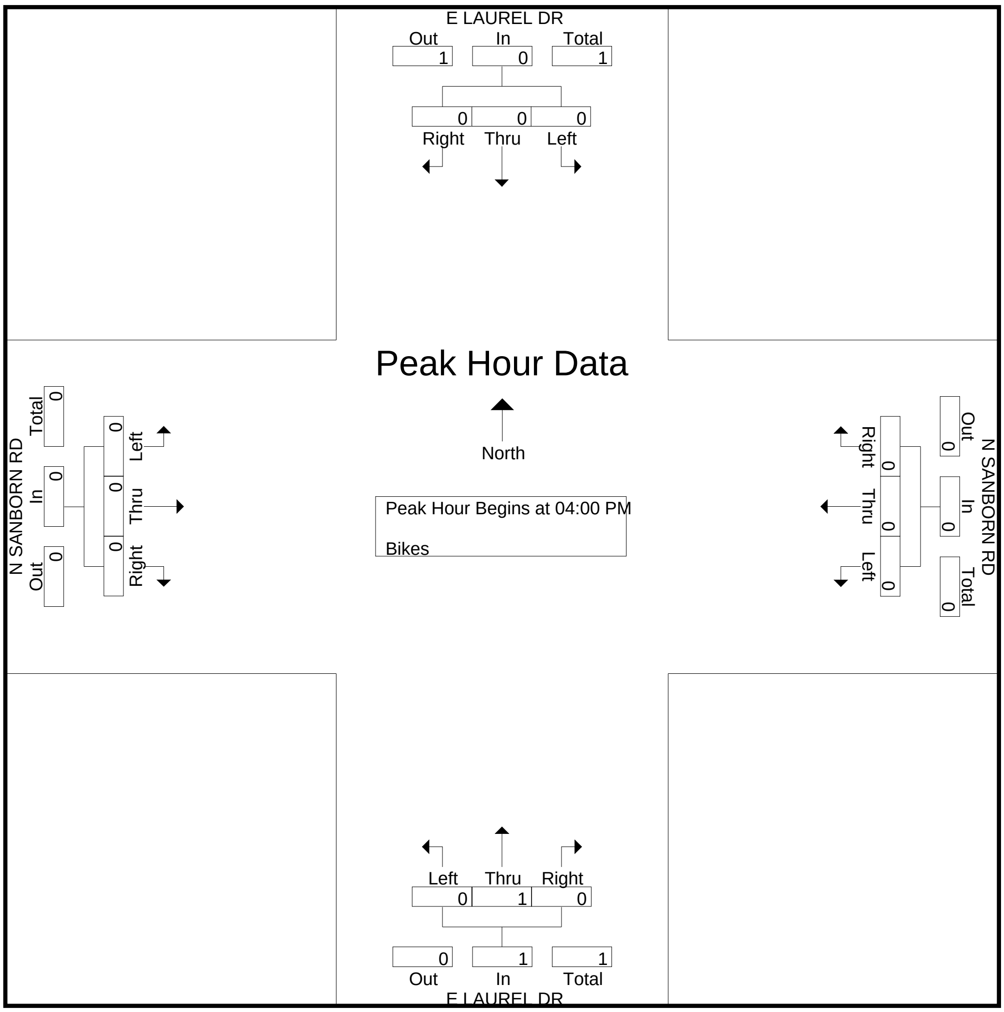
File Name : 39PM FINAL
Site Code : 00000039
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 40PM FINAL
Site Code : 00000040
Start Date : 11/17/2015

Groups Printed- Bikes

	E BORONDA RD Southbound					WILLIAMS RD Westbound					Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	E BORONDA RD Southbound				WILLIAMS RD Westbound				Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA

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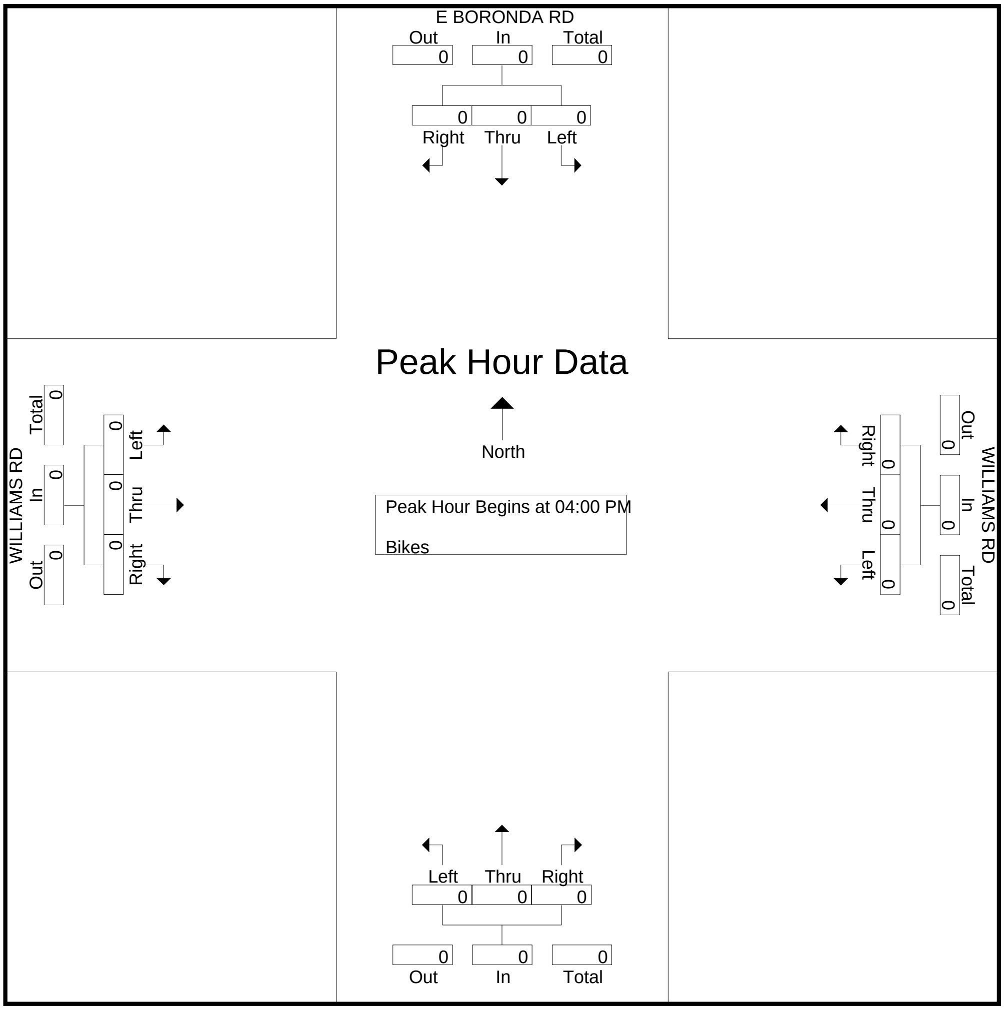
File Name : 40PM FINAL
Site Code : 00000040
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA

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File Name : 43PM FINAL
Site Code : 00000043
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	FREEDOM PKWY Southbound					WILLIAMS RD Westbound					FREEDOM PKWY Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	FREEDOM PKWY Southbound				WILLIAMS RD Westbound				FREEDOM PKWY Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 43PM FINAL
Site Code : 00000043
Start Date : 11/17/2015
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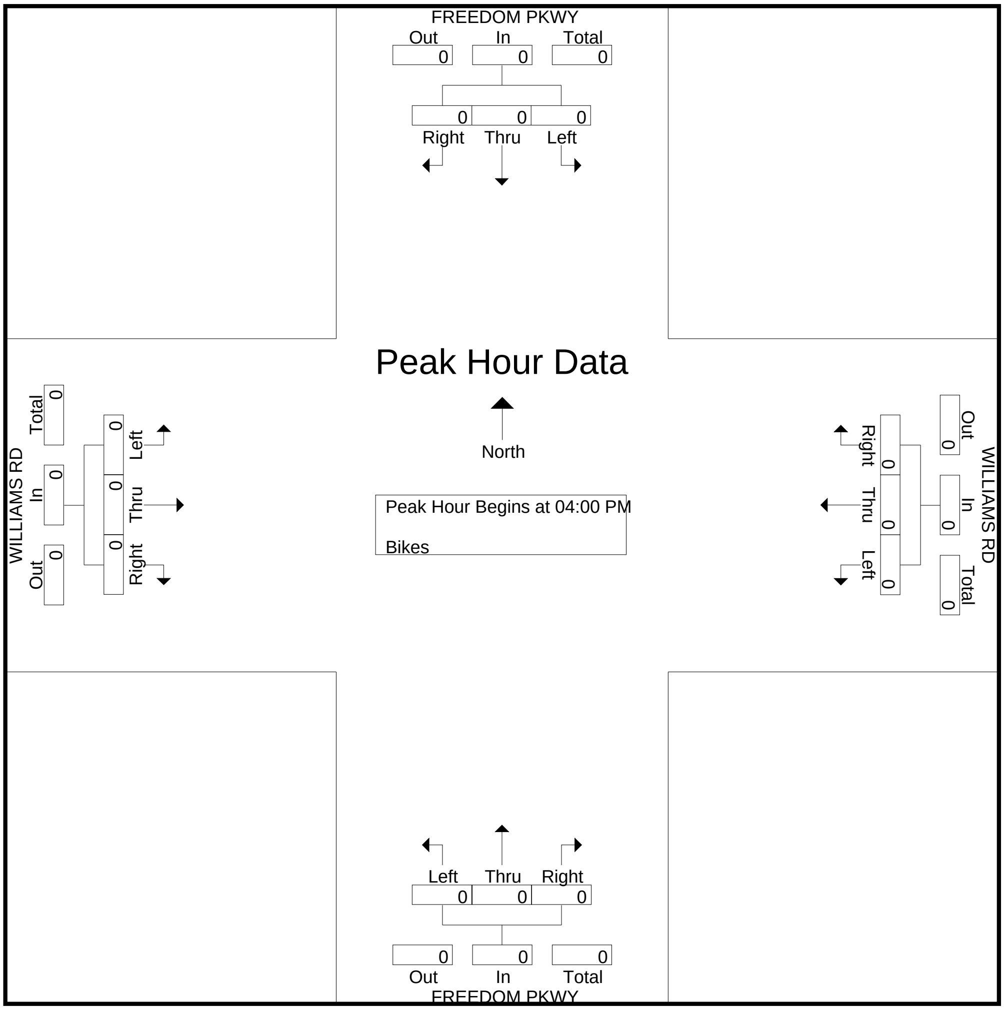

Traffic Data Service

Campbell, CA

(408) 377-2988

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File Name : 44PM FINAL
Site Code : 00000044
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	BARDIN WAY Southbound					WILLIAMS RD Westbound					BARDIN RD Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	BARDIN WAY Southbound				WILLIAMS RD Westbound				BARDIN RD Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

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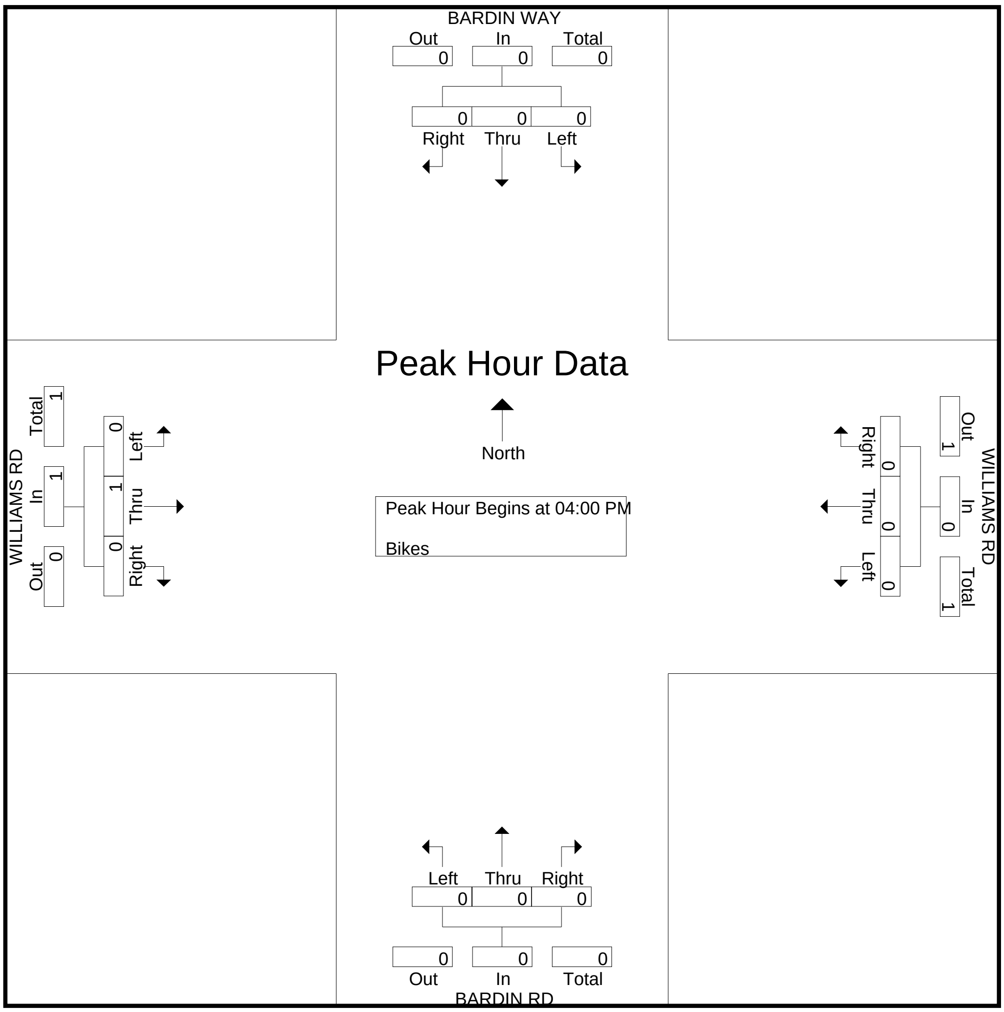
File Name : 44PM FINAL
Site Code : 00000044
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

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File Name : 41PM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 1

Groups Printed- Bikes

	E MARKET ST Southbound					WILLIAMS RD Westbound					E MARKET ST Northbound					WILLIAMS RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
Grand Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	3
Apprch %	0	0	0	0		0	0	0	0		100	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	33.3	0	0	0	33.3	0	66.7	0	0	66.7	

	E MARKET ST Southbound				WILLIAMS RD Westbound				E MARKET ST Northbound				WILLIAMS RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

Traffic Data Service

Campbell, CA
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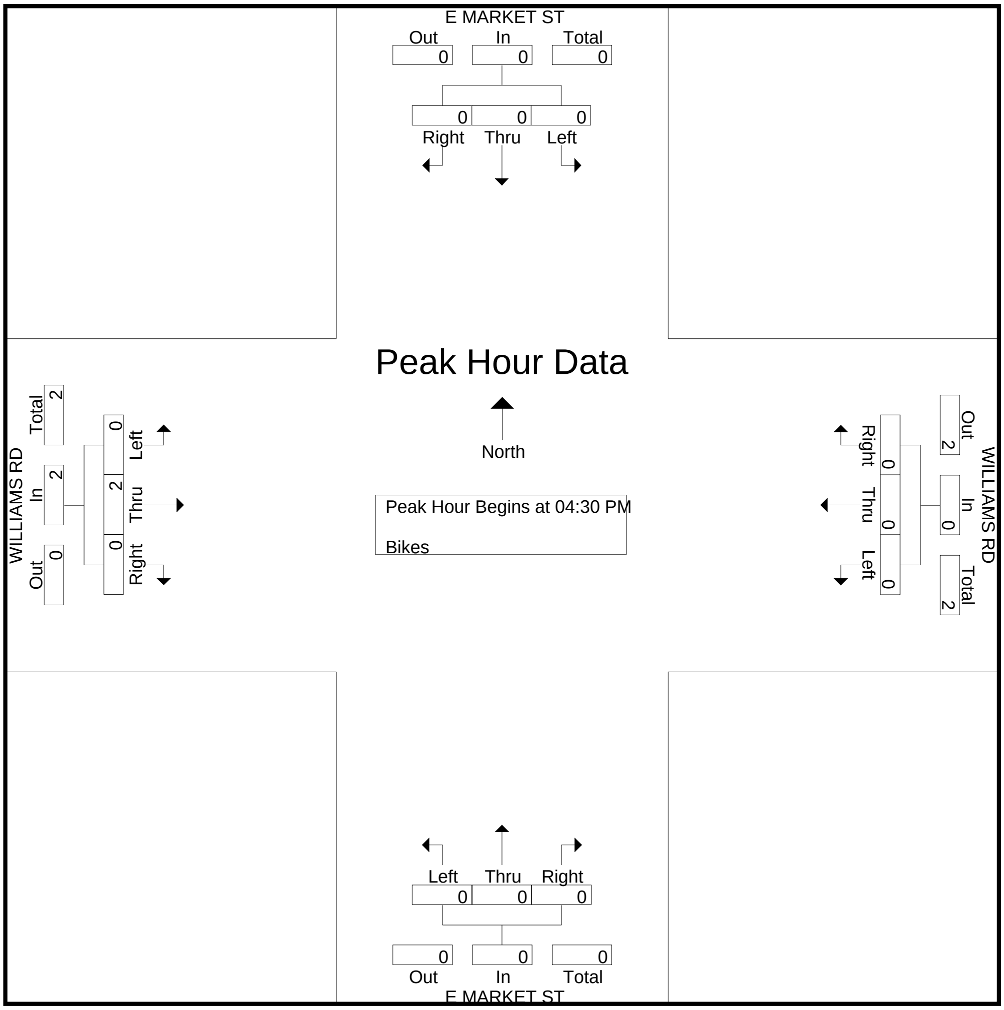
tdsbay@cs.com

File Name : 41PM FINAL
Site Code : 00000041
Start Date : 11/17/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 45PM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	WILLIAMS RD Southbound					E ALISAL ST Westbound					JOHN ST Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	

	WILLIAMS RD Southbound				E ALISAL ST Westbound				JOHN ST Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		100	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

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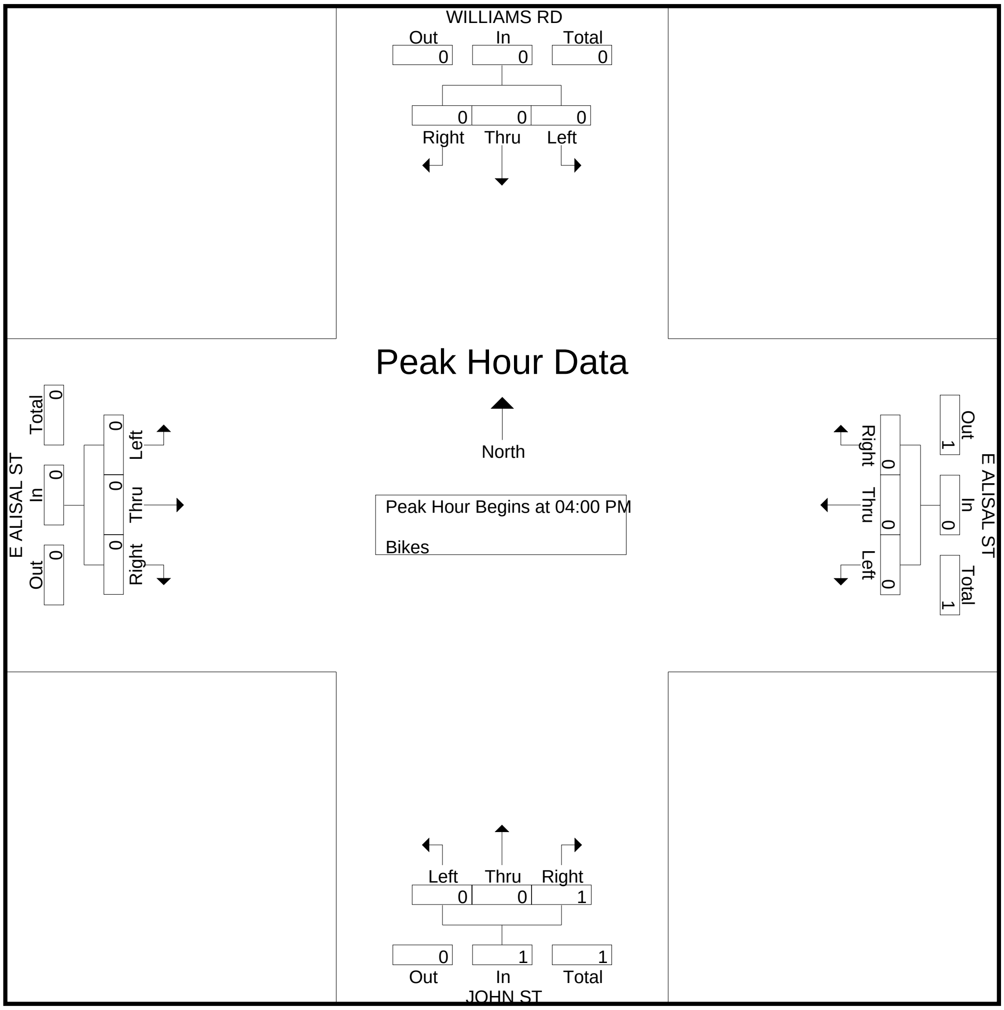
File Name : 45PM FINAL
Site Code : 00000045
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 46PM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	S SANBORN RD Southbound					JOHN ST Westbound					S SANBORN RD Northbound					JOHN ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Apprch %	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	

	S SANBORN RD Southbound				JOHN ST Westbound				S SANBORN RD Northbound				JOHN ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		100	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250

Traffic Data Service

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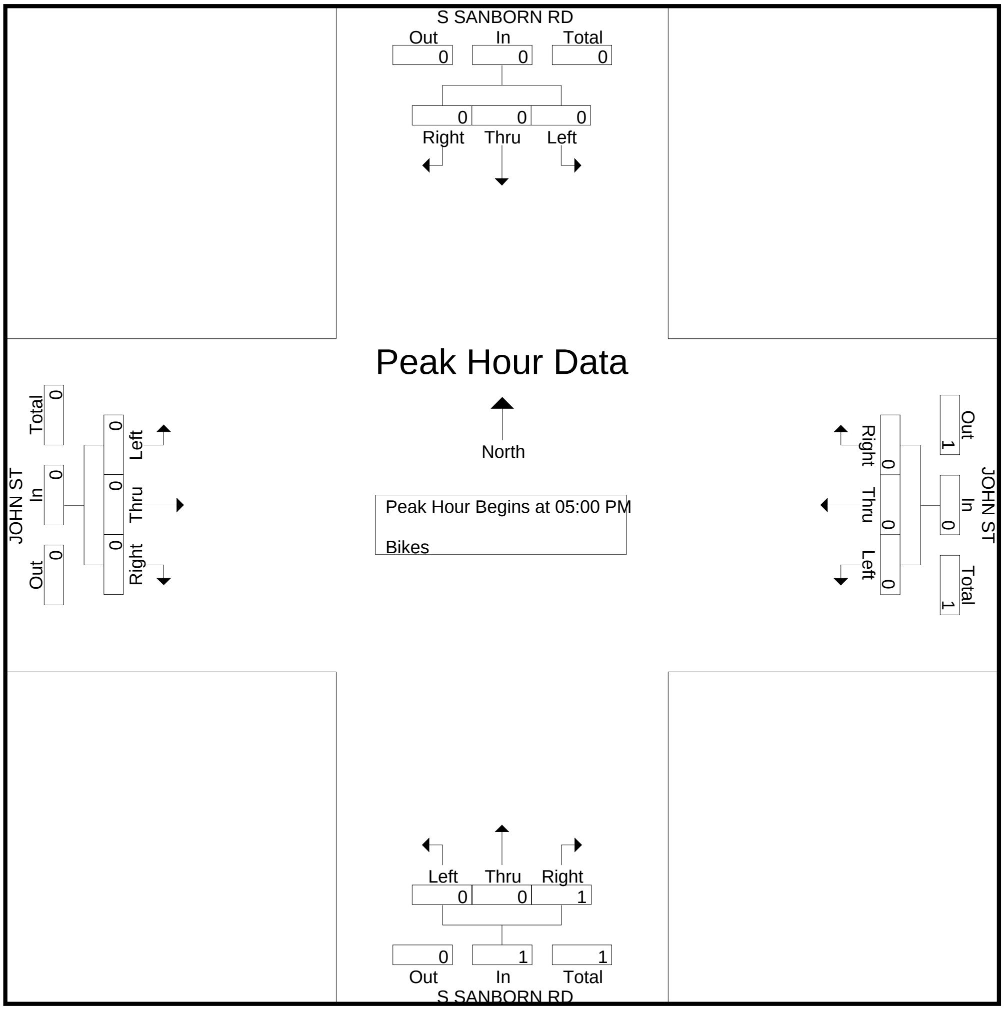
File Name : 46PM FINAL
Site Code : 00000046
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 47PM FINAL
Site Code : 00000047
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	BARDIN RD Southbound					DRIVEWAY Westbound					ALISAL RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	BARDIN RD Southbound				DRIVEWAY Westbound				ALISAL RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

Campbell, CA

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File Name : 47PM FINAL
Site Code : 00000047
Start Date : 1/14/2016
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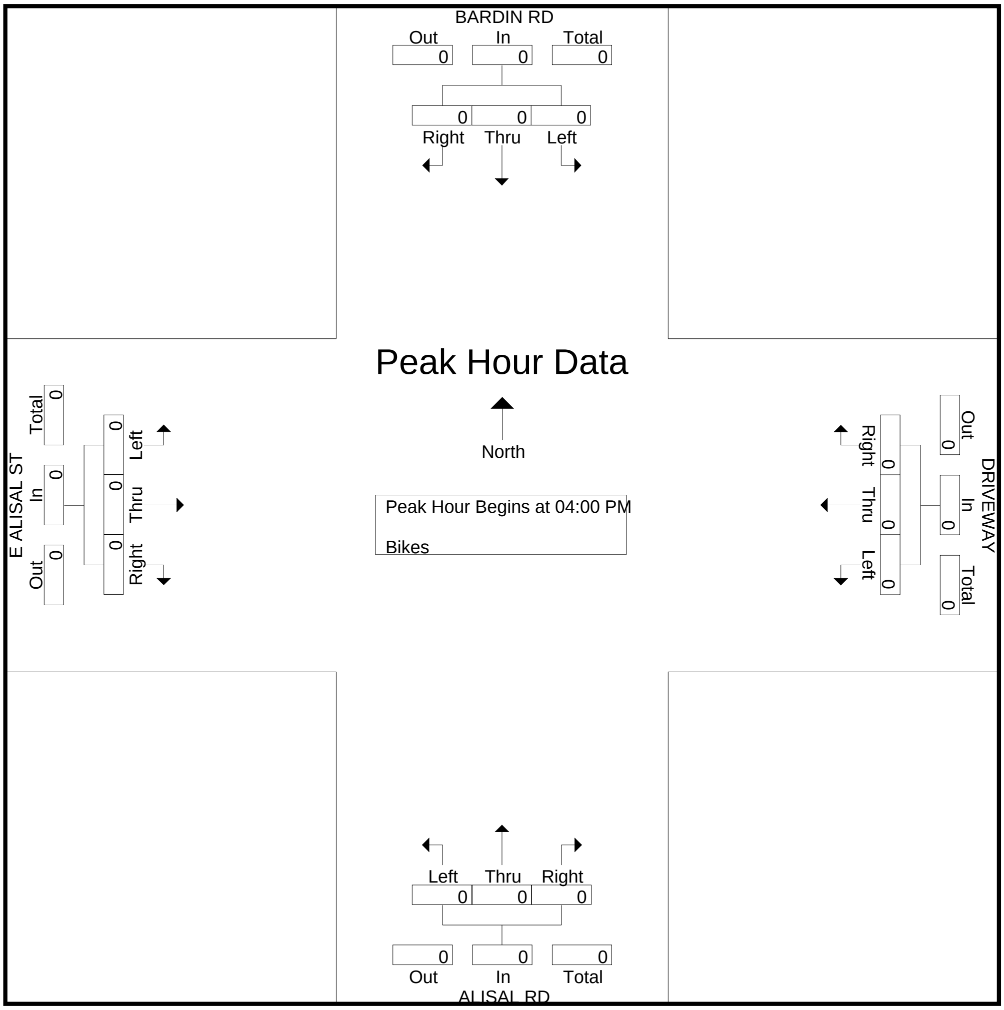

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 48PM FINAL
Site Code : 00000048
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	SKYWAY BLVD Southbound					Westbound					SKYWAY BLVD Northbound					AIRPORT BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Apprch %	100	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	SKYWAY BLVD Southbound				Westbound				SKYWAY BLVD Northbound				AIRPORT BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Total Volume	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA
(408) 377-2988
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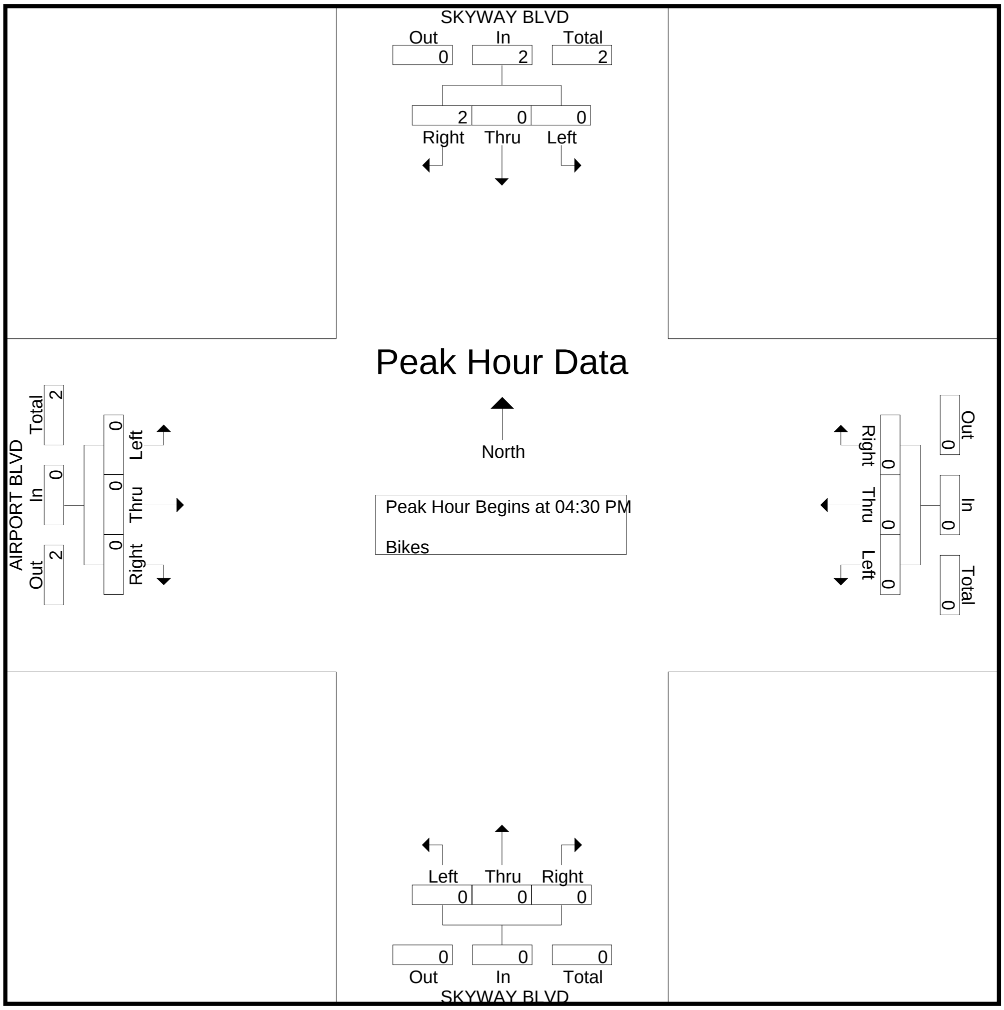
File Name : 48PM FINAL
Site Code : 00000048
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 49PM FINAL
Site Code : 00000049
Start Date : 11/18/2015

Groups Printed- Bikes

	N SANBORN RD Southbound					E ALISAL ST Westbound					S SANBORN RD Northbound					E ALISAL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	N SANBORN RD Southbound				E ALISAL ST Westbound				S SANBORN RD Northbound				E ALISAL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Traffic Data Service

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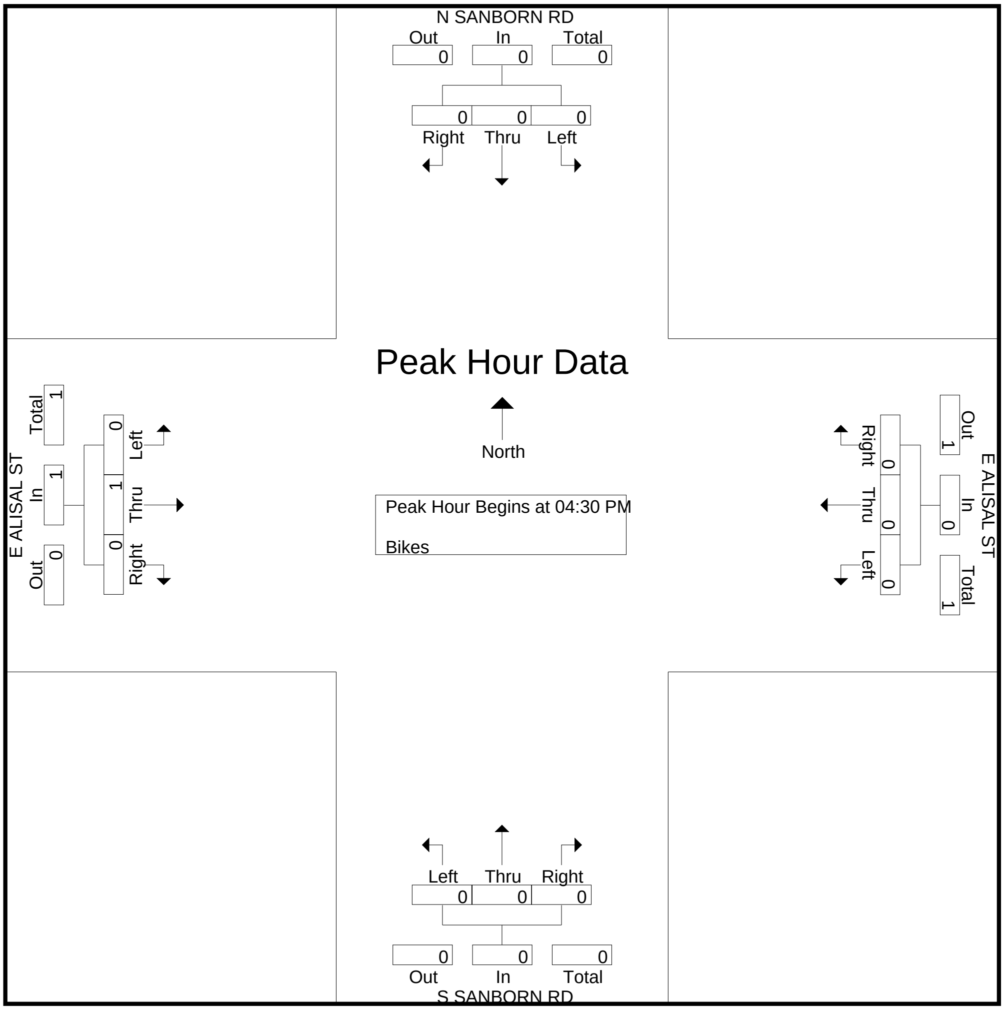
File Name : 49PM FINAL
Site Code : 00000049
Start Date : 11/18/2015
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 50PM FINAL
Site Code : 00000050
Start Date : 1/14/2016

Groups Printed- Bikes

	ADAMS ST Southbound					W LAUREL DR Westbound					Northbound					W LAUREL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

	ADAMS ST Southbound				W LAUREL DR Westbound				Northbound				W LAUREL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

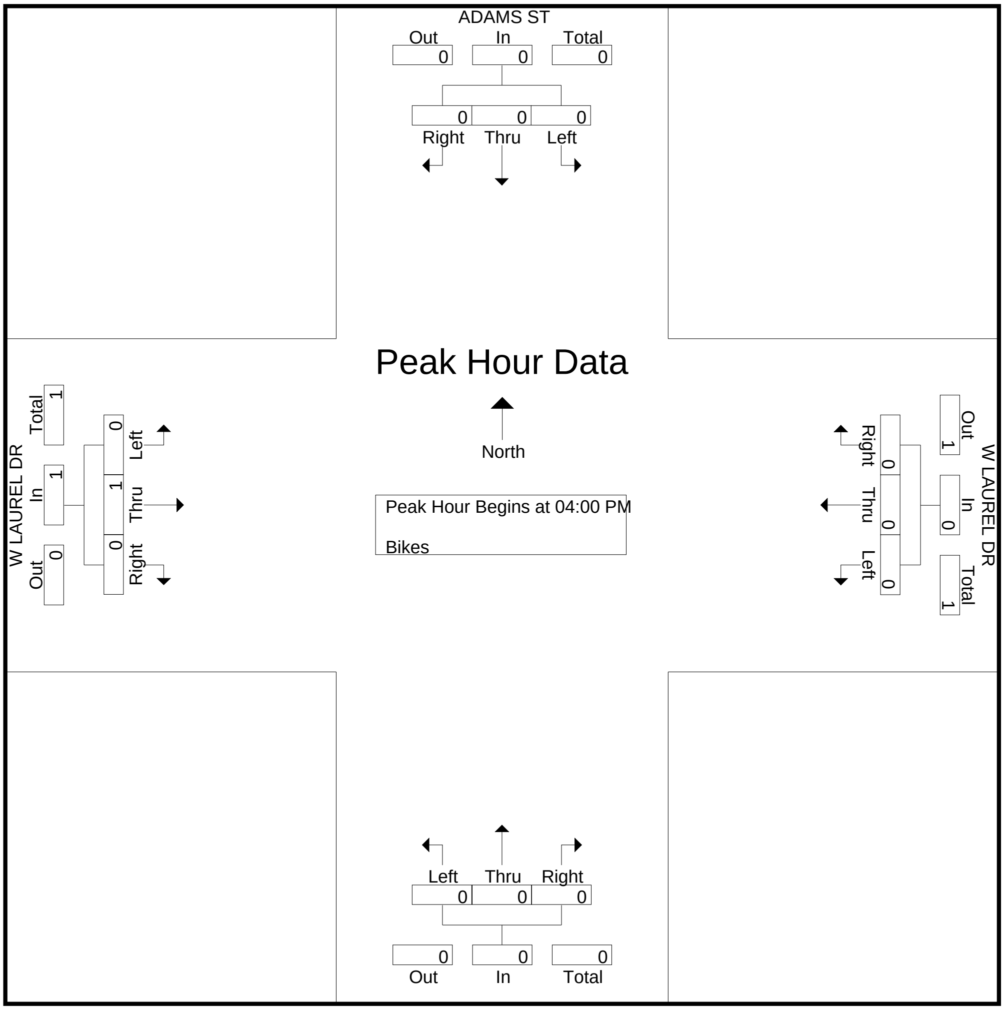
Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 50PM FINAL
Site Code : 00000050
Start Date : 1/14/2016
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 51PM FINAL
Site Code : 00000051
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	N DAVIS RD Southbound					W LAUREL DR Westbound					N DAVIS RD Northbound					CALLE DEL ADOBE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

	N DAVIS RD Southbound				W LAUREL DR Westbound				N DAVIS RD Northbound				CALLE DEL ADOBE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Traffic Data Service

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File Name : 51PM FINAL
Site Code : 00000051
Start Date : 1/14/2016
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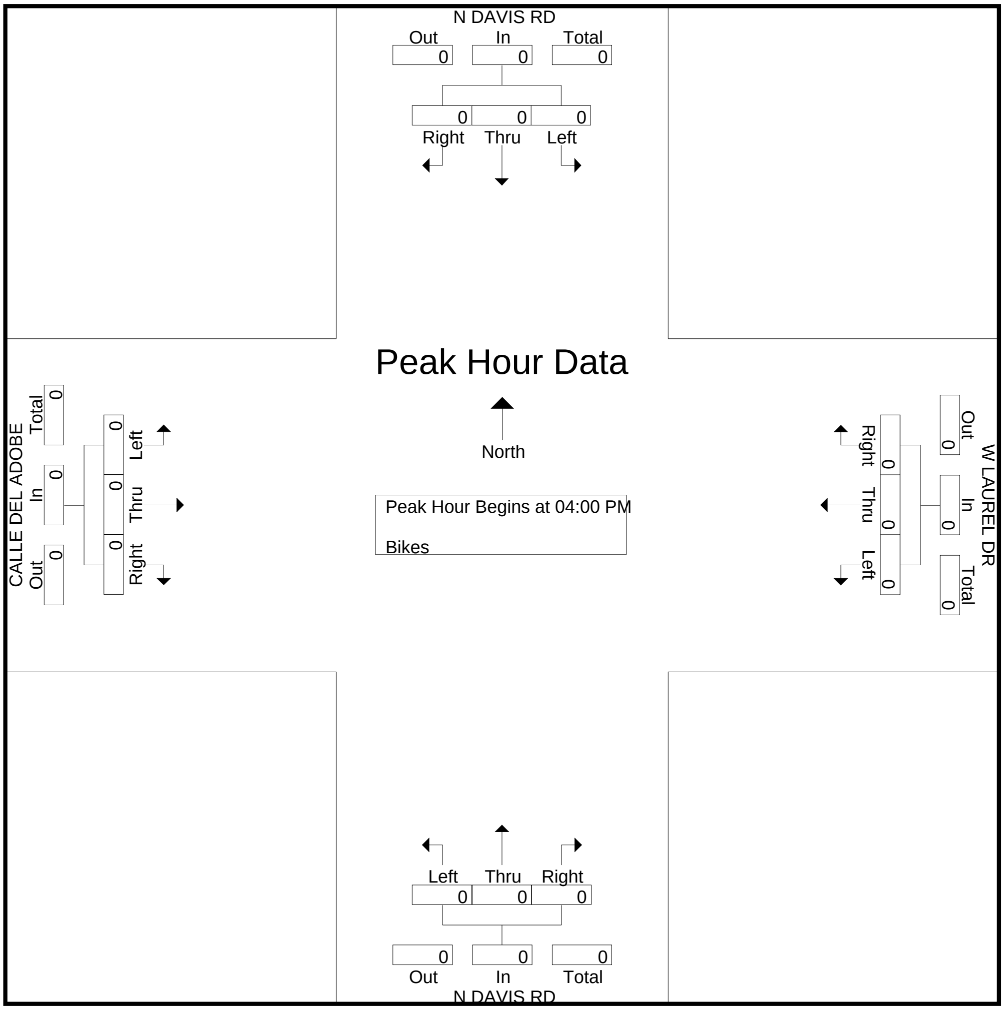

Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 52PM FINAL
Site Code : 00000052
Start Date : 1/14/2016

Groups Printed- Bikes

	SHERWOOD DR Southbound					E MARKET ST Westbound					E FRONT ST Northbound					MARKET WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	2	4
Grand Total	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3	0	0	0	3	6
Apprch %	0	0	0	0		0	100	0	0		0	100	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	16.7	0	0	16.7	0	33.3	0	0	33.3	50	0	0	0	50	

	SHERWOOD DR Southbound				E MARKET ST Westbound				E FRONT ST Northbound				MARKET WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
05:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	1	0	2	0	2	1	0	0	1	4
% App. Total	0	0	0		0	100	0		0	100	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.500	.000	.500	.250	.000	.000	.250	1.00

Traffic Data Service
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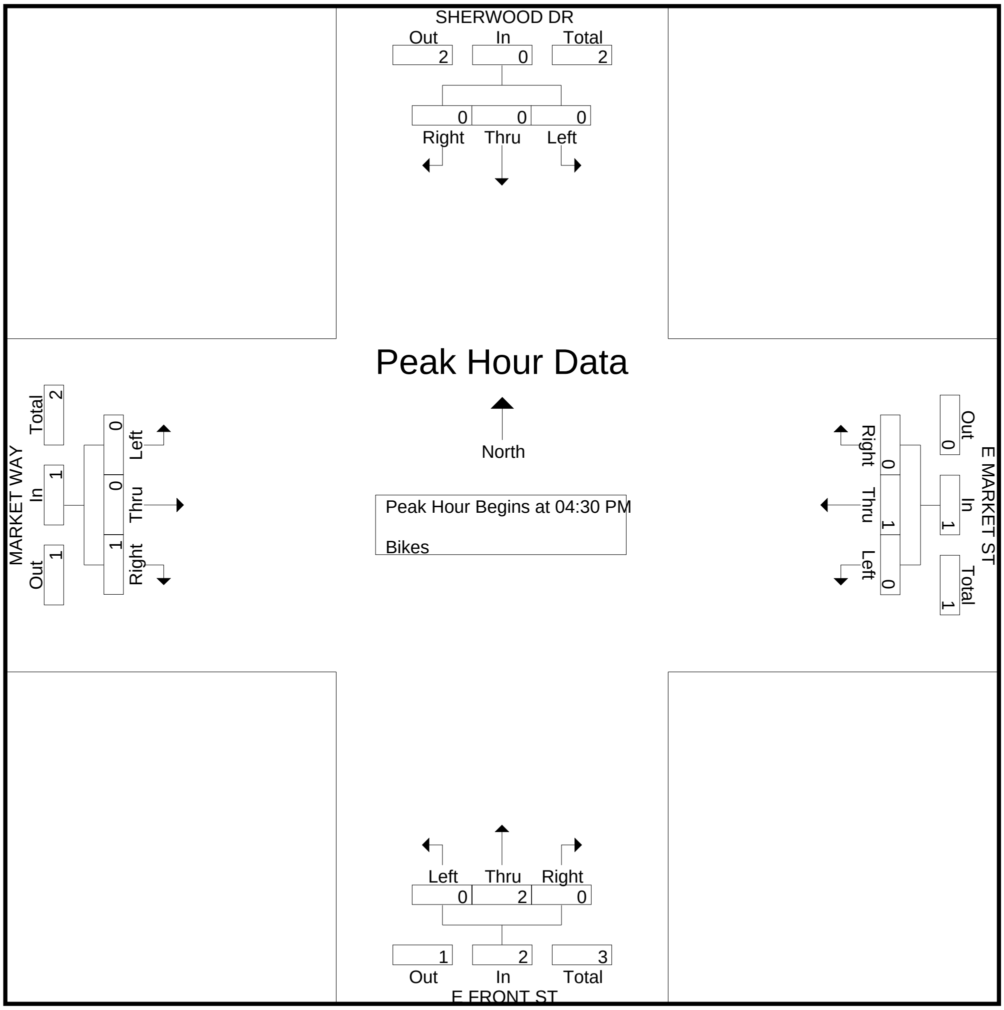
File Name : 52PM FINAL
Site Code : 00000052
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 53PM FINAL
Site Code : 00000053
Start Date : 1/14/2016
Page No : 1

Groups Printed- Bikes

	E FRONT ST Southbound					E FRONT ST Westbound					Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Apprch %	100	0	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	

	E FRONT ST Southbound				E FRONT ST Westbound				Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Traffic Data Service
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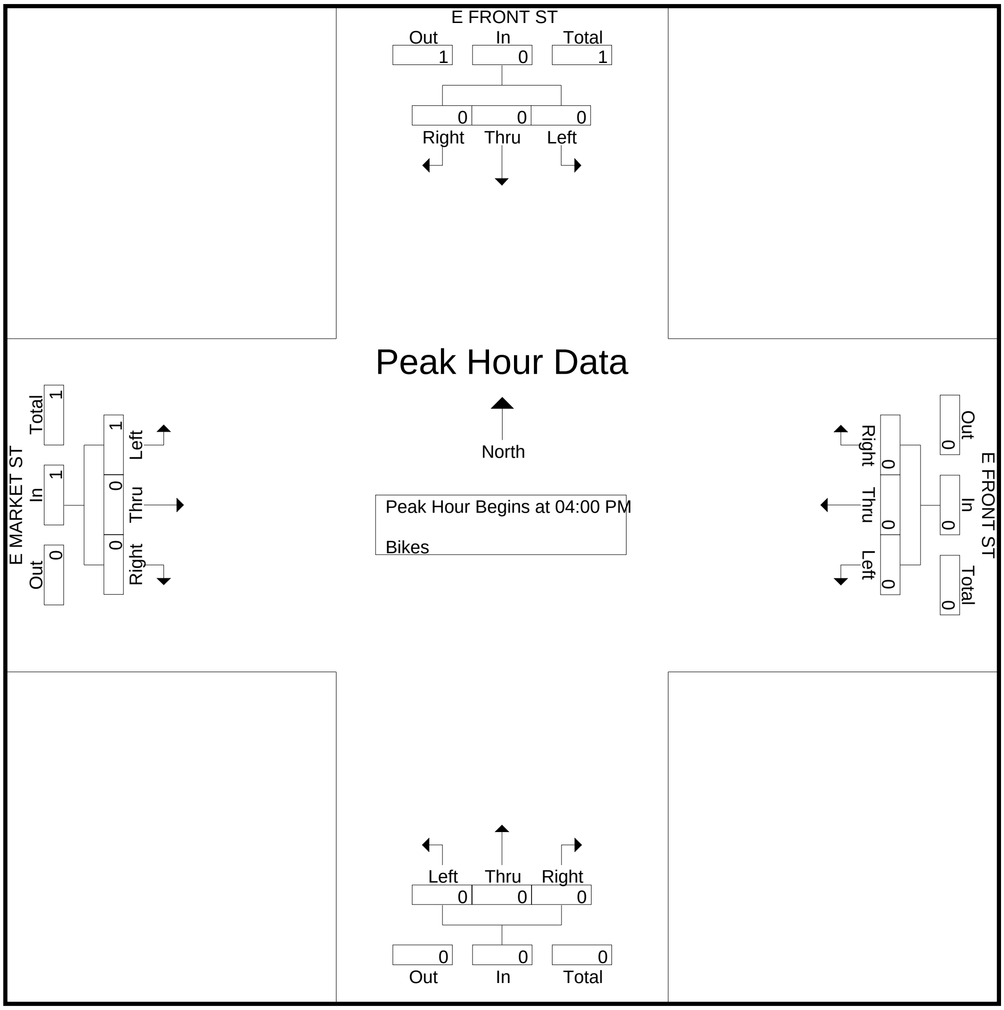
File Name : 53PM FINAL
Site Code : 00000053
Start Date : 1/14/2016
Page No : 2



Traffic Data Service

Campbell, CA

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File Name : 54PM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 1

Groups Printed- Bikes

	S DAVIS RD Southbound					W BLANCO RD Westbound					S DAVIS RD Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Grand Total	1	2	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
Apprch %	33.3	66.7	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	25	50	0	0	75	0	25	0	0	25	0	0	0	0	0	0	0	0	0	0	

	S DAVIS RD Southbound				W BLANCO RD Westbound				S DAVIS RD Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	**1**	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Total Volume	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
% App. Total	33.3	66.7	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.500	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375

Traffic Data Service

Campbell, CA
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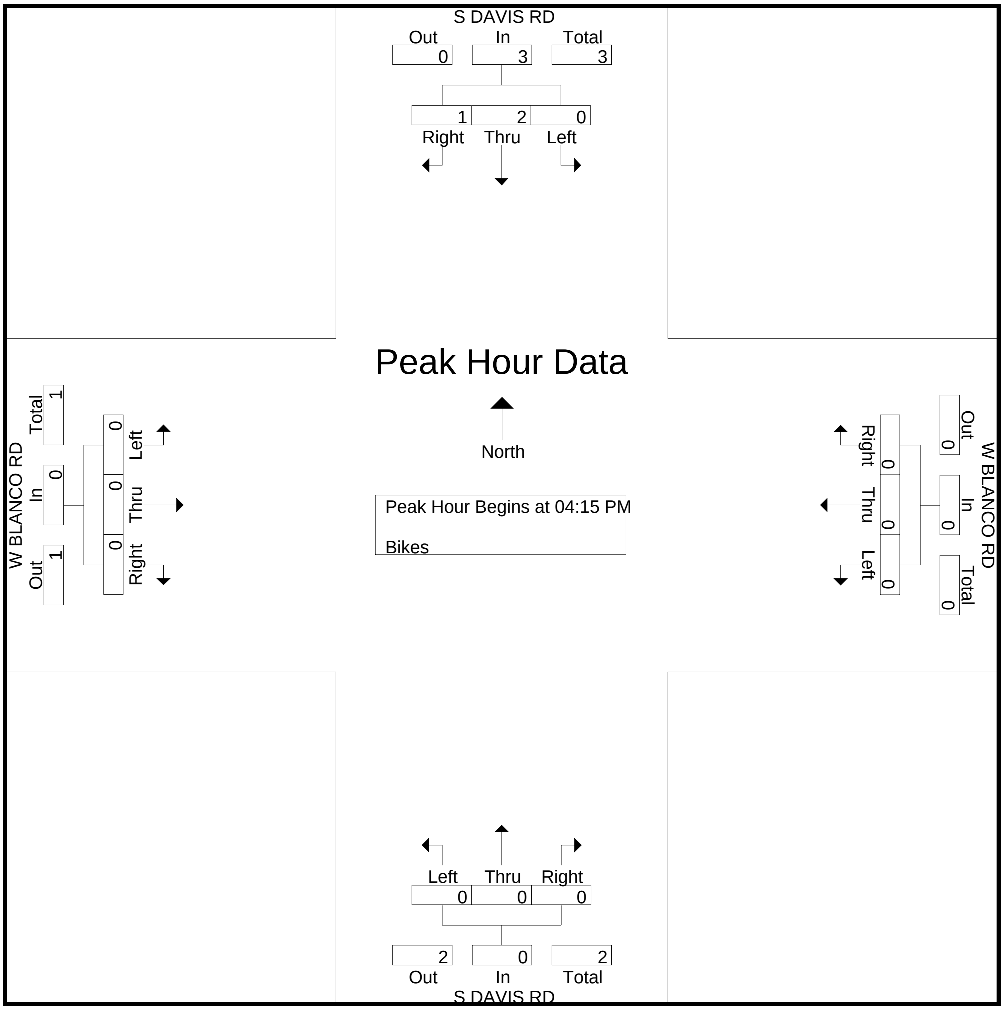
File Name : 54PM FINAL
Site Code : 00000054
Start Date : 11/19/2015
Page No : 2



Traffic Data Service
Campbell, CA
(408) 377-2988
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File Name : 55PM FINAL
Site Code : 00000055
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	MONTEREY ST Southbound					E MARKET ST Westbound					MONTEREY ST Northbound					E MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	0	0	2	0	2	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	5
Apprch %	0	0	100	0		0	100	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	40	0	40	0	40	0	0	40	0	20	0	0	20	0	0	0	0	0	

	MONTEREY ST Southbound				E MARKET ST Westbound				MONTEREY ST Northbound				E MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	**2**	**2**	0	1	0	1	0	0	0	0	0	0	0	0	**3**
Total Volume	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	4
% App. Total	0	0	100		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.333

Traffic Data Service

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File Name : 55PM FINAL
Site Code : 00000055
Start Date : 11/18/2015
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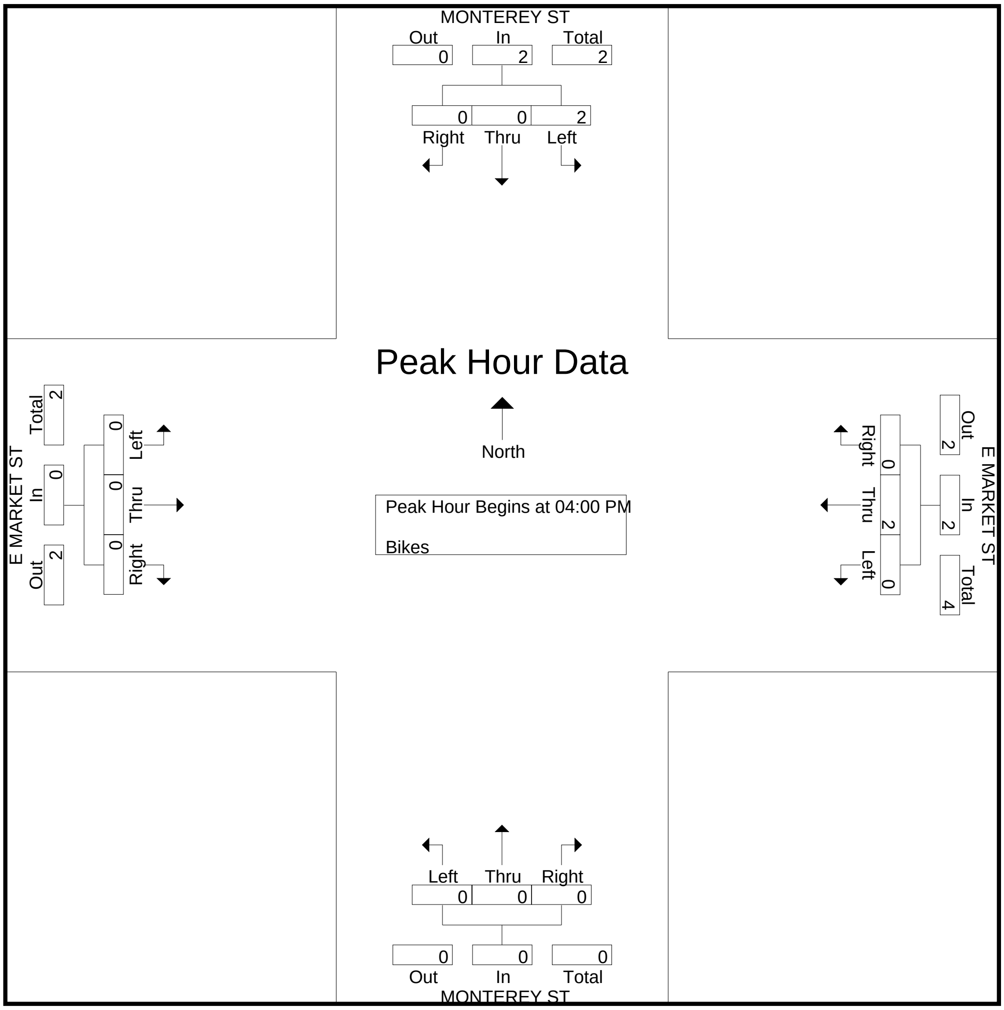

Traffic Data Service

Campbell, CA
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File Name : 56PM FINAL
Site Code : 00000056
Start Date : 11/18/2015
Page No : 1

Groups Printed- Bikes

	N MAIN ST Southbound					E MARKET ST Westbound					SALINAS ST Northbound					W MARKET ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	N MAIN ST Southbound				E MARKET ST Westbound				SALINAS ST Northbound				W MARKET ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

Traffic Data Service

Campbell, CA

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tdsbay@cs.com

File Name : 56PM FINAL
Site Code : 00000056
Start Date : 11/18/2015
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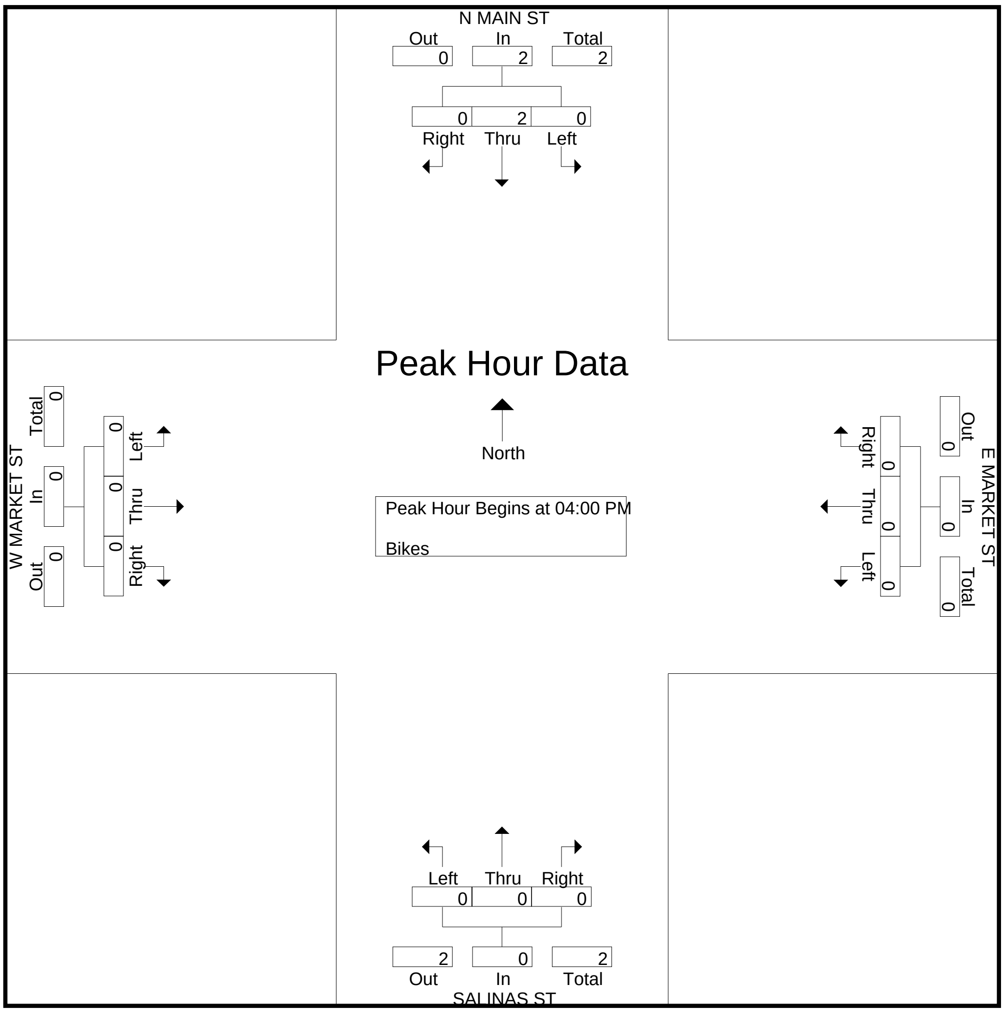

Traffic Data Service

Campbell, CA
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File Name : 57PM FINAL
Site Code : 00000057
Start Date : 1/14/2016
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Groups Printed- Bikes

	SR-68 Southbound					E BLANCO RD Westbound					SR-68 Northbound					W BLANCO RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Apprch %	0	100	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	0	50	0	0	50	0	50	0	0	50	0	0	0	0	0	0	0	0	0	0	

	SR-68 Southbound				E BLANCO RD Westbound				SR-68 Northbound				W BLANCO RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**2**
Total Volume	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Traffic Data Service

Campbell, CA

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File Name : 57PM FINAL
Site Code : 00000057
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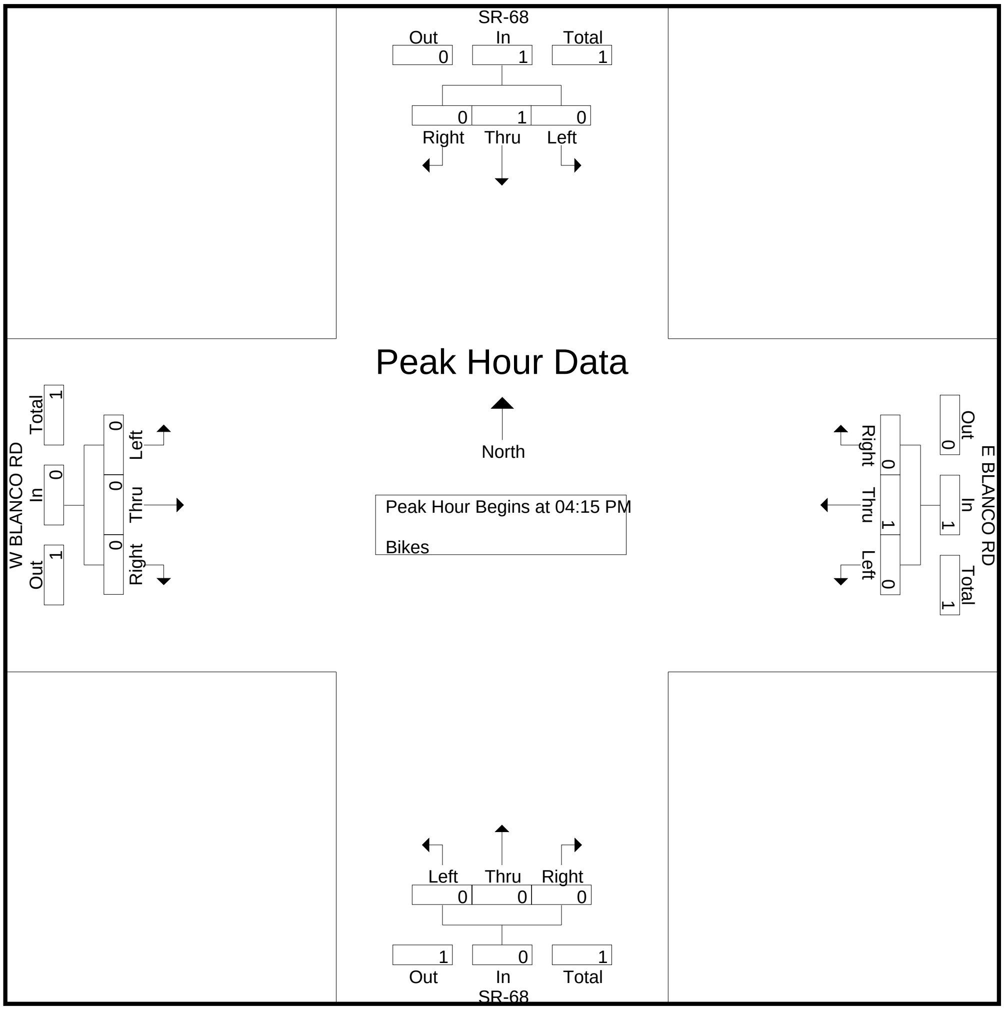

APPENDIX D: SYNCHRO INTERSECTION LEVEL OF SERVICE REPORTS

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	53	56	141	25	0	0	0	0	94	2	13
Future Vol, veh/h	0	53	56	141	25	0	0	0	0	94	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	75	188	33	0	0	0	0	125	3	17

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	71	0	0				480	480	33
Stage 1	-	-	-	-	-	-				409	409	-
Stage 2	-	-	-	-	-	-				71	71	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1529	-	0				545	485	1041
Stage 1	0	-	-	-	-	0				671	596	-
Stage 2	0	-	-	-	-	0				952	836	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1529	-	-				478	0	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-				478	0	-
Stage 1	-	-	-	-	-	-				588	0	-
Stage 2	-	-	-	-	-	-				952	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.5	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1529	-	478	1041
HCM Lane V/C Ratio	-	-	0.123	-	0.262	0.019
HCM Control Delay (s)	-	-	7.7	-	15.2	8.5
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	-	1	0.1

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	107	0	0	83	175	85	1	56	0	0	0
Future Vol, veh/h	41	107	0	0	83	175	85	1	56	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	139	0	0	108	227	110	1	73	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	108	0	-	-	-	0	353	353	139
Stage 1	-	-	-	-	-	-	245	245	-
Stage 2	-	-	-	-	-	-	108	108	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	0	0	-	-	645	572	909
Stage 1	-	-	0	0	-	-	796	703	-
Stage 2	-	-	0	0	-	-	916	806	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1483	-	-	-	-	-	622	0	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	622	0	-
Stage 1	-	-	-	-	-	-	768	0	-
Stage 2	-	-	-	-	-	-	916	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.1	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	622	909	1483	-	-	-
HCM Lane V/C Ratio	0.177	0.081	0.036	-	-	-
HCM Control Delay (s)	12	9.3	7.5	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.6	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	93	0	0	147	161	2	1	109	0	0	0
Future Vol, veh/h	4	93	0	0	147	161	2	1	109	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	104	0	0	165	181	2	1	122	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	7.7	8.9	8.6
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	67%	0%	100%	0%	0%	0%	0%
Vol Thru, %	33%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	109	4	47	47	147	161
LT Vol	2	0	4	0	0	0	0
Through Vol	1	0	0	47	47	147	0
RT Vol	0	109	0	0	0	0	161
Lane Flow Rate	3	122	4	52	52	165	181
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.006	0.167	0.008	0.08	0.055	0.233	0.22
Departure Headway (Hd)	5.945	4.91	6.022	5.519	3.775	5.088	4.386
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	601	729	593	648	944	705	818
Service Time	3.686	2.652	3.767	3.263	1.518	2.826	2.122
HCM Lane V/C Ratio	0.005	0.167	0.007	0.08	0.055	0.234	0.221
HCM Control Delay	8.7	8.6	8.8	8.7	6.7	9.4	8.4
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.6	0	0.3	0.2	0.9	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	171	0	0	0	242	43	0	0	76	66
Future Volume (veh/h)	34	0	171	0	0	0	242	43	0	0	76	66
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	38	0	23				269	48	0	0	84	17
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	60	0	53				358	1108	0	0	387	328
Arrive On Green	0.03	0.00	0.03				0.20	0.59	0.00	0.00	0.21	0.21
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1580
Grp Volume(v), veh/h	38	0	23				269	48	0	0	84	17
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1580
Q Serve(g_s), s	0.5	0.0	0.3				3.1	0.2	0.0	0.0	0.8	0.2
Cycle Q Clear(g_c), s	0.5	0.0	0.3				3.1	0.2	0.0	0.0	0.8	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	60	0	53				358	1108	0	0	387	328
V/C Ratio(X)	0.64	0.00	0.43				0.75	0.04	0.00	0.00	0.22	0.05
Avail Cap(c_a), veh/h	1977	0	1764				1664	5215	0	0	5215	4422
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	0.0	10.2				8.1	1.8	0.0	0.0	7.1	6.8
Incr Delay (d2), s/veh	4.2	0.0	2.0				1.2	0.0	0.0	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0				1.6	0.1	0.0	0.0	0.4	0.1
LnGrp Delay(d),s/veh	14.4	0.0	12.3				9.3	1.9	0.0	0.0	7.4	6.9
LnGrp LOS	B		B				A	A			A	A
Approach Vol, veh/h		61						317			101	
Approach Delay, s/veh		13.6						8.2			7.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		16.8		4.7	8.3	8.5		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.2		2.5	5.1	2.8		
Green Ext Time (p_c), s		1.3		0.0	0.1	1.3		

Intersection Summary		
HCM 2010 Ctrl Delay		8.7
HCM 2010 LOS		A

Notes

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	199	6	0	1	8	2	8	15	1	4	9	150
Future Vol, veh/h	199	6	0	1	8	2	8	15	1	4	9	150
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	255	8	0	1	10	3	10	19	1	5	12	192
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	7.8	8.1	8.4
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	97%	9%	2%
Vol Thru, %	62%	3%	73%	6%
Vol Right, %	4%	0%	18%	92%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	205	11	163
LT Vol	8	199	1	4
Through Vol	15	6	8	9
RT Vol	1	0	2	150
Lane Flow Rate	31	263	14	209
Geometry Grp	1	1	1	1
Degree of Util (X)	0.042	0.34	0.018	0.238
Departure Headway (Hd)	4.884	4.662	4.677	4.107
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	773	764	876
Service Time	2.911	2.689	2.712	2.123
HCM Lane V/C Ratio	0.042	0.34	0.018	0.239
HCM Control Delay	8.1	10.1	7.8	8.4
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.5	0.1	0.9

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	92	18	119	91	7	20	2	153	3	1	2
Future Vol, veh/h	5	92	18	119	91	7	20	2	153	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	115	23	149	114	9	25	3	191	4	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	138	0	0	557	559	126	652	566	118
Stage 1	-	-	-	-	-	-	139	139	-	416	416	-
Stage 2	-	-	-	-	-	-	418	420	-	236	150	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1464	-	-	1446	-	-	441	438	924	381	434	934
Stage 1	-	-	-	-	-	-	864	782	-	614	592	-
Stage 2	-	-	-	-	-	-	612	589	-	767	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1446	-	-	400	388	924	274	384	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	400	388	-	274	384	-
Stage 1	-	-	-	-	-	-	861	779	-	612	526	-
Stage 2	-	-	-	-	-	-	541	524	-	604	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	4.3	11.3	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	793	1464	-	-	1446	-	-	632
HCM Lane V/C Ratio	0.276	0.004	-	-	0.103	-	-	0.006
HCM Control Delay (s)	11.3	7.5	0	-	7.8	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	0	164	21	0	154
Future Vol, veh/h	19	0	164	21	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	0	228	29	0	214

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	456	242	0	0	257	0
Stage 1	242	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	562	797	-	-	1308	-
Stage 1	798	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	562	797	-	-	1308	-
Mov Cap-2 Maneuver	562	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	562	1308	-
HCM Lane V/C Ratio	-	-	0.047	-	-
HCM Control Delay (s)	-	-	11.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	71	165	147	159	183	181	68	133	111	57	76
Future Volume (veh/h)	24	71	165	147	159	183	181	68	133	111	57	76
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	85	13	175	189	36	215	81	4	132	68	0
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	541	242	448	657	294	605	861	42	403	672	301
Arrive On Green	0.08	0.15	0.15	0.13	0.19	0.19	0.18	0.25	0.23	0.12	0.19	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3434	168	3442	3539	1583
Grp Volume(v), veh/h	29	85	13	175	189	36	215	41	44	132	68	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1833	1721	1770	1583
Q Serve(g_s), s	0.4	1.0	0.3	2.1	2.1	0.9	2.5	0.8	0.8	1.6	0.7	0.0
Cycle Q Clear(g_c), s	0.4	1.0	0.3	2.1	2.1	0.9	2.5	0.8	0.8	1.6	0.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	275	541	242	448	657	294	605	443	459	403	672	301
V/C Ratio(X)	0.11	0.16	0.05	0.39	0.29	0.12	0.36	0.09	0.09	0.33	0.10	0.00
Avail Cap(c_a), veh/h	1615	4736	2119	1615	4674	2091	1615	2349	2433	1600	4690	2098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.6	16.8	16.6	18.3	16.0	15.5	16.6	13.2	13.2	18.6	15.3	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.1	1.0	1.0	0.4	1.2	0.4	0.4	0.8	0.4	0.0
LnGrp Delay(d),s/veh	19.6	17.0	16.7	18.5	16.2	15.7	16.7	13.3	13.3	18.7	15.4	0.0
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	
Approach Vol, veh/h		127			400			300			200	
Approach Delay, s/veh		17.6			17.1			15.8			17.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	11.0	12.0	12.8	7.7	13.3	9.4	15.5
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60
Max Q Clear Time (g_c+I1), s	4.1	3.0	4.5	2.7	2.4	4.1	3.6	2.8
Green Ext Time (p_c), s	0.1	1.6	0.1	1.5	0.0	1.6	0.1	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	277	49	23	310	91	64	110	45	55	98	17
Future Volume (veh/h)	12	277	49	23	310	91	64	110	45	55	98	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.93		0.90	0.93		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	360	16	30	403	106	83	143	6	71	127	18
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	748	618	31	587	154	254	396	490	221	359	44
Arrive On Green	0.01	0.40	0.40	0.02	0.41	0.40	0.34	0.34	0.34	0.35	0.35	0.34
Sat Flow, veh/h	1774	1863	1540	1774	1422	374	466	1150	1423	368	1013	126
Grp Volume(v), veh/h	16	360	16	30	0	509	226	0	6	216	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1774	0	1796	1617	0	1423	1507	0	0
Q Serve(g_s), s	0.3	7.6	0.3	0.9	0.0	12.3	0.0	0.0	0.1	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.3	7.6	0.3	0.9	0.0	12.3	4.9	0.0	0.1	5.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.21	0.37		1.00	0.33		0.08
Lane Grp Cap(c), veh/h	11	748	618	31	0	741	650	0	490	624	0	0
V/C Ratio(X)	1.41	0.48	0.03	0.97	0.00	0.69	0.35	0.00	0.01	0.35	0.00	0.00
Avail Cap(c_a), veh/h	654	1430	1182	654	0	1379	715	0	551	1035	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.3	11.7	9.6	26.0	0.0	12.8	12.9	0.0	11.4	12.7	0.0	0.0
Incr Delay (d2), s/veh	221.5	0.6	0.0	37.9	0.0	1.4	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	43.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.0	0.1	0.8	0.0	6.4	2.5	0.0	0.1	2.4	0.0	0.0
LnGrp Delay(d),s/veh	291.6	12.3	9.6	63.9	0.0	14.2	13.1	0.0	11.4	12.8	0.0	0.0
LnGrp LOS	F	B	A	E		B	B		B	B		
Approach Vol, veh/h		392			539			232			216	
Approach Delay, s/veh		23.6			17.0			13.0			12.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	25.2		22.7	4.3	25.8		22.7
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.0	40.0		32.1	20.0	40.0		* 20
Max Q Clear Time (g_c+I1), s	2.3	9.6		7.8	2.3	14.3		6.9
Green Ext Time (p_c), s	0.0	7.3		1.2	0.0	6.9		1.0

Intersection Summary		
HCM 2010 Ctrl Delay		17.5
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	24	3	263	3	48	3	122	292	64	190	4
Future Vol, veh/h	19	24	3	263	3	48	3	122	292	64	190	4
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	30	4	325	4	59	4	151	360	79	235	5
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	12.2	22.5	16.3	13.7
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	41%	100%	0%	40%	0%
Vol Thru, %	98%	0%	52%	0%	6%	60%	96%
Vol Right, %	0%	100%	7%	0%	94%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	292	46	263	51	159	99
LT Vol	3	0	19	263	0	64	0
Through Vol	122	0	24	0	3	95	95
RT Vol	0	292	3	0	48	0	4
Lane Flow Rate	154	360	57	325	63	196	122
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.292	0.61	0.126	0.681	0.111	0.396	0.239
Departure Headway (Hd)	6.819	6.091	7.998	7.549	6.368	7.261	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	528	591	448	481	566	497	511
Service Time	4.557	3.829	6.053	5.249	4.068	5.003	4.767
HCM Lane V/C Ratio	0.292	0.609	0.127	0.676	0.111	0.394	0.239
HCM Control Delay	12.4	17.9	12.2	24.9	9.9	14.7	12
HCM Lane LOS	B	C	B	C	A	B	B
HCM 95th-tile Q	1.2	4.1	0.4	5.1	0.4	1.9	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	0	159	0	0	0	167	302	0	1	452	252
Future Volume (veh/h)	263	0	159	0	0	0	167	302	0	1	452	252
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1863
Adj Flow Rate, veh/h	302	0	45				192	347	0	1	520	105
Adj No. of Lanes	1	0	1				1	1	0	1	1	1
Peak Hour Factor	0.87	0.92	0.87				0.87	0.87	0.92	0.92	0.87	0.87
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	344	0	307				245	1112	0	3	840	714
Arrive On Green	0.19	0.00	0.19				0.14	0.60	0.00	0.00	0.45	0.45
Sat Flow, veh/h	1774	0	1583				1774	1863	0	1774	1863	1583
Grp Volume(v), veh/h	302	0	45				192	347	0	1	520	105
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	1774	1863	1583
Q Serve(g_s), s	9.1	0.0	1.3				5.8	5.1	0.0	0.0	11.8	2.2
Cycle Q Clear(g_c), s	9.1	0.0	1.3				5.8	5.1	0.0	0.0	11.8	2.2
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	307				245	1112	0	3	840	714
V/C Ratio(X)	0.88	0.00	0.15				0.78	0.31	0.00	0.31	0.62	0.15
Avail Cap(c_a), veh/h	850	0	758				625	2030	0	625	2030	1726
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	18.5				23.0	5.5	0.0	27.6	11.6	8.9
Incr Delay (d2), s/veh	2.9	0.0	0.1				2.1	0.5	0.0	19.2	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	1.3				3.0	2.8	0.0	0.0	6.1	1.0
LnGrp Delay(d),s/veh	24.5	0.0	18.6				25.1	6.0	0.0	46.8	12.4	9.0
LnGrp LOS	C		B				C	A		D	B	A
Approach Vol, veh/h		347						539			626	
Approach Delay, s/veh		23.7						12.8			11.9	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	3.6	37.0		14.7	11.6	29.0		
Change Period (Y+Rc), s	3.5	4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s	20.0	60.0		27.0	* 19	60.0		
Max Q Clear Time (g_c+I1), s	2.0	7.1		11.1	7.8	13.8		
Green Ext Time (p_c), s	0.0	11.1		0.1	0.1	10.9		

Intersection Summary			
HCM 2010 Ctrl Delay			14.9
HCM 2010 LOS			B

Notes

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	224	243	187	145	36
Future Vol, veh/h	51	224	243	187	145	36
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	291	316	243	188	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1063	189	189	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	247	853	1385	-	-	0
Stage 1	843	-	-	-	-	0
Stage 2	408	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	190	852	1385	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	315	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	4.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1385	-	1025	-
HCM Lane V/C Ratio	0.228	-	0.348	-
HCM Control Delay (s)	8.4	-	10.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.9	-	1.6	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	173	70	459	620	11
Future Vol, veh/h	9	173	70	459	620	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	211	85	560	756	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1493	763	770	0	-	0
Stage 1	763	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	136	404	844	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	404	844	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	29.8		1.3		0	
HCM LOS	D					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	844	-	360	-	-
HCM Lane V/C Ratio	0.101	-	0.617	-	-
HCM Control Delay (s)	9.7	0	29.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	3.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	199	82	0	505	667	0	0	0	320	2	136
Future Volume (veh/h)	0	199	82	0	505	667	0	0	0	320	2	136
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	219	0	0	555	0				353	0	26
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2080	0	0	1448	648				994	0	444
Arrive On Green	0.00	0.42	0.00	0.00	0.42	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	219	0	0	555	0				353	0	26
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	0.7	0.0	0.0	3.0	0.0				2.1	0.0	0.3
Cycle Q Clear(g_c), s	0.0	0.7	0.0	0.0	3.0	0.0				2.1	0.0	0.3
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2080	0	0	1448	648				994	0	444
V/C Ratio(X)	0.00	0.11	0.00	0.00	0.38	0.00				0.36	0.00	0.06
Avail Cap(c_a), veh/h	0	11253	0	0	7832	3504				4107	0	1833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.7	0.0	0.0	5.4	0.0				7.7	0.0	7.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	1.4	0.0				1.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	4.7	0.0	0.0	5.4	0.0				7.8	0.0	7.1
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		219			555						379	
Approach Delay, s/veh		4.7			5.4						7.7	
Approach LOS		A			A						A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		15.3		11.5		15.3						
Change Period (Y+Rc), s		6.8		6.8		6.8						
Max Green Setting (Gmax), s		58.2		28.2		58.2						
Max Q Clear Time (g_c+I1), s		2.7		4.1		5.0						
Green Ext Time (p_c), s		3.3		0.7		3.3						
Intersection Summary												
HCM 2010 Ctrl Delay			6.0									
HCM 2010 LOS			A									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	459	42	0	1054	357	124	0	416	0	0	0
Future Volume (vph)	0	459	42	0	1054	357	124	0	416	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frpb, ped/bikes		1.00			0.99			1.00	1.00			
Flpb, ped/bikes		1.00			1.00			1.00	1.00			
Frt		0.99			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4868			4720			1770	2787			
Flt Permitted		1.00			1.00			0.95	1.00			
Satd. Flow (perm)		4868			4720			1770	2787			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	504	46	0	1158	392	136	0	457	0	0	0
RTOR Reduction (vph)	0	9	0	0	77	0	0	0	98	0	0	0
Lane Group Flow (vph)	0	541	0	0	1473	0	0	136	359	0	0	0
Confl. Peds. (#/hr)			3			3						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases												
Actuated Green, G (s)		11.5			23.4			8.9	20.8			
Effective Green, g (s)		14.3			26.2			11.7	23.6			
Actuated g/C Ratio		0.31			0.57			0.25	0.51			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1516			2694			451	1432			
v/s Ratio Prot		0.11			c0.31			c0.08	0.13			
v/s Ratio Perm												
v/c Ratio		0.36			0.55			0.30	0.25			
Uniform Delay, d1		12.2			6.1			13.8	6.2			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		0.1			0.1			0.1	0.0			
Delay (s)		12.3			6.3			13.9	6.3			
Level of Service		B			A			B	A			
Approach Delay (s)		12.3			6.3			8.0			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	425	183	20	697	164	220	164	15	132	207	419
Future Volume (veh/h)	225	425	183	20	697	164	220	164	15	132	207	419
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	467	52	22	766	146	242	180	0	145	227	248
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	352	1105	494	57	1023	193	1176	1484	664	183	626	278
Arrive On Green	0.11	0.32	0.32	0.03	0.25	0.23	0.34	0.42	0.00	0.10	0.18	0.18
Sat Flow, veh/h	3343	3438	1538	1723	4172	788	3442	3539	1583	1774	3539	1573
Grp Volume(v), veh/h	247	467	52	22	603	309	242	180	0	145	227	248
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1667	1721	1770	1583	1774	1770	1573
Q Serve(g_s), s	9.3	13.9	1.1	1.6	22.0	22.4	6.5	4.0	0.0	10.4	7.3	20.0
Cycle Q Clear(g_c), s	9.3	13.9	1.1	1.6	22.0	22.4	6.5	4.0	0.0	10.4	7.3	20.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	1105	494	57	808	409	1176	1484	664	183	626	278
V/C Ratio(X)	0.70	0.42	0.11	0.39	0.75	0.76	0.21	0.12	0.00	0.79	0.36	0.89
Avail Cap(c_a), veh/h	411	1428	639	199	1343	680	1176	1484	664	239	626	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	34.6	4.2	61.6	45.3	45.8	30.3	23.1	0.0	56.9	47.1	52.3
Incr Delay (d2), s/veh	4.1	0.2	0.1	4.3	1.4	2.9	0.1	0.2	0.0	12.6	1.6	32.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.7	0.5	0.8	10.1	10.6	3.1	2.0	0.0	5.7	3.7	11.2
LnGrp Delay(d),s/veh	60.3	34.9	4.2	65.8	46.7	48.7	30.4	23.3	0.0	69.5	48.7	84.3
LnGrp LOS	E	C	A	E	D	D	C	C		E	D	F
Approach Vol, veh/h		766			934			422			620	
Approach Delay, s/veh		41.0			47.8			27.3			67.8	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	58.5	8.3	45.8	48.9	27.0	18.2	35.9
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	16.5	26.0	14.0	52.5	21.0	* 22	15.0	* 52
Max Q Clear Time (g_c+I1), s	12.4	6.0	3.6	15.9	8.5	22.0	11.3	24.4
Green Ext Time (p_c), s	0.1	1.8	0.0	4.1	1.6	0.0	1.4	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	8	8	189	14	18	12	412	211	14	323	10
Future Volume (veh/h)	14	8	8	189	14	18	12	412	211	14	323	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	9	0	223	0	0	13	463	0	16	363	9
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	28	68	533	0	238	56	1510	676	60	2188	54
Arrive On Green	0.04	0.04	0.00	0.15	0.00	0.00	0.03	0.43	0.00	0.03	0.43	0.40
Sat Flow, veh/h	1155	650	1583	3548	0	1583	1774	3539	1583	1774	5104	126
Grp Volume(v), veh/h	25	0	0	223	0	0	13	463	0	16	241	131
Grp Sat Flow(s),veh/h/ln	1805	0	1583	1774	0	1583	1774	1770	1583	1774	1695	1840
Q Serve(g_s), s	0.6	0.0	0.0	2.6	0.0	0.0	0.3	4.0	0.0	0.4	2.0	2.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.6	0.0	0.0	0.3	4.0	0.0	0.4	2.0	2.0
Prop In Lane	0.64		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	78	0	68	533	0	238	56	1510	676	60	1453	789
V/C Ratio(X)	0.32	0.00	0.00	0.42	0.00	0.00	0.23	0.31	0.00	0.27	0.17	0.17
Avail Cap(c_a), veh/h	1211	0	1063	3149	0	1405	1191	3563	1594	1191	3413	1852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	0.0	17.8	0.0	0.0	21.8	8.7	0.0	21.8	8.1	8.2
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.5	0.0	0.0	2.1	0.2	0.0	2.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.3	0.0	0.0	0.2	2.0	0.0	0.2	1.0	1.1
LnGrp Delay(d),s/veh	23.8	0.0	0.0	18.3	0.0	0.0	23.9	9.0	0.0	24.1	8.2	8.4
LnGrp LOS	C			B			C	A		C	A	A
Approach Vol, veh/h		25			223			476			388	
Approach Delay, s/veh		23.8			18.3			9.4			8.9	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	23.7		10.9	5.5	23.8		6.0
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.4	6.0		4.6	2.3	4.0		2.6
Green Ext Time (p_c), s	0.0	12.1		0.7	0.0	12.3		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			11.3
HCM 2010 LOS			B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	438	39	39	537	311	55	182	27	378	200	304
Future Volume (veh/h)	110	438	39	39	537	311	55	182	27	378	200	304
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	492	37	44	603	28	62	204	10	425	225	182
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	505	1360	102	174	1585	492	460	898	400	539	980	436
Arrive On Green	0.15	0.42	0.40	0.05	0.32	0.32	0.13	0.25	0.25	0.16	0.28	0.28
Sat Flow, veh/h	3343	3241	243	3343	4940	1535	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	124	260	269	44	603	28	62	204	10	425	225	182
Grp Sat Flow(s),veh/h/ln	1672	1719	1766	1672	1647	1535	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.3	13.5	13.6	1.6	12.3	1.0	2.1	5.9	0.6	15.4	6.4	12.3
Cycle Q Clear(g_c), s	4.3	13.5	13.6	1.6	12.3	1.0	2.1	5.9	0.6	15.4	6.4	12.3
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	721	741	174	1585	492	460	898	400	539	980	436
V/C Ratio(X)	0.25	0.36	0.36	0.25	0.38	0.06	0.13	0.23	0.02	0.79	0.23	0.42
Avail Cap(c_a), veh/h	505	721	741	327	1585	492	529	898	400	609	980	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	25.8	26.0	59.2	34.2	11.9	49.7	38.4	36.4	52.7	36.3	38.4
Incr Delay (d2), s/veh	0.1	1.4	1.4	0.3	0.7	0.2	0.0	0.6	0.1	5.2	0.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.6	6.9	0.8	5.7	0.5	1.0	3.0	0.3	7.8	3.2	5.7
LnGrp Delay(d),s/veh	48.7	27.2	27.3	59.5	34.9	12.1	49.7	39.0	36.5	58.0	36.8	41.3
LnGrp LOS	D	C	C	E	C	B	D	D	D	E	D	D
Approach Vol, veh/h		653			675			276			832	
Approach Delay, s/veh		31.3			35.5			41.3			48.6	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	45.0	24.4	37.0	10.1	58.6	21.4	40.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	14.2	38.9	20.2	30.9	9.9	43.2	17.9	33.2
Max Q Clear Time (g_c+I1), s	6.3	14.3	17.4	7.9	3.6	15.6	4.1	14.3
Green Ext Time (p_c), s	0.7	1.4	0.1	0.4	0.0	0.9	0.4	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	39.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	507	196	59	694	45	190	117	42	34	9	93
Future Volume (veh/h)	155	507	196	59	694	45	190	117	42	34	9	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.87		0.85	0.91		0.85
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	161	528	121	61	723	25	198	122	33	35	9	14
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	219	1047	865	202	1030	875	295	287	78	205	125	194
Arrive On Green	0.13	0.58	0.58	0.16	0.76	0.76	0.21	0.21	0.20	0.21	0.21	0.20
Sat Flow, veh/h	1723	1810	1496	1723	1810	1538	1199	1354	366	1118	589	917
Grp Volume(v), veh/h	161	528	121	61	723	25	198	0	155	35	0	23
Grp Sat Flow(s),veh/h/ln	1723	1810	1496	1723	1810	1538	1199	0	1720	1118	0	1506
Q Serve(g_s), s	11.7	22.6	4.8	4.1	27.0	0.5	20.6	0.0	10.2	3.6	0.0	1.6
Cycle Q Clear(g_c), s	11.7	22.6	4.8	4.1	27.0	0.5	22.2	0.0	10.2	13.8	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.61
Lane Grp Cap(c), veh/h	219	1047	865	202	1030	875	295	0	364	205	0	319
V/C Ratio(X)	0.74	0.50	0.14	0.30	0.70	0.03	0.67	0.00	0.43	0.17	0.00	0.07
Avail Cap(c_a), veh/h	278	1047	865	202	1030	875	317	0	397	226	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.7	16.3	12.6	50.1	10.1	6.9	49.9	0.0	44.6	50.4	0.0	41.5
Incr Delay (d2), s/veh	5.0	1.7	0.3	0.2	3.0	0.0	3.8	0.0	0.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	11.7	2.1	1.9	13.9	0.2	7.1	0.0	4.9	1.1	0.0	0.7
LnGrp Delay(d),s/veh	59.6	18.0	12.9	50.4	13.1	6.9	53.7	0.0	44.9	50.5	0.0	41.6
LnGrp LOS	E	B	B	D	B	A	D		D	D		D
Approach Vol, veh/h		810			809			353			58	
Approach Delay, s/veh		25.5			15.7			49.8			47.0	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	79.2		31.5	20.5	78.0		31.5
Change Period (Y+Rc), s	6.8	6.8		6.1	6.8	6.8		6.1
Max Green Setting (Gmax), s	10.0	72.4		27.9	18.2	64.2		27.9
Max Q Clear Time (g_c+I1), s	6.1	24.6		15.8	13.7	29.0		24.2
Green Ext Time (p_c), s	0.2	1.0		0.2	0.0	1.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing No Proj AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	198	0.0	0.177	5.4	LOS A	0.8	19.3	0.52	0.46	30.2
8	T1	122	0.0	0.177	4.8	LOS A	0.8	19.3	0.51	0.43	25.1
18	R2	44	0.0	0.177	4.8	LOS A	0.8	19.3	0.51	0.43	36.5
Approach		364	0.0	0.177	5.1	LOS A	0.8	19.3	0.52	0.45	29.3
East: WB Boronda Rd											
1	L2	61	1.2	0.304	6.1	LOS A	1.5	38.0	0.51	0.42	30.3
6	T1	723	1.2	0.304	5.5	LOS A	1.6	40.2	0.50	0.39	33.5
16	R2	47	6.3	0.032	2.7	LOS A	0.2	4.0	0.34	0.18	33.9
Approach		831	1.5	0.304	5.4	LOS A	1.6	40.2	0.49	0.38	33.3
North: SB McKinnon St											
7	L2	35	0.0	0.039	4.4	LOS A	0.2	4.0	0.57	0.47	33.6
4	T1	9	1.8	0.042	3.3	LOS A	0.2	4.7	0.55	0.42	32.0
14	R2	97	1.1	0.042	3.2	LOS A	0.2	4.7	0.54	0.42	33.0
Approach		142	0.9	0.042	3.5	LOS A	0.2	4.7	0.55	0.43	33.2
West: EB Boronda Rd											
5	L2	161	0.0	0.222	4.4	LOS A	1.0	24.4	0.21	0.11	32.6
2	T1	528	0.0	0.222	4.0	LOS A	1.0	24.9	0.20	0.10	35.4
12	R2	204	0.0	0.120	3.0	LOS A	0.5	13.5	0.16	0.06	30.5
Approach		894	0.0	0.222	3.8	LOS A	1.0	24.9	0.20	0.09	34.3
All Vehicles		2230	0.6	0.304	4.6	LOS A	1.6	40.2	0.38	0.28	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	542	85	78	711	152	104
Future Volume (veh/h)	542	85	78	711	152	104
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	645	66	93	846	181	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1251	1056	150	1463	230	205
Arrive On Green	1.00	1.00	0.09	0.81	0.13	0.00
Sat Flow, veh/h	1810	1528	1723	1810	1774	1583
Grp Volume(v), veh/h	645	66	93	846	181	0
Grp Sat Flow(s),veh/h/ln	1810	1528	1723	1810	1774	1583
Q Serve(g_s), s	0.0	0.0	6.8	21.8	12.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.8	21.8	12.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1251	1056	150	1463	230	205
V/C Ratio(X)	0.52	0.06	0.62	0.58	0.79	0.00
Avail Cap(c_a), veh/h	1251	1056	345	1463	273	244
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	57.3	4.5	54.8	0.0
Incr Delay (d2), s/veh	1.4	0.1	1.6	1.7	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.3	11.3	6.9	0.0
LnGrp Delay(d),s/veh	1.4	0.1	58.9	6.1	64.8	0.0
LnGrp LOS	A	A	E	A	E	
Approach Vol, veh/h	711			939	181	
Approach Delay, s/veh	1.3			11.4	64.8	
Approach LOS	A			B	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.3	93.9				109.1		20.9
Change Period (Y+Rc), s	6.8	6.8				6.8		6.0
Max Green Setting (Gmax), s	23.2	69.2				99.2		18.0
Max Q Clear Time (g_c+I1), s	8.8	2.0				23.8		14.9
Green Ext Time (p_c), s	0.0	3.1				3.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing No Proj AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	181	0.0	0.128	3.6	LOS A	0.5	13.7	0.46	0.36	35.4
8	T1	1	0.0	0.001	3.6	LOS A	0.0	0.1	0.46	0.25	36.5
18	R2	124	0.0	0.088	3.2	LOS A	0.4	9.1	0.45	0.34	36.5
Approach		306	0.0	0.128	3.4	LOS A	0.5	13.7	0.46	0.35	35.8
East: WB Baronda Rd											
1	L2	93	0.0	0.371	6.5	LOS A	2.2	54.8	0.40	0.26	35.8
6	T1	846	0.9	0.371	6.3	LOS A	2.2	55.7	0.40	0.25	36.6
16	R2	1	0.0	0.371	6.2	LOS A	2.2	55.7	0.39	0.24	35.1
Approach		940	0.8	0.371	6.4	LOS A	2.2	55.7	0.40	0.25	36.5
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.001	4.4	LOS A	0.0	0.1	0.60	0.36	34.6
4	T1	1	0.0	0.001	3.0	LOS A	0.0	0.1	0.58	0.31	36.4
14	R2	1	0.0	0.001	2.9	LOS A	0.0	0.1	0.55	0.29	36.6
Approach		4	0.0	0.001	3.4	LOS A	0.0	0.1	0.58	0.32	35.8
West: EB Boronda Rd											
5u	U	1	0.0	0.278	5.2	LOS A	1.5	37.8	0.26	0.13	37.9
5	L2	1	0.0	0.278	5.2	LOS A	1.5	37.8	0.26	0.13	36.6
2	T1	645	2.0	0.278	5.1	LOS A	1.5	38.0	0.26	0.13	37.2
12	R2	101	0.0	0.278	4.9	LOS A	1.5	38.0	0.25	0.12	36.0
Approach		749	1.7	0.278	5.1	LOS A	1.5	38.0	0.26	0.13	37.0
All Vehicles		1999	1.0	0.371	5.4	LOS A	2.2	55.7	0.35	0.22	36.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	417	88	223	548	205	93	153	265	150	189	25
Future Volume (veh/h)	62	417	88	223	548	205	93	153	265	150	189	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	491	0	262	645	0	109	180	0	176	222	25
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	127	724	615	369	977	0	170	246	209	232	275	31
Arrive On Green	0.07	0.40	0.00	0.43	1.00	0.00	0.10	0.13	0.00	0.13	0.17	0.15
Sat Flow, veh/h	1723	1810	1538	1723	1810	0	1774	1863	1583	1774	1644	185
Grp Volume(v), veh/h	73	491	0	262	645	0	109	180	0	176	0	247
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1810	0	1774	1863	1583	1774	0	1829
Q Serve(g_s), s	5.3	29.0	0.0	16.2	0.0	0.0	7.7	12.1	0.0	12.4	0.0	16.9
Cycle Q Clear(g_c), s	5.3	29.0	0.0	16.2	0.0	0.0	7.7	12.1	0.0	12.4	0.0	16.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	127	724	615	369	977	0	170	246	209	232	0	306
V/C Ratio(X)	0.57	0.68	0.00	0.71	0.66	0.00	0.64	0.73	0.00	0.76	0.00	0.81
Avail Cap(c_a), veh/h	172	724	615	369	977	0	232	315	268	232	0	310
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.69	0.69	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.2	32.1	0.0	33.9	0.0	0.0	56.6	54.2	0.0	54.5	0.0	52.3
Incr Delay (d2), s/veh	1.5	5.1	0.0	3.7	2.4	0.0	1.5	4.1	0.0	12.2	0.0	13.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	15.5	0.0	8.1	0.7	0.0	3.9	6.5	0.0	6.9	0.0	9.7
LnGrp Delay(d),s/veh	59.7	37.2	0.0	37.6	2.4	0.0	58.1	58.3	0.0	66.7	0.0	65.7
LnGrp LOS	E	D		D	A		E	E		E		E
Approach Vol, veh/h		564			907			289			423	
Approach Delay, s/veh		40.1			12.6			58.2			66.1	
Approach LOS		D			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	56.0	16.4	25.7	13.6	74.2	21.0	21.2
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Green Setting (Gmax), s	20.2	49.2	14.2	19.2	10.2	59.2	14.2	19.2
Max Q Clear Time (g_c+I1), s	18.2	31.0	9.7	18.9	7.3	2.0	14.4	14.1
Green Ext Time (p_c), s	0.1	0.8	0.1	0.0	0.0	1.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing No Proj AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	109	0.0	0.088	3.6	LOS A	0.2	6.0	0.32	0.27	36.2
8	T1	180	1.6	0.089	4.4	LOS A	0.2	5.9	0.35	0.31	36.2
18	R2	312	0.0	0.186	0.0	LOS A	0.0	0.0	0.00	0.00	39.4
Approach		601	0.5	0.186	2.0	LOS A	0.2	6.0	0.16	0.14	37.7
East: WB Boronda Rd											
1	L2	262	0.0	0.239	5.1	LOS A	0.9	22.9	0.35	0.26	33.7
6	T1	645	0.6	0.239	4.9	LOS A	0.9	23.6	0.34	0.25	40.0
16	R2	241	1.6	0.173	4.0	LOS A	0.7	16.7	0.28	0.17	37.7
Approach		1148	0.7	0.239	4.7	LOS A	0.9	23.6	0.33	0.24	38.4
North: SB Natividad Rd											
7	L2	176	0.0	0.130	5.1	LOS A	0.4	10.7	0.49	0.47	36.1
4	T1	222	0.0	0.130	4.4	LOS A	0.5	11.4	0.48	0.45	35.9
14	R2	29	0.0	0.024	3.1	LOS A	0.1	1.9	0.39	0.28	39.5
Approach		428	0.0	0.130	4.6	LOS A	0.5	11.4	0.48	0.45	36.3
West: EB Boronda Rd											
5u	U	1	0.0	0.169	5.0	LOS A	0.6	14.7	0.44	0.39	38.8
5	L2	73	0.0	0.169	5.0	LOS A	0.6	14.7	0.44	0.39	38.5
2	T1	491	0.3	0.169	4.7	LOS A	0.6	15.3	0.43	0.38	39.9
12	R2	104	0.0	0.079	3.4	LOS A	0.3	6.6	0.35	0.25	38.1
Approach		668	0.2	0.169	4.5	LOS A	0.6	15.3	0.42	0.36	39.5
All Vehicles		2846	0.4	0.239	4.1	LOS A	0.9	23.6	0.34	0.28	38.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	511	316	17	694	300	23
Future Volume (veh/h)	511	316	17	694	300	23
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	574	248	19	780	337	4
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1178	998	70	1307	384	343
Arrive On Green	1.00	1.00	0.04	0.72	0.22	0.22
Sat Flow, veh/h	1810	1533	1723	1810	1774	1583
Grp Volume(v), veh/h	574	248	19	780	337	4
Grp Sat Flow(s),veh/h/ln	1810	1533	1723	1810	1774	1583
Q Serve(g_s), s	0.0	0.0	1.4	27.4	23.9	0.3
Cycle Q Clear(g_c), s	0.0	0.0	1.4	27.4	23.9	0.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1178	998	70	1307	384	343
V/C Ratio(X)	0.49	0.25	0.27	0.60	0.88	0.01
Avail Cap(c_a), veh/h	1178	998	252	1307	669	597
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	60.5	8.8	49.3	40.0
Incr Delay (d2), s/veh	1.0	0.4	0.8	2.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.7	14.2	12.0	0.1
LnGrp Delay(d),s/veh	1.0	0.4	61.3	10.8	52.1	40.0
LnGrp LOS	A	A	E	B	D	D
Approach Vol, veh/h	822			799	341	
Approach Delay, s/veh	0.8			12.0	51.9	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.3	88.6				97.9		32.1
Change Period (Y+Rc), s	6.8	6.8				6.8		6.1
Max Green Setting (Gmax), s	16.2	47.2				70.2		46.9
Max Q Clear Time (g_c+I1), s	13.4	2.0				29.4		25.9
Green Ext Time (p_c), s	0.0	2.8				2.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing No Proj AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Independence Blvd											
3	L2	337	0.4	0.128	3.8	LOS A	0.6	13.9	0.43	0.32	33.1
8	T1	1	0.0	0.025	3.6	LOS A	0.1	2.4	0.42	0.29	35.4
18	R2	26	0.0	0.025	3.6	LOS A	0.1	2.4	0.42	0.29	34.6
Approach		364	0.4	0.128	3.8	LOS A	0.6	13.9	0.43	0.32	33.2
East: WB Boronda Rd											
1	L2	19	0.0	0.314	6.0	LOS A	1.3	31.9	0.38	0.30	34.8
6	T1	780	0.3	0.314	5.7	LOS A	1.3	32.7	0.38	0.29	35.8
16	R2	1	0.0	0.001	2.3	LOS A	0.0	0.1	0.02	0.00	36.2
Approach		800	0.3	0.314	5.7	LOS A	1.3	32.7	0.38	0.29	35.8
North: SB Independence Blvd (Future)											
7	L2	1	0.0	0.002	3.5	LOS A	0.0	0.2	0.51	0.32	35.4
4	T1	1	0.0	0.002	3.5	LOS A	0.0	0.2	0.51	0.32	33.8
14	R2	1	0.0	0.001	3.5	LOS A	0.0	0.1	0.51	0.30	35.5
Approach		3	0.0	0.002	3.5	LOS A	0.0	0.2	0.51	0.31	35.0
West: EB Boronda Rd											
5u	U	1	0.0	0.184	3.9	LOS A	1.0	25.0	0.11	0.03	37.6
5	L2	1	0.0	0.184	3.9	LOS A	1.0	25.0	0.11	0.03	36.4
2	T1	574	0.8	0.184	3.7	LOS A	1.0	25.3	0.10	0.03	36.7
12	R2	355	0.3	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		931	0.6	0.213	2.3	LOS A	1.0	25.3	0.06	0.02	36.8
All Vehicles		2099	0.4	0.314	3.8	LOS A	1.3	32.7	0.25	0.17	35.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Int Delay, s/veh	17.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	122	30	548	160	42
Future Vol, veh/h	405	122	30	548	160	42
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	455	137	34	616	180	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	593	0	1208	525
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	683	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	968	-	202	552
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	968	-	191	552
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	475	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	114.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	-	-	968	-
HCM Lane V/C Ratio	1.027	-	-	0.035	-
HCM Control Delay (s)	114.3	-	-	8.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	9.6	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	326	114	248	306	205	36	389	259	157	542	95
Future Volume (veh/h)	106	326	114	248	306	205	36	389	259	157	542	95
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	375	11	285	352	45	41	447	208	180	623	31
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	790	330	334	584	488	353	1313	584	285	1347	405
Arrive On Green	0.10	0.22	0.22	0.19	0.31	0.31	0.20	0.38	0.36	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1477	1774	1863	1555	1774	3447	1534	3442	5085	1530
Grp Volume(v), veh/h	122	375	11	285	352	45	41	439	216	180	623	31
Grp Sat Flow(s),veh/h/ln	1774	1770	1477	1774	1863	1555	1774	1695	1591	1721	1695	1530
Q Serve(g_s), s	8.5	11.8	0.5	19.9	20.5	2.6	2.4	11.8	12.7	6.5	13.1	1.4
Cycle Q Clear(g_c), s	8.5	11.8	0.5	19.9	20.5	2.6	2.4	11.8	12.7	6.5	13.1	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Lane Grp Cap(c), veh/h	173	790	330	334	584	488	353	1291	606	285	1347	405
V/C Ratio(X)	0.70	0.47	0.03	0.85	0.60	0.09	0.12	0.34	0.36	0.63	0.46	0.08
Avail Cap(c_a), veh/h	255	998	417	457	738	616	353	1291	606	371	1347	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	43.2	15.0	50.3	37.2	31.1	42.1	28.2	29.2	56.8	39.4	19.2
Incr Delay (d2), s/veh	1.9	0.2	0.0	8.6	0.4	0.0	0.1	0.7	1.6	0.9	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.8	0.2	10.5	10.6	1.1	1.2	5.6	5.8	3.1	6.3	0.6
LnGrp Delay(d),s/veh	57.9	43.4	15.0	58.8	37.6	31.1	42.1	28.9	30.8	57.7	40.6	19.6
LnGrp LOS	E	D	B	E	D	C	D	C	C	E	D	B
Approach Vol, veh/h		508			682			696			834	
Approach Delay, s/veh		46.2			46.0			30.3			43.5	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	52.7	28.1	32.6	29.4	37.9	16.5	44.1
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6
Max Q Clear Time (g_c+I1), s	8.5	14.7	21.9	13.8	4.4	15.1	10.5	22.5
Green Ext Time (p_c), s	0.0	1.4	0.1	1.6	0.4	1.6	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	0	323	0	0	0	308	464	0	6	839	157
Future Volume (veh/h)	187	0	323	0	0	0	308	464	0	6	839	157
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	231	0	0				380	573	0	7	1036	166
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.81	0.81	0.81				0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	407	0	187				490	3341	0	20	1726	276
Arrive On Green	0.12	0.00	0.00				0.28	0.66	0.00	0.01	0.39	0.37
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4404	704
Grp Volume(v), veh/h	231	0	0				380	573	0	7	797	405
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1719
Q Serve(g_s), s	3.6	0.0	0.0				11.1	2.4	0.0	0.2	10.5	10.6
Cycle Q Clear(g_c), s	3.6	0.0	0.0				11.1	2.4	0.0	0.2	10.5	10.6
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.41
Lane Grp Cap(c), veh/h	407	0	187				490	3341	0	20	1328	673
V/C Ratio(X)	0.57	0.00	0.00				0.78	0.17	0.00	0.36	0.60	0.60
Avail Cap(c_a), veh/h	1868	0	860				947	3341	0	632	1901	964
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	0.0				18.7	3.7	0.0	27.6	13.6	13.9
Incr Delay (d2), s/veh	1.2	0.0	0.0				5.6	0.0	0.0	4.0	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0				6.1	1.1	0.0	0.1	5.0	5.2
LnGrp Delay(d),s/veh	24.7	0.0	0.0				24.3	3.7	0.0	31.6	14.0	14.7
LnGrp LOS	C						C	A		C	B	B
Approach Vol, veh/h		231						953			1209	
Approach Delay, s/veh		24.7						11.9			14.4	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	4.6	40.9		10.6	19.5	26.0		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.2	4.4		5.6	13.1	12.6		
Green Ext Time (p_c), s	0.0	13.0		0.8	2.5	7.9		

Intersection Summary			
HCM 2010 Ctrl Delay			14.4
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	482	87	6	987	52	156	73	12	58	91	422
Future Volume (veh/h)	159	482	87	6	987	52	156	73	12	58	91	422
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	169	513	84	6	1050	52	166	78	7	62	97	115
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1549	253	77	1379	68	386	498	45	427	552	458
Arrive On Green	0.15	0.51	0.47	0.04	0.40	0.37	0.30	0.30	0.28	0.30	0.30	0.30
Sat Flow, veh/h	1774	3048	497	1774	3431	170	1145	1681	151	1281	1863	1545
Grp Volume(v), veh/h	169	297	300	6	541	561	166	0	85	62	97	115
Grp Sat Flow(s),veh/h/ln	1774	1770	1775	1774	1770	1831	1145	0	1831	1281	1863	1545
Q Serve(g_s), s	7.1	7.8	8.0	0.3	20.8	20.9	9.9	0.0	2.7	3.0	3.1	4.5
Cycle Q Clear(g_c), s	7.1	7.8	8.0	0.3	20.8	20.9	13.0	0.0	2.7	5.7	3.1	4.5
Prop In Lane	1.00		0.28	1.00		0.09	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	266	899	902	77	711	736	386	0	543	427	552	458
V/C Ratio(X)	0.64	0.33	0.33	0.08	0.76	0.76	0.43	0.00	0.16	0.15	0.18	0.25
Avail Cap(c_a), veh/h	509	899	902	509	844	873	606	0	894	672	909	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	11.5	11.8	36.3	20.4	20.5	25.5	0.0	20.6	22.6	20.6	21.1
Incr Delay (d2), s/veh	2.5	0.2	0.2	0.4	3.4	3.3	0.8	0.0	0.1	0.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.8	3.9	0.1	10.8	11.1	3.2	0.0	1.4	1.1	1.6	1.9
LnGrp Delay(d),s/veh	34.1	11.7	12.0	36.7	23.8	23.8	26.2	0.0	20.7	22.8	20.8	21.4
LnGrp LOS	C	B	B	D	C	C	C		C	C	C	C
Approach Vol, veh/h		766			1108			251			274	
Approach Delay, s/veh		16.7			23.9			24.4			21.5	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	44.2		27.4	15.8	35.8		27.4
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	2.3	10.0		7.7	9.1	22.9		15.0
Green Ext Time (p_c), s	0.0	11.5		2.3	0.3	6.2		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		21.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	0	101	0	0	0	63	416	0	0	366	89
Future Volume (veh/h)	138	0	101	0	0	0	63	416	0	0	366	89
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1900	1863	1900	1810	1810	0	0	1810	1810
Adj Flow Rate, veh/h	153	0	12	0	0	0	70	462	0	0	407	33
Adj No. of Lanes	1	0	1	0	1	0	1	1	0	0	1	1
Peak Hour Factor	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2	2	2	2	5	5	0	0	5	5
Cap, veh/h	310	0	0	0	5	0	182	1124	0	0	749	636
Arrive On Green	0.17	0.00	0.05	0.00	0.00	0.00	0.11	0.62	0.00	0.00	0.41	0.41
Sat Flow, veh/h	1774	153		0	-74510	0	1723	1810	0	0	1810	1536
Grp Volume(v), veh/h	153	15.8		0	0	0	70	462	0	0	407	33
Grp Sat Flow(s),veh/h/ln	1774	B		0	1863	0	1723	1810	0	0	1810	1536
Q Serve(g_s), s	3.1			0.0	0.0	0.0	1.5	5.1	0.0	0.0	6.7	0.5
Cycle Q Clear(g_c), s	3.1			0.0	0.0	0.0	1.5	5.1	0.0	0.0	6.7	0.5
Prop In Lane	1.00			0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	310			0	5	0	182	1124	0	0	749	636
V/C Ratio(X)	0.49			0.00	0.00	0.00	0.39	0.41	0.00	0.00	0.54	0.05
Avail Cap(c_a), veh/h	1039			0	949	0	746	1659	0	0	1659	1408
HCM Platoon Ratio	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.6			0.0	0.0	0.0	16.4	3.8	0.0	0.0	8.7	6.9
Incr Delay (d2), s/veh	1.2			0.0	0.0	0.0	1.3	0.2	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6			0.0	0.0	0.0	0.8	2.5	0.0	0.0	3.4	0.2
LnGrp Delay(d),s/veh	15.8			0.0	0.0	0.0	17.7	4.0	0.0	0.0	9.3	6.9
LnGrp LOS	B						B	A			A	A
Approach Vol, veh/h					0			532			440	
Approach Delay, s/veh					0.0			5.8			9.1	
Approach LOS								A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		
Phs Duration (G+Y+Rc), s	8.1	20.3	10.9	0.0		28.4		
Change Period (Y+Rc), s	* 6	* 6	* 6	* 6		* 6		
Max Green Setting (Gmax), s	* 15	* 34	* 21	* 18		* 34		
Max Q Clear Time (g_c+I1), s	3.5	8.7	5.1	0.0		7.1		
Green Ext Time (p_c), s	0.1	5.4	0.3	0.0		5.4		

Intersection Summary		
HCM 2010 Ctrl Delay		8.5
HCM 2010 LOS		A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	844	255	0	1155	260	0	0	0	191	0	360
Future Volume (veh/h)	0	844	255	0	1155	260	0	0	0	191	0	360
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	888	0	0	1216	0				201	0	359
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1897	849	0	1897	0				996	0	458
Arrive On Green	0.00	0.55	0.00	0.00	0.55	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	888	0	0	1216	0				201	0	359
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	7.9	0.0	0.0	12.4	0.0				2.2	0.0	10.5
Cycle Q Clear(g_c), s	0.0	7.9	0.0	0.0	12.4	0.0				2.2	0.0	10.5
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1897	849	0	1897	0				996	0	458
V/C Ratio(X)	0.00	0.47	0.00	0.00	0.64	0.00				0.20	0.00	0.78
Avail Cap(c_a), veh/h	0	2803	1254	0	2803	0				2772	0	1275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	7.8	0.0				13.5	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0				0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	5.8	0.0				1.1	0.0	4.9
LnGrp Delay(d),s/veh	0.0	6.9	0.0	0.0	8.0	0.0				13.6	0.0	18.7
LnGrp LOS		A			A					B		B
Approach Vol, veh/h		888			1216						560	
Approach Delay, s/veh		6.9			8.0						16.8	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		31.8		18.6		31.8		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		40.0		40.0		40.0		
Max Q Clear Time (g_c+I1), s		9.9		12.5		14.4		
Green Ext Time (p_c), s		13.3		1.5		12.4		

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	778	280	0	1156	214	244	0	116	0	0	0
Future Volume (vph)	0	778	280	0	1156	214	244	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.98		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3345		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3345		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	846	304	0	1257	233	265	0	126	0	0	0
RTOR Reduction (vph)	0	0	102	0	17	0	0	0	100	0	0	0
Lane Group Flow (vph)	0	846	202	0	1473	0	132	133	26	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		43.8	43.8		43.8		13.3	13.3	13.3			
Effective Green, g (s)		44.4	43.8		44.4		13.5	13.5	13.5			
Actuated g/C Ratio		0.67	0.66		0.67		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2316	1022		2253		344	344	324			
v/s Ratio Prot		0.25			c0.44		0.08	c0.08				
v/s Ratio Perm			0.13						0.02			
v/c Ratio		0.37	0.20		0.65		0.38	0.39	0.08			
Uniform Delay, d1		4.7	4.3		6.3		22.6	22.6	21.2			
Progression Factor		1.00	1.00		0.53		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		0.6		0.3	0.3	0.0			
Delay (s)		4.8	4.4		3.9		22.9	22.9	21.2			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		4.6			3.9			22.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	13.4
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	373	70	133	436	74	67	452	113	144	725	109
Future Volume (veh/h)	165	373	70	133	436	74	67	452	113	144	725	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	183	414	62	148	484	69	74	502	44	160	806	107
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	235	676	101	188	598	85	181	1639	729	265	2212	292
Arrive On Green	0.14	0.23	0.21	0.11	0.20	0.18	0.05	0.46	0.46	0.08	0.49	0.47
Sat Flow, veh/h	1723	2999	446	1723	3017	428	3442	3539	1575	3442	4538	598
Grp Volume(v), veh/h	183	236	240	148	275	278	74	502	44	160	601	312
Grp Sat Flow(s),veh/h/ln	1723	1719	1726	1723	1719	1726	1721	1770	1575	1721	1695	1746
Q Serve(g_s), s	13.1	15.8	16.0	10.7	19.5	19.7	2.7	11.4	2.0	5.8	14.1	14.4
Cycle Q Clear(g_c), s	13.1	15.8	16.0	10.7	19.5	19.7	2.7	11.4	2.0	5.8	14.1	14.4
Prop In Lane	1.00		0.26	1.00		0.25	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	235	388	389	188	341	342	181	1639	729	265	1652	851
V/C Ratio(X)	0.78	0.61	0.62	0.79	0.81	0.81	0.41	0.31	0.06	0.60	0.36	0.37
Avail Cap(c_a), veh/h	256	604	607	188	537	539	296	1639	729	323	1652	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	44.5	44.8	55.5	49.0	49.3	58.7	21.5	19.0	57.2	20.4	20.7
Incr Delay (d2), s/veh	11.4	0.6	0.6	17.8	2.2	2.4	0.5	0.5	0.2	0.8	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	7.5	7.7	6.0	9.5	9.7	1.3	5.7	0.9	2.8	6.7	7.2
LnGrp Delay(d),s/veh	64.8	45.1	45.4	73.4	51.1	51.7	59.2	22.0	19.1	58.0	21.1	22.0
LnGrp LOS	E	D	D	E	D	D	E	C	B	E	C	C
Approach Vol, veh/h		659			701			620			1073	
Approach Delay, s/veh		50.7			56.1			26.2			26.8	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	63.3	18.0	32.9	10.7	66.4	21.5	29.4
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	38.9	11.9	42.9	8.9	39.9	16.9	37.9
Max Q Clear Time (g_c+I1), s	7.8	13.4	12.7	18.0	4.7	16.4	15.1	21.7
Green Ext Time (p_c), s	0.0	3.7	0.0	0.9	0.0	3.7	0.3	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	418	87	703	511	304	45	655	538	335	770	61
Future Volume (veh/h)	132	418	87	703	511	304	45	655	538	335	770	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	157	498	0	837	608	0	54	780	588	399	917	68
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	200	719	322	740	1094	490	96	1053	1448	502	1300	96
Arrive On Green	0.12	0.21	0.00	0.22	0.32	0.00	0.05	0.30	0.30	0.15	0.39	0.37
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2759	3442	3341	248
Grp Volume(v), veh/h	157	498	0	837	608	0	54	780	588	399	486	499
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1819
Q Serve(g_s), s	11.6	17.5	0.0	29.0	19.2	0.0	3.9	26.0	16.9	14.7	30.3	30.3
Cycle Q Clear(g_c), s	11.6	17.5	0.0	29.0	19.2	0.0	3.9	26.0	16.9	14.7	30.3	30.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	200	719	322	740	1094	490	96	1053	1448	502	689	708
V/C Ratio(X)	0.78	0.69	0.00	1.13	0.56	0.00	0.56	0.74	0.41	0.79	0.71	0.71
Avail Cap(c_a), veh/h	349	1024	458	740	1094	490	298	1283	1628	657	689	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	47.9	0.0	51.0	37.0	0.0	60.4	41.5	19.0	54.0	33.7	33.8
Incr Delay (d2), s/veh	2.6	0.9	0.0	75.3	0.5	0.0	1.9	1.6	0.1	3.7	3.1	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	8.4	0.0	21.1	9.2	0.0	2.0	12.9	6.4	7.2	15.3	15.7
LnGrp Delay(d),s/veh	58.9	48.8	0.0	126.3	37.5	0.0	62.3	43.1	19.1	57.7	36.8	36.8
LnGrp LOS	E	D		F	D		E	D	B	E	D	D
Approach Vol, veh/h		655			1445			1422			1384	
Approach Delay, s/veh		51.2			88.9			33.9			42.8	
Approach LOS		D			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	43.0	33.0	31.9	11.1	55.0	19.2	45.7
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	23.0	45.0	27.0	* 37	20.0	46.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	16.7	28.0	31.0	19.5	5.9	32.3	13.6	21.2
Green Ext Time (p_c), s	0.4	8.5	0.0	5.6	0.0	8.9	0.1	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	714	525	590	182	303	1175
Future Volume (veh/h)	714	525	590	182	303	1175
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	793	583	656	0	337	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1055	2478	1197	535	566	261
Arrive On Green	0.32	0.72	0.35	0.00	0.16	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	793	583	656	0	337	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	14.9	4.0	10.7	0.0	6.3	0.0
Cycle Q Clear(g_c), s	14.9	4.0	10.7	0.0	6.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1055	2478	1197	535	566	261
V/C Ratio(X)	0.75	0.24	0.55	0.00	0.60	0.00
Avail Cap(c_a), veh/h	2251	4581	2069	926	1553	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	21.4	3.3	18.3	0.0	27.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.4	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	1.9	5.2	0.0	3.1	0.0
LnGrp Delay(d),s/veh	22.5	3.3	18.7	0.0	28.0	0.0
LnGrp LOS	C	A	B		C	
Approach Vol, veh/h		1376	656		337	
Approach Delay, s/veh		14.4	18.7		28.0	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		54.3		15.5	26.0	28.3		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		6.0		8.3	16.9	12.7		
Green Ext Time (p_c), s		11.5		1.1	3.2	9.6		

Intersection Summary			
HCM 2010 Ctrl Delay			17.5
HCM 2010 LOS			B

Intersection						
Int Delay, s/veh	19.3					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	384	121	69	292	155	11
Future Vol, veh/h	384	121	69	292	155	11
Conflicting Peds, #/hr	0	15	15	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	499	157	90	379	201	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	671	0	1150	592
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	558	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	905	-	219	506
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	~ 195	500
Mov Cap-2 Maneuver	-	-	-	-	~ 195	-
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	516	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	116.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	195	500	-	-	905	-
HCM Lane V/C Ratio	1.032	0.029	-	-	0.099	-
HCM Control Delay (s)	123.6	12.4	-	-	9.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	9.1	0.1	-	-	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	0	39	0	0	0	39	32	0	1	23	68
Future Vol, veh/h	67	0	39	0	0	0	39	32	0	1	23	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	0	46	0	0	0	46	38	0	1	27	81

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	201	201	68	224	242	38	108	0	0	38	0	0
Stage 1	70	70	-	131	131	-	-	-	-	-	-	-
Stage 2	131	131	-	93	111	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	757	695	995	732	660	1034	1483	-	-	1572	-	-
Stage 1	940	837	-	873	788	-	-	-	-	-	-	-
Stage 2	873	788	-	914	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	738	672	995	680	638	1034	1483	-	-	1572	-	-
Mov Cap-2 Maneuver	738	672	-	680	638	-	-	-	-	-	-	-
Stage 1	910	836	-	845	763	-	-	-	-	-	-	-
Stage 2	845	763	-	870	803	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	0	4.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1483	-	-	815	-	1572	-	-
HCM Lane V/C Ratio	0.031	-	-	0.155	-	0.001	-	-
HCM Control Delay (s)	7.5	0	-	10.2	0	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	144	740	59	37	200	563	473	57	891	11
Future Volume (veh/h)	12	33	144	740	59	37	200	563	473	57	891	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	15	40	0	902	72	4	244	687	165	70	1087	12
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	136	115	985	533	452	444	1593	693	117	1377	15
Arrive On Green	0.07	0.07	0.00	0.29	0.29	0.29	0.25	0.45	0.45	0.07	0.27	0.25
Sat Flow, veh/h	1774	1863	1583	3442	1863	1578	1774	3539	1540	1774	5183	57
Grp Volume(v), veh/h	15	40	0	902	72	4	244	687	165	70	711	388
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1578	1774	1770	1540	1774	1695	1850
Q Serve(g_s), s	1.0	2.6	0.0	32.4	3.7	0.2	15.3	17.0	8.4	4.9	24.9	25.0
Cycle Q Clear(g_c), s	1.0	2.6	0.0	32.4	3.7	0.2	15.3	17.0	8.4	4.9	24.9	25.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	129	136	115	985	533	452	444	1593	693	117	901	491
V/C Ratio(X)	0.12	0.30	0.00	0.92	0.14	0.01	0.55	0.43	0.24	0.60	0.79	0.79
Avail Cap(c_a), veh/h	402	422	359	995	538	456	444	1593	693	152	901	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	56.2	0.0	44.2	33.9	32.7	41.7	24.0	21.7	58.1	43.7	43.7
Incr Delay (d2), s/veh	0.1	0.4	0.0	12.4	0.0	0.0	0.8	0.9	0.8	1.8	7.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	0.0	17.1	1.9	0.1	7.6	8.5	3.7	2.5	12.5	14.4
LnGrp Delay(d),s/veh	55.6	56.7	0.0	56.6	34.0	32.7	42.5	24.9	22.5	59.9	50.7	55.9
LnGrp LOS	E	E		E	C	C	D	C	C	E	D	E
Approach Vol, veh/h		55			978			1096			1169	
Approach Delay, s/veh		56.4			54.8			28.4			52.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	61.6		13.3	36.0	38.0		40.6
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	9.9	31.9		34.9
Max Q Clear Time (g_c+I1), s	6.9	19.0		4.6	17.3	27.0		34.4
Green Ext Time (p_c), s	0.0	1.7		0.1	0.0	1.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	5	91	12	14	26	53	792	5	18	1218	345
Future Volume (veh/h)	330	5	91	12	14	26	53	792	5	18	1218	345
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	379	6	23	14	16	7	61	910	5	21	1400	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	4	574	49	47	11	122	1712	9	75	1586	0
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.35	0.07	0.47	0.45	0.04	0.45	0.00
Sat Flow, veh/h	704	11	1574	0	130	30	1774	3609	20	1774	3632	0
Grp Volume(v), veh/h	385	0	23	37	0	0	61	446	469	21	1400	0
Grp Sat Flow(s),veh/h/ln	715	0	1574	160	0	0	1774	1770	1859	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.0	0.0	0.0	0.0	3.4	18.0	18.0	1.2	36.6	0.0
Cycle Q Clear(g_c), s	37.0	0.0	1.0	37.0	0.0	0.0	3.4	18.0	18.0	1.2	36.6	0.0
Prop In Lane	0.98		1.00	0.38		0.19	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	331	0	574	107	0	0	122	840	882	75	1586	0
V/C Ratio(X)	1.16	0.00	0.04	0.34	0.00	0.00	0.50	0.53	0.53	0.28	0.88	0.00
Avail Cap(c_a), veh/h	331	0	574	107	0	0	569	840	882	569	1658	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.1	0.0	20.8	26.5	0.0	0.0	45.6	18.7	18.7	47.1	25.5	0.0
Incr Delay (d2), s/veh	100.9	0.0	0.0	0.7	0.0	0.0	1.2	0.3	0.3	0.7	5.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	0.0	0.4	0.7	0.0	0.0	1.7	8.8	9.2	0.6	18.9	0.0
LnGrp Delay(d),s/veh	137.0	0.0	20.8	27.3	0.0	0.0	46.7	19.1	19.1	47.8	31.0	0.0
LnGrp LOS	F		C	C			D	B	B	D	C	
Approach Vol, veh/h		408			37			976			1421	
Approach Delay, s/veh		130.5			27.3			20.8			31.3	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	52.1		41.0	10.9	49.4		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	3.2	20.0		39.0	5.4	38.6		39.0
Green Ext Time (p_c), s	0.0	11.9		0.0	0.1	4.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	307	25	16	560	223	33	246	30	177	261	317
Future Volume (veh/h)	170	307	25	16	560	223	33	246	30	177	261	317
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	185	334	24	17	609	69	36	267	5	192	284	87
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	305	1486	106	22	1342	580	44	569	254	313	445	377
Arrive On Green	0.09	0.46	0.45	0.01	0.38	0.38	0.02	0.16	0.16	0.09	0.25	0.25
Sat Flow, veh/h	3343	3244	232	1774	3539	1529	1774	3539	1580	3343	1810	1534
Grp Volume(v), veh/h	185	176	182	17	609	69	36	267	5	192	284	87
Grp Sat Flow(s),veh/h/ln	1672	1719	1756	1774	1770	1529	1774	1770	1580	1672	1810	1534
Q Serve(g_s), s	3.3	3.8	3.9	0.6	8.0	1.8	1.2	4.2	0.2	3.4	8.7	2.8
Cycle Q Clear(g_c), s	3.3	3.8	3.9	0.6	8.0	1.8	1.2	4.2	0.2	3.4	8.7	2.8
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	788	805	22	1342	580	44	569	254	313	445	377
V/C Ratio(X)	0.61	0.22	0.23	0.78	0.45	0.12	0.82	0.47	0.02	0.61	0.64	0.23
Avail Cap(c_a), veh/h	1625	877	896	862	2092	904	862	1720	768	1625	909	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	10.1	10.1	30.4	14.4	12.5	30.0	23.5	21.8	26.9	20.8	18.6
Incr Delay (d2), s/veh	1.9	0.1	0.1	43.8	0.2	0.1	30.0	0.6	0.0	2.0	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.8	1.9	0.5	3.9	0.8	1.0	2.1	0.1	1.7	4.5	1.2
LnGrp Delay(d),s/veh	28.9	10.2	10.3	74.2	14.6	12.5	59.9	24.1	21.8	28.9	22.4	18.9
LnGrp LOS	C	B	B	E	B	B	E	C	C	C	C	B
Approach Vol, veh/h		543			695			308			563	
Approach Delay, s/veh		16.6			15.9			28.3			24.0	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	32.3	5.5	19.2	9.6	27.4	9.8	14.9				
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5				
Max Green Setting (Gmax), s	30.0	31.0	30.0	30.0	30.0	36.0	30.0	* 30				
Max Q Clear Time (g_c+I1), s	2.6	5.9	3.2	10.7	5.3	10.0	5.4	6.2				
Green Ext Time (p_c), s	0.0	6.9	0.1	3.2	0.6	7.0	0.6	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay			20.1									
HCM 2010 LOS			C									
Notes												

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	166	68	66	44	46	233
Future Vol, veh/h	166	68	66	44	46	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	200	82	80	53	55	281

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	133	0	-	0	588	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1452	-	-	-	466	940
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1452	-	-	-	402	940
Mov Cap-2 Maneuver	-	-	-	-	402	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	530	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1452	-	-	-	402	940
HCM Lane V/C Ratio	0.138	-	-	-	0.138	0.299
HCM Control Delay (s)	7.9	-	-	-	15.4	10.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	176	18	98	292	11	37	137	106	8	125	214
Future Volume (veh/h)	116	176	18	98	292	11	37	137	106	8	125	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	196	3	109	324	10	41	152	26	9	139	40
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	250	485	412	239	891	27	170	477	396	95	398	331
Arrive On Green	0.14	0.27	0.27	0.14	0.26	0.22	0.10	0.26	0.26	0.05	0.21	0.21
Sat Flow, veh/h	1723	1810	1538	1723	3401	105	1774	1863	1547	1774	1863	1548
Grp Volume(v), veh/h	129	196	3	109	163	171	41	152	26	9	139	40
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1786	1774	1863	1547	1774	1863	1548
Q Serve(g_s), s	3.9	5.0	0.1	3.3	4.4	4.4	1.2	3.7	0.7	0.3	3.6	1.2
Cycle Q Clear(g_c), s	3.9	5.0	0.1	3.3	4.4	4.4	1.2	3.7	0.7	0.3	3.6	1.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	485	412	239	450	468	170	477	396	95	398	331
V/C Ratio(X)	0.52	0.40	0.01	0.46	0.36	0.36	0.24	0.32	0.07	0.09	0.35	0.12
Avail Cap(c_a), veh/h	705	1350	1147	461	1039	1079	390	1126	935	380	1126	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	17.0	15.2	22.3	17.0	17.0	23.6	17.0	15.9	25.4	18.9	17.9
Incr Delay (d2), s/veh	1.7	0.5	0.0	1.4	0.5	0.5	0.7	0.4	0.1	0.4	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.6	0.0	1.6	2.1	2.2	0.6	2.0	0.3	0.1	1.9	0.5
LnGrp Delay(d),s/veh	24.0	17.5	15.2	23.7	17.5	17.5	24.3	17.4	15.9	25.8	19.4	18.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		328			443			219			188	
Approach Delay, s/veh		20.0			19.0			18.5			19.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	19.1	9.4	16.1	12.2	18.8	7.0	18.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0
Max Q Clear Time (g_c+I1), s	5.3	7.0	3.2	5.6	5.9	6.4	2.3	5.7
Green Ext Time (p_c), s	0.1	3.2	0.0	1.8	0.3	3.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	397	138	168	582	7	198	2	166	16	3	18
Future Volume (veh/h)	6	397	138	168	582	7	198	2	166	16	3	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.94	0.95		0.95	0.96		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	441	121	187	647	8	220	2	32	18	3	3
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	34	1066	290	254	1839	23	476	526	427	470	235	235
Arrive On Green	0.02	0.40	0.37	0.15	0.53	0.50	0.28	0.28	0.28	0.28	0.28	0.27
Sat Flow, veh/h	1723	2655	721	1723	3475	43	1339	1863	1509	1308	833	833
Grp Volume(v), veh/h	7	284	278	187	320	335	220	2	32	18	0	6
Grp Sat Flow(s),veh/h/ln	1723	1719	1658	1723	1719	1799	1339	1863	1509	1308	0	1665
Q Serve(g_s), s	0.3	8.4	8.7	7.4	7.7	7.7	10.1	0.1	1.1	0.7	0.0	0.2
Cycle Q Clear(g_c), s	0.3	8.4	8.7	7.4	7.7	7.7	10.3	0.1	1.1	0.8	0.0	0.2
Prop In Lane	1.00		0.44	1.00		0.02	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	34	690	665	254	910	952	476	526	427	470	0	471
V/C Ratio(X)	0.21	0.41	0.42	0.74	0.35	0.35	0.46	0.00	0.08	0.04	0.00	0.01
Avail Cap(c_a), veh/h	750	1014	978	508	1014	1061	869	1073	869	670	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	15.3	15.7	29.0	9.7	9.7	22.1	18.3	18.7	18.6	0.0	18.6
Incr Delay (d2), s/veh	3.0	0.8	0.9	4.1	0.5	0.5	0.7	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.1	4.2	3.8	3.8	3.9	3.8	0.0	0.5	0.3	0.0	0.1
LnGrp Delay(d),s/veh	37.4	16.1	16.6	33.1	10.2	10.2	22.8	18.3	18.8	18.7	0.0	18.6
LnGrp LOS	D	B	B	C	B	B	C	B	B	B		B
Approach Vol, veh/h		569			842			254			24	
Approach Delay, s/veh		16.6			15.3			22.2			18.6	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	32.6		24.1	5.4	41.7		24.1
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	9.4	10.7		2.8	2.3	9.7		12.3
Green Ext Time (p_c), s	0.4	15.9		0.9	0.0	16.2		0.9

Intersection Summary		
HCM 2010 Ctrl Delay		16.8
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	330	16	72	560	125	32	91	91	103	88	65
Future Volume (veh/h)	11	330	16	72	560	125	32	91	91	103	88	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	371	16	81	629	65	36	102	9	116	99	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	1211	52	144	1410	618	370	388	311	229	240	204
Arrive On Green	0.03	0.35	0.32	0.08	0.40	0.40	0.21	0.21	0.21	0.13	0.13	0.00
Sat Flow, veh/h	1774	3455	149	1774	3539	1551	1774	1863	1490	1774	1863	1583
Grp Volume(v), veh/h	12	190	197	81	629	65	36	102	9	116	99	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1834	1774	1770	1551	1774	1863	1490	1774	1863	1583
Q Serve(g_s), s	0.5	5.4	5.5	3.0	9.0	1.8	1.1	3.2	0.3	4.2	3.4	0.0
Cycle Q Clear(g_c), s	0.5	5.4	5.5	3.0	9.0	1.8	1.1	3.2	0.3	4.2	3.4	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	621	643	144	1410	618	370	388	311	229	240	204
V/C Ratio(X)	0.20	0.31	0.31	0.56	0.45	0.11	0.10	0.26	0.03	0.51	0.41	0.00
Avail Cap(c_a), veh/h	806	1072	1111	806	2143	939	806	846	677	550	577	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.6	16.4	16.4	30.7	15.3	13.1	22.2	23.0	21.9	28.1	27.8	0.0
Incr Delay (d2), s/veh	1.6	0.6	0.6	3.4	0.5	0.2	0.1	0.4	0.0	1.7	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.7	2.9	1.6	4.5	0.8	0.6	1.7	0.1	2.2	1.8	0.0
LnGrp Delay(d),s/veh	34.3	17.0	17.0	34.1	15.7	13.3	22.3	23.3	21.9	29.9	28.9	0.0
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	
Approach Vol, veh/h		399			775			147			215	
Approach Delay, s/veh		17.5			17.5			23.0			29.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	28.3		12.9	6.3	31.6		18.5
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	5.0	7.5		6.2	2.5	11.0		5.2
Green Ext Time (p_c), s	0.2	14.9		0.7	0.0	14.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	98	33	208	136	9	57	222	171	6	441	205
Future Volume (veh/h)	91	98	33	208	136	9	57	222	171	6	441	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	106	114	0	242	158	0	66	258	56	7	513	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	725	0	305	502	427	350	874	186	103	1039	0
Arrive On Green	0.11	0.20	0.00	0.17	0.27	0.00	0.30	0.30	0.30	0.30	0.30	0.00
Sat Flow, veh/h	1774	3632	0	1774	1863	1583	882	2900	619	14	3533	0
Grp Volume(v), veh/h	106	114	0	242	158	0	66	156	158	279	241	0
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1863	1583	882	1770	1749	1852	1610	0
Q Serve(g_s), s	2.1	1.0	0.0	4.9	2.5	0.0	2.5	2.5	2.6	0.0	4.6	0.0
Cycle Q Clear(g_c), s	2.1	1.0	0.0	4.9	2.5	0.0	7.1	2.5	2.6	4.6	4.6	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.35	0.03		0.00
Lane Grp Cap(c), veh/h	190	725	0	305	502	427	350	533	527	657	485	0
V/C Ratio(X)	0.56	0.16	0.00	0.79	0.31	0.00	0.19	0.29	0.30	0.42	0.50	0.00
Avail Cap(c_a), veh/h	952	2849	0	1428	1649	1402	818	1472	1455	1627	1339	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.8	12.2	0.0	14.8	10.9	0.0	13.6	10.0	10.0	10.7	10.7	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	1.8	0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.0	2.5	1.3	0.0	0.6	1.2	1.2	2.4	2.0	0.0
LnGrp Delay(d),s/veh	16.7	12.2	0.0	16.6	11.0	0.0	13.7	10.1	10.1	10.9	11.0	0.0
LnGrp LOS	B	B		B	B		B	B	B	B	B	
Approach Vol, veh/h		220			400			380			520	
Approach Delay, s/veh		14.4			14.4			10.7			10.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	11.6		15.2	8.0	14.0		15.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	6.9	3.0		6.6	4.1	4.5		9.1
Green Ext Time (p_c), s	0.1	0.5		1.8	0.0	0.5		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	135	85	302	323	18	67	333	304	58	515	161
Future Volume (veh/h)	58	135	85	302	323	18	67	333	304	58	515	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	69	161	5	360	385	2	80	396	72	69	613	88
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	139	581	18	283	875	389	126	1251	551	135	1269	565
Arrive On Green	0.08	0.17	0.14	0.16	0.25	0.25	0.07	0.36	0.36	0.08	0.37	0.37
Sat Flow, veh/h	1774	3502	108	1774	3539	1576	1723	3438	1515	1723	3438	1532
Grp Volume(v), veh/h	69	81	85	360	385	2	80	396	72	69	613	88
Grp Sat Flow(s),veh/h/ln	1774	1770	1841	1774	1770	1576	1723	1719	1515	1723	1719	1532
Q Serve(g_s), s	2.6	2.8	2.8	11.0	6.3	0.1	3.1	5.7	2.2	2.6	9.4	2.6
Cycle Q Clear(g_c), s	2.6	2.8	2.8	11.0	6.3	0.1	3.1	5.7	2.2	2.6	9.4	2.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	293	305	283	875	389	126	1251	551	135	1269	565
V/C Ratio(X)	0.50	0.28	0.28	1.27	0.44	0.01	0.63	0.32	0.13	0.51	0.48	0.16
Avail Cap(c_a), veh/h	283	989	1029	283	1978	880	400	2071	913	400	2071	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	25.1	25.2	29.0	21.9	19.6	31.0	15.8	14.6	30.5	16.7	14.5
Incr Delay (d2), s/veh	2.7	0.5	0.5	146.7	0.3	0.0	2.0	0.1	0.1	1.1	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	1.5	16.8	3.1	0.0	1.5	2.7	0.9	1.3	4.5	1.2
LnGrp Delay(d),s/veh	33.2	25.6	25.7	175.7	22.3	19.6	33.0	15.9	14.7	31.6	17.3	14.8
LnGrp LOS	C	C	C	F	C	B	C	B	B	C	B	B
Approach Vol, veh/h		235			747			548			770	
Approach Delay, s/veh		27.9			96.2			18.2			18.3	
Approach LOS		C			F			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	29.1	15.0	15.4	9.0	29.4	9.4	21.0
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	4.6	7.7	13.0	4.8	5.1	11.4	4.6	8.3
Green Ext Time (p_c), s	0.0	13.1	0.0	3.7	0.1	12.4	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	0	10	2	15	25	10	151	0	0	152	115
Future Vol, veh/h	62	0	10	2	15	25	10	151	0	0	152	115
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	98	0	16	3	24	40	16	240	0	0	241	183
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10	9	9.7	10.2
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	86%	5%	0%	0%
Vol Thru, %	83%	100%	0%	36%	100%	0%
Vol Right, %	0%	0%	14%	60%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	101	72	42	152	115
LT Vol	10	0	62	2	0	0
Through Vol	50	101	0	15	152	0
RT Vol	0	0	10	25	0	115
Lane Flow Rate	96	160	114	67	241	183
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.147	0.242	0.18	0.1	0.358	0.235
Departure Headway (Hd)	5.525	5.441	5.66	5.373	5.343	4.637
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	643	654	627	671	668	767
Service Time	3.315	3.232	3.754	3.373	3.123	2.417
HCM Lane V/C Ratio	0.149	0.245	0.182	0.1	0.361	0.239
HCM Control Delay	9.3	10	10	9	11.1	8.9
HCM Lane LOS	A	A	A	A	B	A
HCM 95th-tile Q	0.5	0.9	0.7	0.3	1.6	0.9

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	138	13	2	3	12	383
Future Vol, veh/h	138	13	2	3	12	383
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	184	17	3	4	16	511

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	25	8	16	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	981	1063	1601	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	979	1063	1601	-	-	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1601	-	979	1063	-	-
HCM Lane V/C Ratio	0.002	-	0.188	0.016	-	-
HCM Control Delay (s)	7.3	0	9.5	8.4	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	190	54	214	350	49	72	283	117	37	532	99
Future Volume (veh/h)	87	190	54	214	350	49	72	283	117	37	532	99
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	101	221	47	249	407	7	84	329	81	43	619	107
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	166	583	121	330	1037	449	142	1240	549	86	963	166
Arrive On Green	0.09	0.20	0.18	0.19	0.29	0.29	0.08	0.36	0.36	0.05	0.33	0.31
Sat Flow, veh/h	1774	2904	605	1774	3539	1533	1723	3438	1523	1723	2931	506
Grp Volume(v), veh/h	101	133	135	249	407	7	84	329	81	43	363	363
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1770	1533	1723	1719	1523	1723	1719	1717
Q Serve(g_s), s	4.3	5.1	5.3	10.5	7.2	0.3	3.7	5.3	2.8	1.9	14.2	14.3
Cycle Q Clear(g_c), s	4.3	5.1	5.3	10.5	7.2	0.3	3.7	5.3	2.8	1.9	14.2	14.3
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	166	355	349	330	1037	449	142	1240	549	86	565	564
V/C Ratio(X)	0.61	0.37	0.39	0.76	0.39	0.02	0.59	0.27	0.15	0.50	0.64	0.64
Avail Cap(c_a), veh/h	1045	1043	1025	1045	2086	903	1016	2026	897	1016	1013	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	27.3	27.6	30.4	22.3	19.8	34.9	17.8	17.0	36.5	22.5	22.8
Incr Delay (d2), s/veh	3.6	0.7	0.7	3.5	0.2	0.0	3.9	0.1	0.1	4.4	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.6	2.6	5.4	3.5	0.1	1.9	2.5	1.2	1.0	6.8	7.0
LnGrp Delay(d),s/veh	38.0	27.9	28.3	34.0	22.5	19.8	38.8	17.9	17.2	40.9	23.8	24.0
LnGrp LOS	D	C	C	C	C	B	D	B	B	D	C	C
Approach Vol, veh/h		369			663			494			769	
Approach Delay, s/veh		30.8			26.8			21.4			24.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	19.8	10.5	29.9	11.4	27.1	8.0	32.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	12.5	7.3	5.7	16.3	6.3	9.2	3.9	7.3
Green Ext Time (p_c), s	0.7	4.7	0.2	7.8	0.3	4.6	0.1	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	722	887	16	25	495
Future Volume (vph)	174	722	887	16	25	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3429		1770	1583
Flt Permitted	0.18	1.00	1.00		0.95	1.00
Satd. Flow (perm)	331	3438	3429		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	198	820	1008	18	28	562
RTOR Reduction (vph)	0	0	1	0	0	345
Lane Group Flow (vph)	198	820	1025	0	28	218
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	39.2	43.8	30.7		13.3	13.3
Effective Green, g (s)	40.4	44.4	31.3		13.5	13.5
Actuated g/C Ratio	0.61	0.67	0.47		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	394	2316	1628		362	324
v/s Ratio Prot	c0.07	0.24	c0.30		0.02	
v/s Ratio Perm	0.24					c0.14
v/c Ratio	0.50	0.35	0.63		0.08	0.67
Uniform Delay, d1	7.0	4.6	13.0		21.2	24.2
Progression Factor	0.88	0.40	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	0.8		0.0	4.3
Delay (s)	6.5	1.9	13.7		21.2	28.4
Level of Service	A	A	B		C	C
Approach Delay (s)		2.8	13.7		28.1	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	12.2
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	214	16	821	1	262	13	265	784	138	227	16
Future Volume (veh/h)	20	214	16	821	1	262	13	265	784	138	227	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	22	235	14	902	1	0	14	291	529	152	249	15
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	82	478	28	1131	1508	675	75	778	1528	335	932	56
Arrive On Green	0.05	0.14	0.12	0.34	0.44	0.00	0.04	0.23	0.23	0.10	0.28	0.26
Sat Flow, veh/h	1774	3396	201	3343	3438	1538	1723	3438	2707	3343	3296	198
Grp Volume(v), veh/h	22	122	127	902	1	0	14	291	529	152	129	135
Grp Sat Flow(s),veh/h/ln	1774	1770	1827	1672	1719	1538	1723	1719	1354	1672	1719	1775
Q Serve(g_s), s	1.0	5.4	5.5	20.7	0.0	0.0	0.7	6.1	9.0	3.6	4.9	5.0
Cycle Q Clear(g_c), s	1.0	5.4	5.5	20.7	0.0	0.0	0.7	6.1	9.0	3.6	4.9	5.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	82	249	257	1131	1508	675	75	778	1528	335	486	502
V/C Ratio(X)	0.27	0.49	0.49	0.80	0.00	0.00	0.19	0.37	0.35	0.45	0.27	0.27
Avail Cap(c_a), veh/h	638	1117	1153	1262	2190	980	508	1703	2257	1223	973	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	33.6	33.7	25.4	13.4	0.0	39.1	27.7	10.0	36.0	23.6	23.7
Incr Delay (d2), s/veh	0.6	3.1	3.1	4.2	0.0	0.0	0.4	0.3	0.1	2.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.9	3.0	10.2	0.0	0.0	0.3	2.9	3.3	1.8	2.4	2.5
LnGrp Delay(d),s/veh	39.7	36.7	36.8	29.6	13.4	0.0	39.5	28.0	10.1	38.0	23.9	24.0
LnGrp LOS	D	D	D	C	B		D	C	B	D	C	C
Approach Vol, veh/h		271			903			834			416	
Approach Delay, s/veh		37.0			29.6			16.9			29.1	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.7	16.4	7.7	28.0	7.9	41.2	12.5	23.2
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	22.7	7.5	2.7	7.0	3.0	2.0	5.6	11.0
Green Ext Time (p_c), s	3.9	3.0	0.0	6.5	0.0	3.0	1.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	5	463	24	142	20	614	224	187	923	14
Future Volume (veh/h)	0	0	5	463	24	142	20	614	224	187	923	14
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				564	0	26	22	722	0	220	1086	14
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.85	0.92	0.85	0.92	0.85	0.85	0.85	0.85	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				875	0	386	324	1220	518	292	2072	27
Arrive On Green				0.25	0.00	0.25	0.33	0.33	0.00	0.16	0.58	0.58
Sat Flow, veh/h				3548	0	1564	510	3725	1583	1774	3578	46
Grp Volume(v), veh/h				564	0	26	22	722	0	220	537	563
Grp Sat Flow(s),veh/h/ln				1774	0	1564	510	1863	1583	1774	1770	1855
Q Serve(g_s), s				6.5	0.0	0.6	1.4	7.4	0.0	5.4	8.4	8.4
Cycle Q Clear(g_c), s				6.5	0.0	0.6	1.4	7.4	0.0	5.4	8.4	8.4
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h				875	0	386	324	1220	518	292	1025	1074
V/C Ratio(X)				0.64	0.00	0.07	0.07	0.59	0.00	0.75	0.52	0.52
Avail Cap(c_a), veh/h				2784	0	1227	446	2111	897	619	1025	1074
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				15.5	0.0	13.2	10.8	12.9	0.0	18.3	5.8	5.8
Incr Delay (d2), s/veh				0.3	0.0	0.0	0.0	0.2	0.0	5.5	0.2	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	0.3	0.2	3.8	0.0	3.1	4.1	4.3
LnGrp Delay(d),s/veh				15.8	0.0	13.3	10.9	13.0	0.0	23.8	6.1	6.1
LnGrp LOS				B		B	B	B		C	A	A
Approach Vol, veh/h					590			744			1320	
Approach Delay, s/veh					15.7			13.0			9.0	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.5	19.0				30.6		15.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	7.4	9.4				10.4		8.5
Green Ext Time (p_c), s	0.6	5.4				7.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	550	0	0	326	609	785
Future Volume (vph)	550	0	0	326	609	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	679	0	0	402	752	969
RTOR Reduction (vph)	0	0	0	151	0	575
Lane Group Flow (vph)	679	0	0	251	752	394
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	15.2			15.6	15.6	16.6
Effective Green, g (s)	16.2			16.6	16.6	16.6
Actuated g/C Ratio	0.40			0.41	0.41	0.41
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1981			1133	1396	1133
v/s Ratio Prot	c0.14			0.09	c0.22	0.14
v/s Ratio Perm						
v/c Ratio	0.34			0.22	0.54	0.35
Uniform Delay, d1	8.6			7.9	9.2	8.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.4	0.2
Delay (s)	8.7			8.0	9.6	8.5
Level of Service	A			A	A	A
Approach Delay (s)		8.7	8.0		9.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	40.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	478	506	12	101	521	200	24	221	48	170	326	613
Future Volume (veh/h)	478	506	12	101	521	200	24	221	48	170	326	613
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	549	582	13	116	599	0	28	254	44	195	375	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	646	1621	36	151	1230	550	60	440	75	292	498	0
Arrive On Green	0.19	0.46	0.45	0.09	0.36	0.00	0.03	0.15	0.14	0.17	0.28	0.00
Sat Flow, veh/h	3442	3539	79	1723	3438	1538	1774	3024	517	1723	1810	0
Grp Volume(v), veh/h	549	291	304	116	599	0	28	147	151	195	375	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1849	1723	1719	1538	1774	1770	1772	1723	1810	0
Q Serve(g_s), s	17.7	12.2	12.2	7.5	15.5	0.0	1.8	8.9	9.1	12.1	21.7	0.0
Cycle Q Clear(g_c), s	17.7	12.2	12.2	7.5	15.5	0.0	1.8	8.9	9.1	12.1	21.7	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h	646	810	847	151	1230	550	60	257	257	292	498	0
V/C Ratio(X)	0.85	0.36	0.36	0.77	0.49	0.00	0.47	0.57	0.59	0.67	0.75	0.00
Avail Cap(c_a), veh/h	1247	1260	1317	311	1825	816	333	941	942	474	1120	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.0	20.1	20.2	51.1	28.6	0.0	54.3	45.6	45.9	44.5	38.0	0.0
Incr Delay (d2), s/veh	1.2	1.0	0.9	3.1	1.1	0.0	2.1	7.1	7.5	1.0	8.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	6.2	6.5	3.7	7.5	0.0	0.9	4.8	5.0	5.9	12.0	0.0
LnGrp Delay(d),s/veh	46.2	21.1	21.1	54.2	29.7	0.0	56.5	52.7	53.3	45.5	46.1	0.0
LnGrp LOS	D	C	C	D	C		E	D	D	D	D	
Approach Vol, veh/h		1144			715			326			570	
Approach Delay, s/veh		33.2			33.7			53.3			45.9	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	56.5	7.9	36.2	25.5	45.0	23.4	20.7
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 20	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	19.5	14.2	3.8	23.7	19.7	17.5	14.1	11.1
Green Ext Time (p_c), s	0.0	27.8	0.0	5.1	0.3	22.7	3.8	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	680	0	0	823	68	62	498	101	0	0	0
Future Volume (veh/h)	198	680	0	0	823	68	62	498	101	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	239	819	0	0	992	76	75	600	14			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	338	2403	0	0	1787	137	412	821	359			
Arrive On Green	0.20	1.00	0.00	0.00	0.54	0.53	0.23	0.23	0.23			
Sat Flow, veh/h	3442	3632	0	0	3425	255	1774	3539	1545			
Grp Volume(v), veh/h	239	819	0	0	527	541	75	600	14			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1817	1774	1770	1545			
Q Serve(g_s), s	5.8	0.0	0.0	0.0	17.7	17.7	3.1	14.1	0.6			
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	17.7	17.7	3.1	14.1	0.6			
Prop In Lane	1.00		0.00	0.00		0.14	1.00		1.00			
Lane Grp Cap(c), veh/h	338	2403	0	0	949	974	412	821	359			
V/C Ratio(X)	0.71	0.34	0.00	0.00	0.56	0.56	0.18	0.73	0.04			
Avail Cap(c_a), veh/h	887	2403	0	0	949	974	615	1227	536			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	34.9	0.0	0.0	0.0	13.8	13.8	27.7	32.0	26.8			
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	2.3	2.3	0.3	1.5	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.0	9.3	9.5	1.5	7.1	0.3			
LnGrp Delay(d),s/veh	35.2	0.0	0.0	0.0	16.1	16.1	28.0	33.5	26.8			
LnGrp LOS	D	A			B	B	C	C	C			
Approach Vol, veh/h		1058			1068			689				
Approach Delay, s/veh		8.0			16.1			32.7				
Approach LOS		A			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		65.1			12.8	52.3		24.9
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		49.9			* 23	22.7		31.0
Max Q Clear Time (g_c+I1), s		2.0			7.8	19.7		16.1
Green Ext Time (p_c), s		23.2			0.8	2.6		4.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	699	63	119	759	0	0	0	0	172	1058	402
Future Volume (veh/h)	0	699	63	119	759	0	0	0	0	172	1058	402
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	874	0	149	949	0				215	1322	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80				0.80	0.80	0.80
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	977	0	181	1496	0				235	1527	773
Arrive On Green	0.00	0.28	0.00	0.20	0.85	0.00				0.49	0.49	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				481	3127	1583
Grp Volume(v), veh/h	0	874	0	149	949	0				821	716	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1839	1770	1583
Q Serve(g_s), s	0.0	21.4	0.0	7.2	8.0	0.0				37.2	31.3	0.0
Cycle Q Clear(g_c), s	0.0	21.4	0.0	7.2	8.0	0.0				37.2	31.3	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.26		1.00
Lane Grp Cap(c), veh/h	0	977	0	181	1496	0				898	864	773
V/C Ratio(X)	0.00	0.89	0.00	0.82	0.63	0.00				0.91	0.83	0.00
Avail Cap(c_a), veh/h	0	977	0	181	1496	0				923	889	795
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.75	0.75	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	31.3	0.0	35.0	4.6	0.0				21.3	19.8	0.0
Incr Delay (d2), s/veh	0.0	12.4	0.0	20.1	1.5	0.0				13.3	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.1	0.0	4.5	3.7	0.0				22.0	16.7	0.0
LnGrp Delay(d),s/veh	0.0	43.7	0.0	55.1	6.2	0.0				34.6	26.4	0.0
LnGrp LOS		D		E	A					C	C	
Approach Vol, veh/h		874			1098						1537	
Approach Delay, s/veh		43.7			12.8						30.8	
Approach LOS		D			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.2	28.9		47.9		42.1		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 9	22.7		* 45		35.9		
Max Q Clear Time (g_c+I1), s	9.2	23.4		39.2		10.0		
Green Ext Time (p_c), s	0.0	0.0		4.6		16.4		

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	451	231	461	318	87	208	766	551	100	513	116
Future Volume (veh/h)	190	451	231	461	318	87	208	766	551	100	513	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	221	524	91	536	370	79	242	891	298	116	597	118
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	338	728	325	609	827	175	278	1238	554	173	856	169
Arrive On Green	0.10	0.21	0.21	0.18	0.29	0.28	0.16	0.35	0.35	0.10	0.29	0.28
Sat Flow, veh/h	3343	3438	1536	3343	2826	597	1774	3539	1583	1774	2947	581
Grp Volume(v), veh/h	221	524	91	536	224	225	242	891	298	116	358	357
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1672	1719	1704	1774	1770	1583	1774	1770	1759
Q Serve(g_s), s	6.4	14.3	5.0	15.7	10.6	10.9	13.4	22.0	15.2	6.4	18.1	18.2
Cycle Q Clear(g_c), s	6.4	14.3	5.0	15.7	10.6	10.9	13.4	22.0	15.2	6.4	18.1	18.2
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	338	728	325	609	503	499	278	1238	554	173	514	511
V/C Ratio(X)	0.65	0.72	0.28	0.88	0.44	0.45	0.87	0.72	0.54	0.67	0.70	0.70
Avail Cap(c_a), veh/h	837	1275	569	704	569	564	374	1418	634	233	568	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	36.9	33.2	40.1	28.9	29.2	41.4	28.4	26.2	43.8	31.7	32.0
Incr Delay (d2), s/veh	1.6	0.5	0.2	10.2	0.2	0.2	12.6	1.5	0.8	1.7	3.3	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	6.8	2.1	8.1	5.1	5.1	7.6	11.0	6.7	3.2	9.3	9.3
LnGrp Delay(d),s/veh	45.1	37.4	33.4	50.3	29.2	29.4	54.0	30.0	27.0	45.5	35.0	35.4
LnGrp LOS	D	D	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		836			985			1431			831	
Approach Delay, s/veh		39.0			40.7			33.4			36.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	39.2	22.3	25.3	19.8	33.2	14.2	33.4
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	36.0	* 21	31.0	* 25	32.0
Max Q Clear Time (g_c+I1), s	8.4	24.0	17.7	16.3	15.4	20.2	8.4	12.9
Green Ext Time (p_c), s	0.1	9.8	0.4	3.6	0.2	7.6	0.5	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Notes

Intersection												
Int Delay, s/veh	11.2											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	0	35	29	101	78	0	0	0	0	320	1	31
Future Vol, veh/h	0	35	29	101	78	0	0	0	0	320	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	31	106	82	0	0	0	0	337	1	33

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	37	0	0				332	332	82
Stage 1	-	-	-	-	-	-				295	295	-
Stage 2	-	-	-	-	-	-				37	37	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1574	-	0				663	588	978
Stage 1	0	-	-	-	-	0				755	669	-
Stage 2	0	-	-	-	-	0				985	864	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1574	-	-				618	0	978
Mov Cap-2 Maneuver	-	-	-	-	-	-				618	0	-
Stage 1	-	-	-	-	-	-				704	0	-
Stage 2	-	-	-	-	-	-				985	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.2	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1574	-	618	978
HCM Lane V/C Ratio	-	-	0.068	-	0.545	0.034
HCM Control Delay (s)	-	-	7.5	-	17.6	8.8
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	-	3.3	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	342	0	0	75	151	105	3	55	0	0	0
Future Vol, veh/h	15	342	0	0	75	151	105	3	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	360	0	0	79	159	111	3	58	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	79	0	-	-	-	0	471	471	360
Stage 1	-	-	-	-	-	-	392	392	-
Stage 2	-	-	-	-	-	-	79	79	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1519	-	0	0	-	-	551	491	684
Stage 1	-	-	0	0	-	-	683	606	-
Stage 2	-	-	0	0	-	-	944	829	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1519	-	-	-	-	-	545	0	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	545	0	-
Stage 1	-	-	-	-	-	-	676	0	-
Stage 2	-	-	-	-	-	-	944	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	545	684	1519	-	-	-
HCM Lane V/C Ratio	0.203	0.089	0.01	-	-	-
HCM Control Delay (s)	13.3	10.8	7.4	-	-	-
HCM Lane LOS	B	B	A	-	-	-
HCM 95th %tile Q(veh)	0.8	0.3	0	-	-	-

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	240	0	0	211	146	3	1	189	0	0	0
Future Vol, veh/h	9	240	0	0	211	146	3	1	189	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	253	0	0	222	154	3	1	199	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9	10.6	10.7
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	75%	0%	100%	0%	0%	0%	0%
Vol Thru, %	25%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	189	9	120	120	211	146
LT Vol	3	0	9	0	0	0	0
Through Vol	1	0	0	120	120	211	0
RT Vol	0	189	0	0	0	0	146
Lane Flow Rate	4	199	9	126	126	222	154
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.008	0.305	0.017	0.21	0.149	0.354	0.215
Departure Headway (Hd)	6.591	5.512	6.502	5.996	4.245	5.738	5.032
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	544	653	551	599	844	629	715
Service Time	4.322	3.242	4.233	3.728	1.976	3.464	2.757
HCM Lane V/C Ratio	0.007	0.305	0.016	0.21	0.149	0.353	0.215
HCM Control Delay	9.4	10.7	9.3	10.3	7.7	11.6	9.1
HCM Lane LOS	A	B	A	B	A	B	A
HCM 95th-tile Q	0	1.3	0.1	0.8	0.5	1.6	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	0	384	0	0	0	286	65	0	0	115	70
Future Volume (veh/h)	61	0	384	0	0	0	286	65	0	0	115	70
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	66	0	31				308	70	0	0	124	8
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	104	0	93				402	1145	0	0	418	355
Arrive On Green	0.06	0.00	0.06				0.23	0.61	0.00	0.00	0.22	0.22
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	66	0	31				308	70	0	0	124	8
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	0.9	0.0	0.5				4.0	0.4	0.0	0.0	1.4	0.1
Cycle Q Clear(g_c), s	0.9	0.0	0.5				4.0	0.4	0.0	0.0	1.4	0.1
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	104	0	93				402	1145	0	0	418	355
V/C Ratio(X)	0.64	0.00	0.33				0.77	0.06	0.00	0.00	0.30	0.02
Avail Cap(c_a), veh/h	1741	0	1553				1465	4592	0	0	4592	3903
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	11.1				8.9	1.9	0.0	0.0	7.9	7.4
Incr Delay (d2), s/veh	2.4	0.0	0.8				1.2	0.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.4				2.0	0.2	0.0	0.0	0.7	0.0
LnGrp Delay(d),s/veh	13.7	0.0	11.8				10.0	2.0	0.0	0.0	8.3	7.4
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		97						378			132	
Approach Delay, s/veh		13.1						8.5			8.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		19.0		5.4	9.5	9.5		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.4		2.9	6.0	3.4		
Green Ext Time (p_c), s		1.8		0.0	0.1	1.8		

Intersection Summary		
HCM 2010 Ctrl Delay		9.2
HCM 2010 LOS		A

Notes

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	174	16	0	2	24	1	5	12	2	4	18	354
Future Vol, veh/h	174	16	0	2	24	1	5	12	2	4	18	354
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	212	20	0	2	29	1	6	15	2	5	22	432
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.6	8.4	11.6
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	92%	7%	1%
Vol Thru, %	63%	8%	89%	5%
Vol Right, %	11%	0%	4%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	190	27	376
LT Vol	5	174	2	4
Through Vol	12	16	24	18
RT Vol	2	0	1	354
Lane Flow Rate	23	232	33	459
Geometry Grp	1	1	1	1
Degree of Util (X)	0.033	0.333	0.048	0.523
Departure Headway (Hd)	5.124	5.178	5.283	4.106
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	688	671	876
Service Time	3.19	3.25	3.368	2.137
HCM Lane V/C Ratio	0.033	0.337	0.049	0.524
HCM Control Delay	8.4	10.8	8.6	11.6
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.1	1.5	0.2	3.1

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	65	26	298	134	0	9	1	143	3	16	13
Future Vol, veh/h	1	65	26	298	134	0	9	1	143	3	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	83	33	382	172	0	12	1	183	4	21	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	117	0	0	1057	1039	101	1132	1055	172
Stage 1	-	-	-	-	-	-	103	103	-	936	936	-
Stage 2	-	-	-	-	-	-	954	936	-	196	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	-	1471	-	-	203	231	954	180	226	872
Stage 1	-	-	-	-	-	-	903	810	-	318	344	-
Stage 2	-	-	-	-	-	-	311	344	-	806	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1405	-	-	1470	-	-	140	165	953	112	161	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	165	-	112	161	-
Stage 1	-	-	-	-	-	-	902	809	-	318	245	-
Stage 2	-	-	-	-	-	-	199	245	-	649	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.7	12.2	21.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	694	1405	-	-	1470	-	-	254
HCM Lane V/C Ratio	0.283	0.001	-	-	0.26	-	-	0.146
HCM Control Delay (s)	12.2	7.6	0	-	8.3	0	-	21.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	1	-	-	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	0	165	10	0	342
Future Vol, veh/h	25	0	165	10	0	342
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	199	12	0	412

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	617	205	0	0	211	0
Stage 1	205	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	453	836	-	-	1360	-
Stage 1	829	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	453	836	-	-	1360	-
Mov Cap-2 Maneuver	453	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1360	-
HCM Lane V/C Ratio	-	-	0.066	-	-
HCM Control Delay (s)	-	-	13.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	295	679	97	72	104	180	86	135	247	145	66
Future Volume (veh/h)	149	295	679	97	72	104	180	86	135	247	145	66
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	151	298	447	98	73	39	182	87	21	249	146	11
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	1339	598	304	1161	516	445	456	107	418	535	239
Arrive On Green	0.13	0.38	0.38	0.09	0.33	0.33	0.13	0.16	0.15	0.12	0.15	0.15
Sat Flow, veh/h	3442	3539	1582	3442	3539	1575	3442	2844	664	3442	3539	1583
Grp Volume(v), veh/h	151	298	447	98	73	39	182	53	55	249	146	11
Grp Sat Flow(s),veh/h/ln	1721	1770	1582	1721	1770	1575	1721	1770	1738	1721	1770	1583
Q Serve(g_s), s	2.6	3.6	15.6	1.7	0.9	1.1	3.1	1.6	1.8	4.4	2.3	0.4
Cycle Q Clear(g_c), s	2.6	3.6	15.6	1.7	0.9	1.1	3.1	1.6	1.8	4.4	2.3	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	434	1339	598	304	1161	516	445	284	279	418	535	239
V/C Ratio(X)	0.35	0.22	0.75	0.32	0.06	0.08	0.41	0.19	0.20	0.60	0.27	0.05
Avail Cap(c_a), veh/h	1163	3410	1524	1163	3365	1497	1163	1691	1660	1152	3377	1511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	13.4	17.1	27.2	14.7	14.7	25.5	23.1	23.3	26.5	23.9	23.1
Incr Delay (d2), s/veh	0.2	0.1	2.3	0.2	0.0	0.0	0.2	0.5	0.5	0.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	7.2	0.8	0.4	0.5	1.5	0.8	0.9	2.1	1.2	0.2
LnGrp Delay(d),s/veh	25.6	13.5	19.4	27.4	14.7	14.8	25.7	23.6	23.8	27.0	24.3	23.2
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		896			210			290			406	
Approach Delay, s/veh		18.5			20.7			25.0			25.9	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	28.1	12.2	13.7	12.0	25.7	11.7	14.2
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60
Max Q Clear Time (g_c+I1), s	3.7	17.6	5.1	4.3	4.6	3.1	6.4	3.8
Green Ext Time (p_c), s	0.0	5.1	0.1	2.7	0.1	5.1	0.2	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	506	105	34	256	27	52	17	25	3	4	2
Future Volume (veh/h)	13	506	105	34	256	27	52	17	25	3	4	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.98	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	14	544	71	37	275	26	56	18	1	3	4	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	957	812	34	895	85	292	30	119	196	47	0
Arrive On Green	0.00	0.51	0.51	0.02	0.53	0.52	0.08	0.08	0.08	0.09	0.09	0.00
Sat Flow, veh/h	1774	1863	1580	1774	1676	158	1241	399	1552	386	515	0
Grp Volume(v), veh/h	14	544	71	37	0	301	74	0	1	7	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1580	1774	0	1834	1640	0	1552	901	0	0
Q Serve(g_s), s	0.1	6.4	0.7	0.6	0.0	2.9	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	6.4	0.7	0.6	0.0	2.9	1.3	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	0.76		1.00	0.43		0.00
Lane Grp Cap(c), veh/h	6	957	812	34	0	980	323	0	119	244	0	0
V/C Ratio(X)	2.53	0.57	0.09	1.07	0.00	0.31	0.23	0.00	0.01	0.03	0.00	0.00
Avail Cap(c_a), veh/h	1081	2362	2004	1081	0	2326	1174	0	1018	1702	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	5.3	4.0	15.7	0.0	4.2	14.3	0.0	13.7	14.5	0.0	0.0
Incr Delay (d2), s/veh	727.4	0.7	0.1	64.7	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	14.6	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.4	0.3	0.9	0.0	1.5	0.6	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	758.0	6.0	4.0	83.2	0.0	4.4	14.4	0.0	13.7	14.5	0.0	0.0
LnGrp LOS	F	A	A	F		A	B		B	B		
Approach Vol, veh/h		629			338			75			7	
Approach Delay, s/veh		22.5			13.0			14.4			14.5	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	20.4		6.9	4.0	21.1		6.9
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.0	40.0		31.0	20.0	40.0		* 21
Max Q Clear Time (g_c+I1), s	2.6	8.4		3.4	2.1	4.9		3.3
Green Ext Time (p_c), s	0.0	7.4		0.2	0.0	7.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	4	154	1	36	2	181	222	80	322	0
Future Vol, veh/h	8	5	4	154	1	36	2	181	222	80	322	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	6	5	193	1	45	3	226	278	100	403	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	11	14.2	12.6	13.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	47%	100%	0%	43%	0%
Vol Thru, %	99%	0%	29%	0%	3%	57%	100%
Vol Right, %	0%	100%	24%	0%	97%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	222	17	154	37	187	215
LT Vol	2	0	8	154	0	80	0
Through Vol	181	0	5	0	1	107	215
RT Vol	0	222	4	0	36	0	0
Lane Flow Rate	229	278	21	192	46	234	268
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.395	0.424	0.044	0.402	0.081	0.415	0.459
Departure Headway (Hd)	6.213	5.497	7.536	7.512	6.31	6.379	6.162
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	579	652	473	477	566	562	582
Service Time	3.97	3.253	5.624	5.272	4.069	4.136	3.919
HCM Lane V/C Ratio	0.396	0.426	0.044	0.403	0.081	0.416	0.46
HCM Control Delay	13	12.3	11	15.3	9.6	13.6	14.1
HCM Lane LOS	B	B	B	C	A	B	B
HCM 95th-tile Q	1.9	2.1	0.1	1.9	0.3	2	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	0	241	0	0	0	155	320	0	0	373	191
Future Volume (veh/h)	260	0	241	0	0	0	155	320	0	0	373	191
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1863
Adj Flow Rate, veh/h	299	0	71				178	368	0	0	429	63
Adj No. of Lanes	1	0	1				1	1	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	347	0	310				232	1192	0	4	795	662
Arrive On Green	0.20	0.00	0.20				0.13	0.64	0.00	0.00	0.43	0.43
Sat Flow, veh/h	1774	0	1583				1774	1863	0	1774	1863	1550
Grp Volume(v), veh/h	299	0	71				178	368	0	0	429	63
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	1774	1863	1550
Q Serve(g_s), s	7.9	0.0	1.8				4.7	4.3	0.0	0.0	8.3	1.2
Cycle Q Clear(g_c), s	7.9	0.0	1.8				4.7	4.3	0.0	0.0	8.3	1.2
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	310				232	1192	0	4	795	662
V/C Ratio(X)	0.86	0.00	0.23				0.77	0.31	0.00	0.00	0.54	0.10
Avail Cap(c_a), veh/h	967	0	863				712	2310	0	712	2310	1923
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	16.5				20.4	3.9	0.0	0.0	10.4	8.3
Incr Delay (d2), s/veh	2.5	0.0	0.1				2.0	0.4	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	1.7				2.4	2.3	0.0	0.0	4.3	0.5
LnGrp Delay(d),s/veh	21.4	0.0	16.6				22.4	4.4	0.0	0.0	11.0	8.4
LnGrp LOS	C		B				C	A			B	A
Approach Vol, veh/h		370						546			492	
Approach Delay, s/veh		20.5						10.3			10.7	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	35.1		13.5	10.4	24.8		
Change Period (Y+Rc), s	3.5	4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s	20.0	60.0		27.0	* 19	60.0		
Max Q Clear Time (g_c+I1), s	0.0	6.3		9.9	6.7	10.3		
Green Ext Time (p_c), s	0.0	10.2		0.2	0.1	10.1		

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	249	99	146	355	67
Future Vol, veh/h	71	249	99	146	355	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	277	110	162	394	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	776	394	394	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	366	655	1165	-	-	0
Stage 1	681	-	-	-	-	0
Stage 2	690	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	331	655	1165	-	-	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1165	-	842	-
HCM Lane V/C Ratio	0.094	-	0.422	-
HCM Control Delay (s)	8.4	-	12.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	2.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	136	147	422	631	19
Future Vol, veh/h	6	136	147	422	631	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	145	156	449	671	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1443	681	691	0	-	0
Stage 1	681	-	-	-	-	-
Stage 2	762	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	146	450	904	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	450	904	-	-	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	2.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	904	-	399	-	-
HCM Lane V/C Ratio	0.173	-	0.379	-	-
HCM Control Delay (s)	9.8	0	19.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	804	191	0	594	584	0	0	0	534	2	166
Future Volume (veh/h)	0	804	191	0	594	584	0	0	0	534	2	166
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	829	0	0	612	0				552	0	47
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2304	0	0	1604	718				1068	0	477
Arrive On Green	0.00	0.47	0.00	0.00	0.47	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	829	0	0	612	0				552	0	47
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	3.7	0.0	0.0	4.0	0.0				4.4	0.0	0.7
Cycle Q Clear(g_c), s	0.0	3.7	0.0	0.0	4.0	0.0				4.4	0.0	0.7
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2304	0	0	1604	718				1068	0	477
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.38	0.00				0.52	0.00	0.10
Avail Cap(c_a), veh/h	0	8757	0	0	6095	2727				3196	0	1426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.9	0.0	0.0	6.0	0.0				10.0	0.0	8.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.0	1.9	0.0				2.2	0.0	0.3
LnGrp Delay(d),s/veh	0.0	5.9	0.0	0.0	6.0	0.0				10.1	0.0	8.7
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		829			612						599	
Approach Delay, s/veh		5.9			6.0						10.0	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.1		14.4		20.1		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		5.7		6.4		6.0		
Green Ext Time (p_c), s		7.3		1.2		7.3		

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1208	153	0	1071	451	103	0	995	0	0	0
Future Volume (vph)	1	1208	153	0	1071	451	103	0	995	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4856			4720			1770	2787			
Flt Permitted		0.94			1.00			0.95	1.00			
Satd. Flow (perm)		4559			4720			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1245	158	0	1104	465	106	0	1026	0	0	0
RTOR Reduction (vph)	0	12	0	0	81	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	1392	0	0	1488	0	0	106	1010	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		32.6			56.6			23.1	47.1			
Effective Green, g (s)		35.4			59.4			25.9	49.9			
Actuated g/C Ratio		0.38			0.64			0.28	0.53			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1729			3005			491	1490			
v/s Ratio Prot					0.32			0.06	c0.36			
v/s Ratio Perm		c0.31										
v/c Ratio		0.81			0.50			0.22	0.68			
Uniform Delay, d1		25.9			9.0			25.9	15.8			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		2.7			0.0			0.1	1.0			
Delay (s)		28.5			9.0			26.0	16.8			
Level of Service		C			A			C	B			
Approach Delay (s)		28.5			9.0			17.7			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	857	440	56	537	133	562	298	97	230	376	326
Future Volume (veh/h)	520	857	440	56	537	133	562	298	97	230	376	326
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	884	148	58	554	100	579	307	0	237	388	139
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	674	1130	505	87	732	130	919	1209	541	277	803	350
Arrive On Green	0.20	0.33	0.33	0.05	0.17	0.16	0.27	0.34	0.00	0.16	0.23	0.23
Sat Flow, veh/h	3343	3438	1535	1723	4219	748	3442	3539	1583	1774	3539	1544
Grp Volume(v), veh/h	536	884	148	58	430	224	579	307	0	237	388	139
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1674	1721	1770	1583	1774	1770	1544
Q Serve(g_s), s	19.8	30.2	4.4	4.3	16.1	16.6	19.3	8.1	0.0	16.9	12.4	9.9
Cycle Q Clear(g_c), s	19.8	30.2	4.4	4.3	16.1	16.6	19.3	8.1	0.0	16.9	12.4	9.9
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	1130	505	87	571	291	919	1209	541	277	803	350
V/C Ratio(X)	0.80	0.78	0.29	0.67	0.75	0.77	0.63	0.25	0.00	0.85	0.48	0.40
Avail Cap(c_a), veh/h	720	1203	537	133	697	354	919	1209	541	382	803	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	39.4	7.2	60.7	51.1	51.6	42.0	30.9	0.0	53.4	43.6	42.7
Incr Delay (d2), s/veh	3.4	1.9	0.2	8.6	3.7	8.1	1.4	0.5	0.0	12.9	2.1	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	14.7	1.9	2.3	7.6	8.3	9.3	4.1	0.0	9.3	6.3	4.6
LnGrp Delay(d),s/veh	52.8	41.3	7.4	69.2	54.8	59.7	43.4	31.4	0.0	66.3	45.7	46.0
LnGrp LOS	D	D	A	E	D	E	D	C		E	D	D
Approach Vol, veh/h		1568			712			886			764	
Approach Delay, s/veh		42.0			57.5			39.2			52.2	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.3	48.4	10.5	46.7	39.2	33.5	30.7	26.6
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	27.0	29.0	9.0	44.0	28.0	* 28	27.0	* 26
Max Q Clear Time (g_c+I1), s	18.9	10.1	6.3	32.2	21.3	14.4	21.8	18.6
Green Ext Time (p_c), s	0.4	4.0	0.0	6.3	1.6	2.5	3.4	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	61	71	290	66	56	114	605	252	75	892	15
Future Volume (veh/h)	39	61	71	290	66	56	114	605	252	75	892	15
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	42	66	5	363	0	0	123	651	0	81	959	15
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	132	183	543	0	242	179	1657	741	127	2264	35
Arrive On Green	0.12	0.12	0.12	0.15	0.00	0.00	0.10	0.47	0.00	0.07	0.44	0.42
Sat Flow, veh/h	711	1117	1543	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	108	0	5	363	0	0	123	651	0	81	630	344
Grp Sat Flow(s),veh/h/ln	1827	0	1543	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	4.7	0.0	0.2	8.2	0.0	0.0	5.7	10.2	0.0	3.8	10.9	10.9
Cycle Q Clear(g_c), s	4.7	0.0	0.2	8.2	0.0	0.0	5.7	10.2	0.0	3.8	10.9	10.9
Prop In Lane	0.39		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	216	0	183	543	0	242	179	1657	741	127	1489	811
V/C Ratio(X)	0.50	0.00	0.03	0.67	0.00	0.00	0.69	0.39	0.00	0.64	0.42	0.42
Avail Cap(c_a), veh/h	668	0	565	1717	0	766	649	1942	869	649	1860	1014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	33.0	33.9	0.0	0.0	36.8	14.7	0.0	38.3	16.4	16.4
Incr Delay (d2), s/veh	1.8	0.0	0.1	1.4	0.0	0.0	4.7	0.3	0.0	5.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.1	4.1	0.0	0.0	3.0	5.0	0.0	2.0	5.2	5.7
LnGrp Delay(d),s/veh	36.8	0.0	33.1	35.3	0.0	0.0	41.5	15.0	0.0	43.5	16.8	17.2
LnGrp LOS	D		C	D			D	B		D	B	B
Approach Vol, veh/h		113			363			774			1055	
Approach Delay, s/veh		36.6			35.3			19.2			19.0	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	43.7		17.0	12.5	41.2		14.0
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	5.8	12.2		10.2	7.7	12.9		6.7
Green Ext Time (p_c), s	0.2	23.2		1.2	0.3	22.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	912	87	120	444	182	174	259	87	382	253	205
Future Volume (veh/h)	222	912	87	120	444	182	174	259	87	382	253	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	970	88	128	472	48	185	276	21	406	269	58
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	674	1307	119	246	1395	434	289	871	387	524	1112	494
Arrive On Green	0.20	0.41	0.39	0.07	0.28	0.28	0.08	0.25	0.25	0.15	0.31	0.31
Sat Flow, veh/h	3343	3185	289	3343	4940	1538	3442	3539	1574	3442	3539	1573
Grp Volume(v), veh/h	236	523	535	128	472	48	185	276	21	406	269	58
Grp Sat Flow(s),veh/h/ln	1672	1719	1755	1672	1647	1538	1721	1770	1574	1721	1770	1573
Q Serve(g_s), s	7.9	33.6	33.6	4.8	9.9	3.0	6.8	8.3	1.0	14.7	7.3	1.9
Cycle Q Clear(g_c), s	7.9	33.6	33.6	4.8	9.9	3.0	6.8	8.3	1.0	14.7	7.3	1.9
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	706	720	246	1395	434	289	871	387	524	1112	494
V/C Ratio(X)	0.35	0.74	0.74	0.52	0.34	0.11	0.64	0.32	0.05	0.78	0.24	0.12
Avail Cap(c_a), veh/h	674	706	720	429	1395	434	556	871	387	609	1112	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	32.5	32.7	58.0	37.0	34.6	57.6	40.1	23.1	53.0	33.1	9.7
Incr Delay (d2), s/veh	0.1	6.9	6.8	0.6	0.7	0.5	0.9	1.0	0.3	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	17.2	17.6	2.2	4.6	1.3	3.2	4.2	0.5	7.3	3.6	0.8
LnGrp Delay(d),s/veh	44.7	39.4	39.5	58.6	37.7	35.1	58.5	41.0	23.3	57.4	33.1	9.8
LnGrp LOS	D	D	D	E	D	D	E	D	C	E	C	A
Approach Vol, veh/h		1294			648			482			733	
Approach Delay, s/veh		40.4			41.6			47.0			44.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	40.0	23.8	36.0	12.9	57.4	14.9	44.8
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	20.2	33.9	20.2	29.9	13.9	40.2	18.9	31.2
Max Q Clear Time (g_c+I1), s	9.9	11.9	16.7	10.3	6.8	35.6	8.8	9.3
Green Ext Time (p_c), s	1.8	1.0	0.2	0.5	0.0	1.3	0.1	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		42.7
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	927	418	76	749	1	178	2	37	2	4	11
Future Volume (veh/h)	1	927	418	76	749	1	178	2	37	2	4	11
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	966	267	79	780	1	185	2	5	2	4	2
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	39	1047	867	283	1303	1085	281	77	194	280	193	96
Arrive On Green	0.02	0.58	0.58	0.33	1.00	1.00	0.16	0.16	0.15	0.16	0.16	0.15
Sat Flow, veh/h	1723	1810	1499	1723	1810	1507	1396	470	1176	1395	1170	585
Grp Volume(v), veh/h	1	966	267	79	780	1	185	0	7	2	0	6
Grp Sat Flow(s),veh/h/ln	1723	1810	1499	1723	1810	1507	1396	0	1646	1395	0	1755
Q Serve(g_s), s	0.1	62.8	11.9	4.4	0.0	0.0	16.6	0.0	0.5	0.2	0.0	0.4
Cycle Q Clear(g_c), s	0.1	62.8	11.9	4.4	0.0	0.0	17.0	0.0	0.5	0.6	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		0.33
Lane Grp Cap(c), veh/h	39	1047	867	283	1303	1085	281	0	271	280	0	289
V/C Ratio(X)	0.03	0.92	0.31	0.28	0.60	0.00	0.66	0.00	0.03	0.01	0.00	0.02
Avail Cap(c_a), veh/h	278	1047	867	283	1303	1085	373	0	380	372	0	405
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.1	24.8	14.1	37.9	0.0	0.0	52.6	0.0	46.2	45.8	0.0	45.8
Incr Delay (d2), s/veh	0.1	14.5	0.9	0.2	1.7	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	35.3	5.1	2.1	0.6	0.0	6.5	0.0	0.2	0.1	0.0	0.2
LnGrp Delay(d),s/veh	62.2	39.3	15.0	38.1	1.7	0.0	53.6	0.0	46.2	45.8	0.0	45.8
LnGrp LOS	E	D	B	D	A	A	D		D	D		D
Approach Vol, veh/h		1234			860			192			8	
Approach Delay, s/veh		34.0			5.0			53.3			45.8	
Approach LOS		C			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.4	79.2		25.4	7.0	97.6		25.4
Change Period (Y+Rc), s	6.8	6.8		6.1	6.8	6.8		6.1
Max Green Setting (Gmax), s	10.0	72.4		27.9	18.2	64.2		27.9
Max Q Clear Time (g_c+I1), s	6.4	64.8		2.6	2.1	2.0		19.0
Green Ext Time (p_c), s	0.1	1.7		0.1	0.0	1.5		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		24.8
HCM 2010 LOS		C

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	185	0.0	0.120	5.0	LOS A	0.5	13.5	0.57	0.50	30.5
8	T1	2	0.0	0.120	4.5	LOS A	0.5	13.5	0.56	0.48	24.2
18	R2	39	0.0	0.120	4.5	LOS A	0.5	13.5	0.56	0.48	35.2
Approach		226	0.0	0.120	4.9	LOS A	0.5	13.5	0.57	0.50	31.5
East: WB Boronda Rd											
1	L2	79	0.0	0.293	5.3	LOS A	1.6	39.3	0.36	0.23	30.5
6	T1	780	0.4	0.293	4.9	LOS A	1.6	40.6	0.35	0.21	33.7
16	R2	1	0.0	0.001	2.0	LOS A	0.0	0.1	0.03	0.00	34.3
Approach		860	0.4	0.293	4.9	LOS A	1.6	40.6	0.35	0.21	33.5
North: SB McKinnon St											
7	L2	2	0.0	0.002	3.8	LOS A	0.0	0.2	0.55	0.34	33.8
4	T1	4	0.0	0.006	2.9	LOS A	0.0	0.7	0.54	0.34	32.3
14	R2	11	0.0	0.006	2.8	LOS A	0.0	0.7	0.53	0.33	33.2
Approach		18	0.0	0.006	3.0	LOS A	0.0	0.7	0.54	0.34	33.2
West: EB Boronda Rd											
5	L2	1	0.0	0.308	5.1	LOS A	1.5	38.7	0.21	0.10	33.7
2	T1	966	0.0	0.308	4.8	LOS A	1.6	39.5	0.21	0.09	35.4
12	R2	435	0.0	0.256	4.1	LOS A	1.3	31.6	0.19	0.08	29.7
Approach		1402	0.0	0.308	4.6	LOS A	1.6	39.5	0.20	0.09	34.4
All Vehicles		2506	0.1	0.308	4.7	LOS A	1.6	40.6	0.29	0.17	33.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	713	219	52	715	144	72
Future Volume (veh/h)	713	219	52	715	144	72
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	743	176	54	745	150	5
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1329	1127	105	1494	200	178
Arrive On Green	1.00	1.00	0.06	0.83	0.11	0.11
Sat Flow, veh/h	1810	1535	1723	1810	1774	1583
Grp Volume(v), veh/h	743	176	54	745	150	5
Grp Sat Flow(s),veh/h/ln	1810	1535	1723	1810	1774	1583
Q Serve(g_s), s	0.0	0.0	3.9	15.8	10.7	0.4
Cycle Q Clear(g_c), s	0.0	0.0	3.9	15.8	10.7	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1329	1127	105	1494	200	178
V/C Ratio(X)	0.56	0.16	0.51	0.50	0.75	0.03
Avail Cap(c_a), veh/h	1329	1127	345	1494	273	244
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	59.2	3.4	55.9	51.3
Incr Delay (d2), s/veh	0.8	0.1	1.4	1.2	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	8.2	5.5	0.2
LnGrp Delay(d),s/veh	0.8	0.1	60.6	4.5	60.4	51.4
LnGrp LOS	A	A	E	A	E	D
Approach Vol, veh/h	919			799	155	
Approach Delay, s/veh	0.7			8.3	60.1	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.9	99.4				111.4		18.6
Change Period (Y+Rc), s	6.8	6.8				6.8		6.0
Max Green Setting (Gmax), s	23.2	69.2				99.2		18.0
Max Q Clear Time (g_c+I1), s	5.9	2.0				17.8		12.7
Green Ext Time (p_c), s	0.0	3.1				3.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		8.9
HCM 2010 LOS		A

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	150	0.0	0.109	3.5	LOS A	0.5	11.9	0.49	0.38	35.4
8	T1	1	0.0	0.001	3.6	LOS A	0.0	0.1	0.49	0.26	36.5
18	R2	75	0.0	0.054	3.0	LOS A	0.2	5.7	0.47	0.34	36.6
Approach		226	0.0	0.109	3.3	LOS A	0.5	11.9	0.48	0.37	35.8
East: WB Baronda Rd											
1	L2	54	0.0	0.308	5.7	LOS A	1.7	43.0	0.35	0.21	36.2
6	T1	745	0.3	0.308	5.5	LOS A	1.7	43.6	0.34	0.20	36.9
16	R2	1	0.0	0.308	5.4	LOS A	1.7	43.6	0.34	0.19	35.4
Approach		800	0.3	0.308	5.5	LOS A	1.7	43.6	0.34	0.20	36.9
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.001	3.9	LOS A	0.0	0.1	0.54	0.31	34.7
4	T1	1	0.0	0.001	2.8	LOS A	0.0	0.1	0.52	0.27	36.6
14	R2	1	0.0	0.001	2.7	LOS A	0.0	0.1	0.50	0.25	36.6
Approach		3	0.0	0.001	3.1	LOS A	0.0	0.1	0.52	0.28	35.9
West: EB Boronda Rd											
5u	U	1	0.0	0.347	5.8	LOS A	2.0	50.3	0.21	0.09	37.7
5	L2	1	0.0	0.347	5.8	LOS A	2.0	50.3	0.21	0.09	36.4
2	T1	743	0.4	0.347	5.7	LOS A	2.0	50.6	0.21	0.08	37.0
12	R2	228	0.0	0.347	5.5	LOS A	2.0	50.6	0.20	0.08	35.8
Approach		973	0.3	0.347	5.7	LOS A	2.0	50.6	0.20	0.08	36.7
All Vehicles		2002	0.3	0.347	5.3	LOS A	2.0	50.6	0.29	0.16	36.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	703	80	201	646	111	115	118	396	292	283	35
Future Volume (veh/h)	15	703	80	201	646	111	115	118	396	292	283	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	756	0	216	695	0	124	127	0	314	304	35
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	66	724	615	305	975	0	184	172	146	368	322	37
Arrive On Green	0.04	0.40	0.00	0.35	1.00	0.00	0.10	0.09	0.00	0.21	0.20	0.17
Sat Flow, veh/h	1723	1810	1538	1723	1810	0	1774	1863	1583	1774	1641	189
Grp Volume(v), veh/h	16	756	0	216	695	0	124	127	0	314	0	339
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1810	0	1774	1863	1583	1774	0	1829
Q Serve(g_s), s	1.2	52.0	0.0	14.0	0.0	0.0	8.8	8.6	0.0	22.2	0.0	23.8
Cycle Q Clear(g_c), s	1.2	52.0	0.0	14.0	0.0	0.0	8.8	8.6	0.0	22.2	0.0	23.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	66	724	615	305	975	0	184	172	146	368	0	359
V/C Ratio(X)	0.24	1.04	0.00	0.71	0.71	0.00	0.68	0.74	0.00	0.85	0.00	0.94
Avail Cap(c_a), veh/h	172	724	615	305	975	0	259	172	146	382	0	359
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.75	0.75	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.7	39.0	0.0	39.1	0.0	0.0	56.2	57.5	0.0	49.6	0.0	51.7
Incr Delay (d2), s/veh	0.7	45.6	0.0	4.8	3.4	0.0	1.6	13.7	0.0	15.5	0.0	32.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	35.1	0.0	7.0	0.9	0.0	4.4	5.1	0.0	12.5	0.0	15.3
LnGrp Delay(d),s/veh	61.4	84.6	0.0	43.9	3.4	0.0	57.8	71.2	0.0	65.1	0.0	84.5
LnGrp LOS	E	F		D	A		E	E		E		F
Approach Vol, veh/h		772			911			251			653	
Approach Delay, s/veh		84.1			13.0			64.6			75.2	
Approach LOS		F			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	56.0	17.5	29.5	9.0	74.0	31.0	16.0
Change Period (Y+Rc), s	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Green Setting (Gmax), s	19.2	49.2	16.2	18.2	10.2	58.2	25.2	9.2
Max Q Clear Time (g_c+I1), s	16.0	54.0	10.8	25.8	3.2	2.0	24.2	10.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.0	1.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing No Proj PM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Natividad Rd											
3	L2	124	0.0	0.107	4.0	LOS A	0.3	7.9	0.42	0.39	36.0
8	T1	127	0.0	0.073	4.9	LOS A	0.2	4.9	0.46	0.43	36.1
18	R2	426	0.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		676	0.0	0.254	1.7	LOS A	0.3	7.9	0.16	0.15	38.0
East: WB Boronda Rd											
1	L2	216	0.0	0.233	4.9	LOS A	1.0	23.8	0.32	0.21	34.3
6	T1	695	0.2	0.233	4.7	LOS A	1.0	24.4	0.31	0.21	39.9
16	R2	119	0.0	0.081	3.1	LOS A	0.3	7.6	0.20	0.10	38.5
Approach		1030	0.1	0.233	4.6	LOS A	1.0	24.4	0.30	0.20	38.9
North: SB Natividad Rd											
7	L2	314	0.3	0.202	5.8	LOS A	0.7	17.2	0.51	0.51	35.6
4	T1	304	0.0	0.202	5.0	LOS A	0.7	18.2	0.50	0.48	35.4
14	R2	38	7.5	0.033	3.5	LOS A	0.1	2.7	0.41	0.32	39.1
Approach		656	0.6	0.202	5.3	LOS A	0.7	18.2	0.50	0.48	35.8
West: EB Boronda Rd											
5u	U	1	0.0	0.247	6.2	LOS A	0.9	22.7	0.51	0.50	39.1
5	L2	16	0.0	0.247	6.2	LOS A	0.9	22.7	0.51	0.50	38.9
2	T1	756	0.0	0.247	5.8	LOS A	1.0	24.0	0.51	0.49	39.6
12	R2	86	0.0	0.066	3.3	LOS A	0.2	5.4	0.35	0.25	38.2
Approach		859	0.0	0.247	5.6	LOS A	1.0	24.0	0.49	0.46	39.5
All Vehicles		3222	0.2	0.254	4.4	LOS A	1.0	24.4	0.36	0.32	38.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	922	430	15	672	311	35
Future Volume (veh/h)	922	430	15	672	311	35
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	941	368	15	686	317	7
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1203	1020	65	1327	364	325
Arrive On Green	1.00	1.00	0.04	0.73	0.21	0.21
Sat Flow, veh/h	1810	1535	1723	1810	1774	1583
Grp Volume(v), veh/h	941	368	15	686	317	7
Grp Sat Flow(s),veh/h/ln	1810	1535	1723	1810	1774	1583
Q Serve(g_s), s	0.0	0.0	1.1	21.2	22.5	0.5
Cycle Q Clear(g_c), s	0.0	0.0	1.1	21.2	22.5	0.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1203	1020	65	1327	364	325
V/C Ratio(X)	0.78	0.36	0.23	0.52	0.87	0.02
Avail Cap(c_a), veh/h	1203	1020	252	1327	669	597
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.18	0.18	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	60.7	7.5	50.0	41.2
Incr Delay (d2), s/veh	1.0	0.2	0.7	1.4	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.5	11.0	11.3	0.2
LnGrp Delay(d),s/veh	1.0	0.2	61.4	8.9	52.5	41.2
LnGrp LOS	A	A	E	A	D	D
Approach Vol, veh/h	1309			701	324	
Approach Delay, s/veh	0.8			10.0	52.3	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.9	90.4				99.3		30.7
Change Period (Y+Rc), s	6.8	6.8				6.8		6.1
Max Green Setting (Gmax), s	16.2	47.2				70.2		46.9
Max Q Clear Time (g_c+I1), s	3.1	2.0				23.2		24.5
Green Ext Time (p_c), s	0.0	3.8				3.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	317	0.0	0.131	4.1	LOS A	0.6	15.4	0.53	0.44	32.9
8	T1	1	0.0	0.035	3.7	LOS A	0.1	3.6	0.51	0.38	35.3
18	R2	36	0.0	0.035	3.7	LOS A	0.1	3.6	0.51	0.38	34.6
Approach		354	0.0	0.131	4.0	LOS A	0.6	15.4	0.53	0.43	33.1
East: WB Boronda Rd											
1	L2	15	0.0	0.275	5.5	LOS A	1.1	28.0	0.37	0.28	35.0
6	T1	686	0.2	0.275	5.3	LOS A	1.1	28.8	0.37	0.27	36.0
16	R2	1	0.0	0.001	2.3	LOS A	0.0	0.1	0.02	0.00	36.2
Approach		702	0.2	0.275	5.3	LOS A	1.1	28.8	0.37	0.27	36.0
North: SB Independence Blvd (Future)											
7	L2	1	0.0	0.002	3.4	LOS A	0.0	0.2	0.48	0.29	35.4
4	T1	1	0.0	0.002	3.4	LOS A	0.0	0.2	0.48	0.29	33.9
14	R2	1	0.0	0.001	3.4	LOS A	0.0	0.1	0.48	0.27	35.5
Approach		3	0.0	0.002	3.4	LOS A	0.0	0.2	0.48	0.28	35.0
West: EB Boronda Rd											
5u	U	1	0.0	0.299	5.0	LOS A	1.8	45.6	0.10	0.03	37.0
5	L2	1	0.0	0.299	5.0	LOS A	1.8	45.6	0.10	0.03	35.9
2	T1	941	0.1	0.299	4.7	LOS A	1.8	46.0	0.10	0.03	36.3
12	R2	439	0.0	0.262	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1382	0.1	0.299	3.2	LOS A	1.8	46.0	0.07	0.02	36.4
All Vehicles		2441	0.1	0.299	3.9	LOS A	1.8	46.0	0.22	0.15	35.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	793	169	27	601	76	15
Future Vol, veh/h	793	169	27	601	76	15
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	826	176	28	626	79	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1010	0	1604	922
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	682	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	675	-	116	327
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	675	-	108	325
Mov Cap-2 Maneuver	-	-	-	-	108	-
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	99.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	121	-	-	675	-
HCM Lane V/C Ratio	0.783	-	-	0.042	-
HCM Control Delay (s)	99.4	-	-	10.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	4.5	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	199	56	215	186	192	114	870	242	172	1025	195
Future Volume (veh/h)	186	199	56	215	186	192	114	870	242	172	1025	195
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	196	209	7	226	196	31	120	916	224	181	1079	97
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	510	221	276	300	251	550	2005	488	286	1347	411
Arrive On Green	0.14	0.14	0.14	0.16	0.16	0.16	0.31	0.49	0.48	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1531	1774	1863	1560	1774	4077	993	3442	5085	1551
Grp Volume(v), veh/h	196	209	7	226	196	31	120	761	379	181	1079	97
Grp Sat Flow(s),veh/h/ln	1774	1770	1531	1774	1863	1560	1774	1695	1680	1721	1695	1551
Q Serve(g_s), s	13.7	6.9	0.3	15.8	12.6	2.2	6.4	18.8	19.2	6.5	25.3	4.3
Cycle Q Clear(g_c), s	13.7	6.9	0.3	15.8	12.6	2.2	6.4	18.8	19.2	6.5	25.3	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	246	510	221	276	300	251	550	1667	826	286	1347	411
V/C Ratio(X)	0.80	0.41	0.03	0.82	0.65	0.12	0.22	0.46	0.46	0.63	0.80	0.24
Avail Cap(c_a), veh/h	255	998	432	457	738	618	550	1667	826	371	1347	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	49.8	13.0	52.3	50.3	46.0	32.7	21.3	21.8	56.8	43.9	17.1
Incr Delay (d2), s/veh	14.1	0.2	0.0	2.3	0.9	0.1	0.1	0.9	1.8	0.9	5.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	3.4	0.1	7.9	6.6	0.9	3.1	9.0	9.4	3.1	12.5	2.0
LnGrp Delay(d),s/veh	67.5	50.0	13.1	54.5	51.2	46.0	32.7	22.2	23.6	57.6	49.0	18.5
LnGrp LOS	E	D	B	D	D	D	C	C	C	E	D	B
Approach Vol, veh/h		412			453			1260			1357	
Approach Delay, s/veh		57.7			52.5			23.6			48.0	
Approach LOS		E			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	67.0	23.9	22.5	43.7	37.9	21.8	24.6				
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1				
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6				
Max Q Clear Time (g_c+I1), s	8.5	21.2	17.8	8.9	8.4	27.3	15.7	14.6				
Green Ext Time (p_c), s	0.0	1.8	0.1	0.8	0.0	1.6	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			40.9									
HCM 2010 LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	0	306	0	0	0	385	770	0	9	624	92
Future Volume (veh/h)	212	0	306	0	0	0	385	770	0	9	624	92
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	228	0	35				414	828	0	10	671	80
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	426	0	196				536	3215	0	28	1593	188
Arrive On Green	0.12	0.00	0.12				0.30	0.63	0.00	0.02	0.35	0.32
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4610	545
Grp Volume(v), veh/h	228	0	35				414	828	0	10	492	259
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1765
Q Serve(g_s), s	3.3	0.0	1.0				11.2	3.8	0.0	0.3	5.8	6.0
Cycle Q Clear(g_c), s	3.3	0.0	1.0				11.2	3.8	0.0	0.3	5.8	6.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	426	0	196				536	3215	0	28	1171	610
V/C Ratio(X)	0.54	0.00	0.18				0.77	0.26	0.00	0.36	0.42	0.43
Avail Cap(c_a), veh/h	2000	0	920				1014	3215	0	676	2034	1059
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	20.6				16.7	4.2	0.0	25.6	13.2	13.4
Incr Delay (d2), s/veh	1.0	0.0	0.4				5.0	0.0	0.0	3.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.0				6.2	1.7	0.0	0.2	2.8	3.0
LnGrp Delay(d),s/veh	22.6	0.0	21.0				21.7	4.3	0.0	28.6	13.4	13.8
LnGrp LOS	C		C				C	A		C	B	B
Approach Vol, veh/h		263						1242			761	
Approach Delay, s/veh		22.4						10.1			13.7	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	4.8	37.2		10.5	19.9	22.1		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.3	5.8		5.3	13.2	8.0		
Green Ext Time (p_c), s	0.0	11.0		0.9	2.7	8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	797	191	11	535	71	150	101	23	80	107	197
Future Volume (veh/h)	271	797	191	11	535	71	150	101	23	80	107	197
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	288	848	189	12	569	65	160	107	15	85	114	40
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	1431	319	94	1064	121	392	468	66	395	547	454
Arrive On Green	0.22	0.50	0.46	0.05	0.33	0.30	0.29	0.29	0.27	0.29	0.29	0.29
Sat Flow, veh/h	1774	2875	641	1774	3200	365	1207	1593	223	1242	1863	1548
Grp Volume(v), veh/h	288	522	515	12	314	320	160	0	122	85	114	40
Grp Sat Flow(s),veh/h/ln	1774	1770	1746	1774	1770	1795	1207	0	1817	1242	1863	1548
Q Serve(g_s), s	11.7	16.2	16.4	0.5	11.1	11.2	8.8	0.0	3.9	4.3	3.5	1.4
Cycle Q Clear(g_c), s	11.7	16.2	16.4	0.5	11.1	11.2	12.4	0.0	3.9	8.2	3.5	1.4
Prop In Lane	1.00		0.37	1.00		0.20	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	387	881	869	94	588	597	392	0	533	395	547	454
V/C Ratio(X)	0.74	0.59	0.59	0.13	0.53	0.54	0.41	0.00	0.23	0.22	0.21	0.09
Avail Cap(c_a), veh/h	523	881	869	523	867	879	643	0	911	653	934	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	13.8	14.2	34.8	20.8	21.1	25.1	0.0	20.7	23.7	20.5	19.7
Incr Delay (d2), s/veh	3.9	1.1	1.1	0.6	0.8	0.8	0.7	0.0	0.2	0.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	8.1	8.1	0.3	5.5	5.7	3.0	0.0	2.0	1.5	1.8	0.6
LnGrp Delay(d),s/veh	32.0	14.8	15.3	35.4	21.6	21.9	25.8	0.0	20.9	24.0	20.6	19.8
LnGrp LOS	C	B	B	D	C	C	C		C	C	C	B
Approach Vol, veh/h		1325			646			282			239	
Approach Delay, s/veh		18.7			22.0			23.7			21.7	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	42.3		26.6	20.8	29.6		26.6
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	2.5	18.4		10.2	13.7	13.2		14.4
Green Ext Time (p_c), s	0.0	9.0		2.4	0.4	9.5		2.3

Intersection Summary		
HCM 2010 Ctrl Delay		20.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	0	95	0	0	0	60	433	0	0	610	178
Future Volume (veh/h)	184	0	95	0	0	0	60	433	0	0	610	178
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1900	1863	1900	1810	1810	0	0	1810	1810
Adj Flow Rate, veh/h	194	0	14	0	0	0	63	456	0	0	642	108
Adj No. of Lanes	1	0	1	0	1	0	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	2	2	5	5	0	0	5	5
Cap, veh/h	317	0	0	0	4	0	149	1199	0	0	900	763
Arrive On Green	0.18	0.00	0.04	0.00	0.00	0.00	0.09	0.66	0.00	0.00	0.50	0.50
Sat Flow, veh/h	1774	194		0	-74510	0	1723	1810	0	0	1810	1533
Grp Volume(v), veh/h	194	21.0		0	0	0	63	456	0	0	642	108
Grp Sat Flow(s),veh/h/ln	1774	C		0	1863	0	1723	1810	0	0	1810	1533
Q Serve(g_s), s	5.1			0.0	0.0	0.0	1.7	5.7	0.0	0.0	13.9	1.9
Cycle Q Clear(g_c), s	5.1			0.0	0.0	0.0	1.7	5.7	0.0	0.0	13.9	1.9
Prop In Lane	1.00			0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	317			0	4	0	149	1199	0	0	900	763
V/C Ratio(X)	0.61			0.00	0.00	0.00	0.42	0.38	0.00	0.00	0.71	0.14
Avail Cap(c_a), veh/h	809			0	739	0	581	1292	0	0	1292	1095
HCM Platoon Ratio	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.1			0.0	0.0	0.0	21.8	3.8	0.0	0.0	9.9	6.9
Incr Delay (d2), s/veh	1.9			0.0	0.0	0.0	1.9	0.2	0.0	0.0	1.1	0.1
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6			0.0	0.0	0.0	0.9	2.9	0.0	0.0	7.0	0.8
LnGrp Delay(d),s/veh	21.0			0.0	0.0	0.0	23.8	4.0	0.0	0.0	10.9	6.9
LnGrp LOS	C						C	A			B	A
Approach Vol, veh/h					0			519			750	
Approach Delay, s/veh					0.0			6.4			10.4	
Approach LOS								A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6		
Phs Duration (G+Y+Rc), s	8.3	29.1	13.0	0.0		37.4		
Change Period (Y+Rc), s	* 6	* 6	* 6	* 6		* 6		
Max Green Setting (Gmax), s	* 15	* 34	* 21	* 18		* 34		
Max Q Clear Time (g_c+I1), s	13.7	15.9	7.1	0.0		7.7		
Green Ext Time (p_c), s	0.1	6.7	0.4	0.0		7.8		

Intersection Summary		
HCM 2010 Ctrl Delay		10.4
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1518	364	0	1150	116	0	0	0	356	0	339
Future Volume (veh/h)	0	1518	364	0	1150	116	0	0	0	356	0	339
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1598	0	0	1211	0				375	0	337
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2065	924	0	2065	0				931	0	428
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1598	0	0	1211	0				375	0	337
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	21.5	0.0	0.0	13.5	0.0				5.5	0.0	12.2
Cycle Q Clear(g_c), s	0.0	21.5	0.0	0.0	13.5	0.0				5.5	0.0	12.2
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2065	924	0	2065	0				931	0	428
V/C Ratio(X)	0.00	0.77	0.00	0.00	0.59	0.00				0.40	0.00	0.79
Avail Cap(c_a), veh/h	0	2276	1018	0	2276	0				2251	0	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.2	0.0	0.0	7.6	0.0				18.5	0.0	21.0
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	0.2	0.0				0.2	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.4	0.0	0.0	6.3	0.0				2.6	0.0	5.6
LnGrp Delay(d),s/veh	0.0	10.6	0.0	0.0	7.8	0.0				18.8	0.0	23.4
LnGrp LOS		B			A					B		C
Approach Vol, veh/h		1598			1211						712	
Approach Delay, s/veh		10.6			7.8						21.0	
Approach LOS		B			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.3		20.8		41.3		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		40.0		40.0		40.0		
Max Q Clear Time (g_c+I1), s		23.5		14.2		15.5		
Green Ext Time (p_c), s		12.7		1.9		17.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1414	439	0	886	219	361	0	348	0	0	0
Future Volume (vph)	0	1414	439	0	886	219	361	0	348	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.98		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1504		3318		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1504		3318		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1504	467	0	943	233	384	0	370	0	0	0
RTOR Reduction (vph)	0	0	161	0	25	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	1504	306	0	1151	0	192	192	318	0	0	0
Confl. Peds. (#/hr)			1			3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		54.5	54.5		54.5		19.9	19.9	19.9			
Effective Green, g (s)		55.1	54.5		55.1		20.1	20.1	20.1			
Actuated g/C Ratio		0.66	0.66		0.66		0.24	0.24	0.24			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2276	985		2197		406	406	382			
v/s Ratio Prot		c0.44			0.35		0.11	0.11				
v/s Ratio Perm			0.20						c0.20			
v/c Ratio		0.66	0.31		0.52		0.47	0.47	0.83			
Uniform Delay, d1		8.4	6.2		7.3		27.0	27.0	29.9			
Progression Factor		1.00	1.00		0.47		1.00	1.00	1.00			
Incremental Delay, d2		0.7	0.2		0.2		0.3	0.3	13.7			
Delay (s)		9.2	6.4		3.6		27.3	27.3	43.6			
Level of Service		A	A		A		C	C	D			
Approach Delay (s)		8.5			3.6			35.3			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	13.4
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	629	119	153	461	175	143	919	199	264	839	152
Future Volume (veh/h)	224	629	119	153	461	175	143	919	199	264	839	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	229	642	108	156	470	142	146	938	85	269	856	138
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	186	758	127	219	722	217	251	965	430	748	1840	295
Arrive On Green	0.11	0.26	0.24	0.13	0.28	0.26	0.07	0.27	0.27	0.22	0.42	0.40
Sat Flow, veh/h	1723	2941	494	1723	2606	782	3442	3539	1578	3442	4411	707
Grp Volume(v), veh/h	229	375	375	156	309	303	146	938	85	269	657	337
Grp Sat Flow(s),veh/h/ln	1723	1719	1716	1723	1719	1668	1721	1770	1578	1721	1695	1728
Q Serve(g_s), s	13.8	26.5	26.6	11.1	20.3	20.6	5.3	33.6	5.3	8.5	17.9	18.2
Cycle Q Clear(g_c), s	13.8	26.5	26.6	11.1	20.3	20.6	5.3	33.6	5.3	8.5	17.9	18.2
Prop In Lane	1.00		0.29	1.00		0.47	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	186	443	442	219	476	462	251	965	430	748	1414	721
V/C Ratio(X)	1.23	0.85	0.85	0.71	0.65	0.66	0.58	0.97	0.20	0.36	0.46	0.47
Avail Cap(c_a), veh/h	186	525	524	350	689	669	320	965	430	748	1414	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	45.1	45.4	53.6	40.8	41.3	57.4	46.1	35.8	42.5	27.0	27.4
Incr Delay (d2), s/veh	142.4	9.3	9.5	1.6	0.6	0.6	0.8	23.0	1.0	0.1	1.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	13.7	13.8	5.4	9.7	9.6	2.5	19.5	2.4	4.0	8.6	9.1
LnGrp Delay(d),s/veh	199.5	54.4	54.9	55.2	41.3	41.9	58.2	69.0	36.8	42.6	28.1	29.5
LnGrp LOS	F	D	D	E	D	D	E	E	D	D	C	C
Approach Vol, veh/h		979			768			1169			1263	
Approach Delay, s/veh		88.5			44.4			65.3			31.6	
Approach LOS		F			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	38.9	20.3	37.0	13.3	57.4	17.8	39.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	32.8	23.9	37.0	9.8	32.9	11.7	49.2
Max Q Clear Time (g_c+I1), s	10.5	35.6	13.1	28.6	7.3	20.2	15.8	22.6
Green Ext Time (p_c), s	0.0	0.0	1.1	1.2	0.0	2.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	56.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	716	72	614	537	447	88	646	769	406	527	63
Future Volume (veh/h)	100	716	72	614	537	447	88	646	769	406	527	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	105	754	0	646	565	0	93	680	752	427	555	61
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	143	899	402	733	1380	617	137	909	1328	515	1057	116
Arrive On Green	0.08	0.26	0.00	0.22	0.40	0.00	0.08	0.26	0.26	0.15	0.33	0.31
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2754	3442	3212	352
Grp Volume(v), veh/h	105	754	0	646	565	0	93	680	752	427	305	311
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1377	1721	1770	1794
Q Serve(g_s), s	8.7	30.3	0.0	27.3	17.2	0.0	7.5	25.8	28.5	17.6	20.4	20.6
Cycle Q Clear(g_c), s	8.7	30.3	0.0	27.3	17.2	0.0	7.5	25.8	28.5	17.6	20.4	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	143	899	402	733	1380	617	137	909	1328	515	582	591
V/C Ratio(X)	0.74	0.84	0.00	0.88	0.41	0.00	0.68	0.75	0.57	0.83	0.52	0.53
Avail Cap(c_a), veh/h	211	966	432	825	1392	623	182	958	1366	566	588	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.4	51.0	0.0	55.1	31.3	0.0	65.6	49.9	27.2	60.3	39.7	39.9
Incr Delay (d2), s/veh	2.8	6.1	0.0	9.3	0.1	0.0	2.7	2.9	0.4	8.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	15.1	0.0	13.6	8.2	0.0	3.8	13.0	10.9	9.0	10.1	10.3
LnGrp Delay(d),s/veh	68.1	57.1	0.0	64.5	31.4	0.0	68.3	52.8	27.6	68.7	40.3	40.6
LnGrp LOS	E	E		E	C		E	D	C	E	D	D
Approach Vol, veh/h		859			1211			1525			1043	
Approach Delay, s/veh		58.4			49.1			41.4			52.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.8	41.5	36.0	42.7	15.3	52.0	16.1	62.6
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	22.0	37.0	34.0	* 39	13.0	46.0	16.4	56.6
Max Q Clear Time (g_c+I1), s	19.6	30.5	29.3	32.3	9.5	22.6	10.7	19.2
Green Ext Time (p_c), s	0.2	4.4	0.7	3.9	0.0	10.1	0.1	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1130	778	747	278	196	807
Future Volume (veh/h)	1130	778	747	278	196	807
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	1189	819	786	0	206	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1368	2744	1195	535	409	188
Arrive On Green	0.41	0.80	0.35	0.00	0.12	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	1189	819	786	0	206	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	31.5	6.1	18.7	0.0	5.4	0.0
Cycle Q Clear(g_c), s	31.5	6.1	18.7	0.0	5.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1368	2744	1195	535	409	188
V/C Ratio(X)	0.87	0.30	0.66	0.00	0.50	0.00
Avail Cap(c_a), veh/h	1629	3315	1497	670	1124	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	2.6	26.6	0.0	39.8	0.0
Incr Delay (d2), s/veh	4.7	0.1	0.7	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	2.9	9.0	0.0	2.6	0.0
LnGrp Delay(d),s/veh	30.8	2.6	27.4	0.0	40.8	0.0
LnGrp LOS	C	A	C		D	
Approach Vol, veh/h		2008	786		206	
Approach Delay, s/veh		19.3	27.4		40.8	
Approach LOS		B	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		81.0		15.5	43.5	37.5		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		8.1		7.4	33.5	20.7		
Green Ext Time (p_c), s		17.9		0.6	4.0	10.9		

Intersection Summary		
HCM 2010 Ctrl Delay		22.9
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	7.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	198	94	247	169	22
Future Vol, veh/h	310	198	94	247	169	22
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	326	208	99	260	178	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	543	0	897	439
Stage 1	-	-	-	-	439	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1011	-	310	618
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1011	-	278	614
Mov Cap-2 Maneuver	-	-	-	-	278	-
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	575	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	35.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	614	-	-	1011	-
HCM Lane V/C Ratio	0.64	0.038	-	-	0.098	-
HCM Control Delay (s)	38.4	11.1	-	-	8.9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	4	0.1	-	-	0.3	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	0	50	0	0	0	80	42	0	0	33	208
Future Vol, veh/h	60	0	50	0	0	0	80	42	0	0	33	208
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	0	56	0	0	0	89	47	0	0	37	231

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	376	376	152	404	492	47	268	0	0	47	0	0
Stage 1	152	152	-	224	224	-	-	-	-	-	-	-
Stage 2	224	224	-	180	268	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	581	555	894	557	478	1022	1296	-	-	1560	-	-
Stage 1	850	772	-	779	718	-	-	-	-	-	-	-
Stage 2	779	718	-	822	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	549	516	894	494	444	1022	1296	-	-	1560	-	-
Mov Cap-2 Maneuver	549	516	-	494	444	-	-	-	-	-	-	-
Stage 1	790	772	-	724	667	-	-	-	-	-	-	-
Stage 2	724	667	-	771	687	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	0	5.2	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1296	-	-	666	-	1560	-	-
HCM Lane V/C Ratio	0.069	-	-	0.184	-	-	-	-
HCM Control Delay (s)	8	0	-	11.6	0	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	45	168	556	97	89	312	1031	656	97	1011	25
Future Volume (veh/h)	27	45	168	556	97	89	312	1031	656	97	1011	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	29	49	1	604	105	13	339	1121	368	105	1099	26
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	134	110	744	403	338	556	1773	762	152	1397	33
Arrive On Green	0.07	0.07	0.07	0.22	0.22	0.22	0.31	0.50	0.50	0.09	0.27	0.26
Sat Flow, veh/h	1774	1863	1537	3442	1863	1561	1774	3539	1521	1774	5109	121
Grp Volume(v), veh/h	29	49	1	604	105	13	339	1121	368	105	729	396
Grp Sat Flow(s),veh/h/ln	1774	1863	1537	1721	1863	1561	1774	1770	1521	1774	1695	1839
Q Serve(g_s), s	2.0	3.2	0.1	21.4	6.0	0.8	20.8	29.6	20.4	7.4	25.5	25.5
Cycle Q Clear(g_c), s	2.0	3.2	0.1	21.4	6.0	0.8	20.8	29.6	20.4	7.4	25.5	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	128	134	110	744	403	338	556	1773	762	152	927	503
V/C Ratio(X)	0.23	0.37	0.01	0.81	0.26	0.04	0.61	0.63	0.48	0.69	0.79	0.79
Avail Cap(c_a), veh/h	402	422	348	995	538	451	556	1773	762	152	927	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	56.6	55.2	47.7	41.7	39.6	37.3	23.3	21.0	56.8	43.0	43.1
Incr Delay (d2), s/veh	0.3	0.6	0.0	2.8	0.1	0.0	1.4	1.7	2.2	10.4	6.7	11.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.0	10.4	3.1	0.4	10.4	14.9	8.9	4.1	12.8	14.6
LnGrp Delay(d),s/veh	56.4	57.2	55.2	50.5	41.8	39.7	38.7	25.1	23.2	67.2	49.7	54.9
LnGrp LOS	E	E	E	D	D	D	D	C	C	E	D	D
Approach Vol, veh/h		79			722			1828			1230	
Approach Delay, s/veh		56.9			49.0			27.2			52.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	68.1		13.2	44.1	39.0		31.7
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	8.9	32.9		34.9
Max Q Clear Time (g_c+I1), s	9.4	31.6		5.2	22.8	27.5		23.4
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	1.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	13	68	5	15	12	169	1244	8	10	759	404
Future Volume (veh/h)	314	13	68	5	15	12	169	1244	8	10	759	404
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	341	14	16	5	16	3	184	1352	9	11	825	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	7	598	45	123	18	260	1660	11	64	1240	0
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.36	0.15	0.46	0.43	0.04	0.35	0.00
Sat Flow, veh/h	421	17	1573	0	323	46	1774	3604	24	1774	3632	0
Grp Volume(v), veh/h	355	0	16	24	0	0	184	664	697	11	825	0
Grp Sat Flow(s),veh/h/ln	439	0	1573	369	0	0	1774	1770	1858	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.0	9.6	31.5	31.6	0.6	19.2	0.0
Cycle Q Clear(g_c), s	37.0	0.0	0.6	37.0	0.0	0.0	9.6	31.5	31.6	0.6	19.2	0.0
Prop In Lane	0.96		1.00	0.21		0.12	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	239	0	598	185	0	0	260	815	856	64	1240	0
V/C Ratio(X)	1.48	0.00	0.03	0.13	0.00	0.00	0.71	0.81	0.81	0.17	0.67	0.00
Avail Cap(c_a), veh/h	239	0	598	185	0	0	592	863	907	592	1727	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	18.9	23.5	0.0	0.0	39.6	22.7	22.7	45.5	26.8	0.0
Incr Delay (d2), s/veh	238.8	0.0	0.0	0.1	0.0	0.0	1.3	5.2	5.0	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.2	0.0	0.3	0.4	0.0	0.0	4.8	16.5	17.3	0.3	9.4	0.0
LnGrp Delay(d),s/veh	274.6	0.0	18.9	23.6	0.0	0.0	40.9	27.9	27.7	46.0	27.0	0.0
LnGrp LOS	F		B	C			D	C	C	D	C	
Approach Vol, veh/h		371			24			1545			836	
Approach Delay, s/veh		263.6			23.6			29.4			27.3	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	48.8		41.0	18.2	38.1		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	2.6	33.6		39.0	11.6	21.2		39.0
Green Ext Time (p_c), s	0.0	6.9		0.0	0.2	10.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	720	63	41	497	236	61	314	59	319	240	330
Future Volume (veh/h)	349	720	63	41	497	236	61	314	59	319	240	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	371	766	63	44	529	65	65	334	9	339	255	75
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	489	1451	119	56	1191	511	85	614	271	452	494	414
Arrive On Green	0.15	0.45	0.44	0.03	0.34	0.34	0.05	0.17	0.17	0.14	0.27	0.27
Sat Flow, veh/h	3343	3216	264	1774	3539	1520	1774	3539	1561	3343	1810	1518
Grp Volume(v), veh/h	371	409	420	44	529	65	65	334	9	339	255	75
Grp Sat Flow(s),veh/h/ln	1672	1719	1762	1774	1770	1520	1774	1770	1561	1672	1810	1518
Q Serve(g_s), s	8.7	14.0	14.0	2.0	9.5	2.4	3.0	7.0	0.4	8.0	9.7	3.1
Cycle Q Clear(g_c), s	8.7	14.0	14.0	2.0	9.5	2.4	3.0	7.0	0.4	8.0	9.7	3.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	489	775	795	56	1191	511	85	614	271	452	494	414
V/C Ratio(X)	0.76	0.53	0.53	0.78	0.44	0.13	0.76	0.54	0.03	0.75	0.52	0.18
Avail Cap(c_a), veh/h	1230	775	795	653	1584	680	653	1346	594	1230	688	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	16.1	16.2	39.2	21.1	18.8	38.4	30.7	28.0	33.9	25.1	22.7
Incr Delay (d2), s/veh	2.5	0.7	0.7	20.7	0.3	0.1	13.1	0.8	0.0	2.5	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	6.7	6.9	1.3	4.7	1.0	1.8	3.5	0.2	3.8	4.9	1.3
LnGrp Delay(d),s/veh	35.9	16.8	16.8	59.9	21.4	18.9	51.4	31.5	28.1	36.4	25.9	22.9
LnGrp LOS	D	B	B	E	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1200			638			408			669	
Approach Delay, s/veh		22.7			23.8			34.6			30.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	40.8	7.9	26.3	15.9	31.4	15.0	19.2
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	14.0	16.0	5.0	11.7	10.7	11.5	10.0	9.0
Green Ext Time (p_c), s	0.1	9.0	0.1	3.4	1.2	9.5	1.1	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	266	64	205	102	41	221
Future Vol, veh/h	266	64	205	102	41	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	296	71	228	113	46	246

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	341	0	-	0	946	284
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1218	-	-	-	287	748
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	507	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1218	-	-	-	217	748
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1218	-	-	-	217	748
HCM Lane V/C Ratio	0.243	-	-	-	0.21	0.328
HCM Control Delay (s)	8.9	-	-	-	25.9	12.1
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	1	-	-	-	0.8	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	287	14	81	322	55	3	128	101	13	75	190
Future Volume (veh/h)	351	287	14	81	322	55	3	128	101	13	75	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	373	305	5	86	343	45	3	136	12	14	80	23
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	482	723	614	215	747	97	73	273	227	106	308	261
Arrive On Green	0.28	0.40	0.40	0.12	0.24	0.21	0.04	0.15	0.15	0.06	0.17	0.17
Sat Flow, veh/h	1723	1810	1538	1723	3052	397	1774	1863	1544	1774	1863	1580
Grp Volume(v), veh/h	373	305	5	86	192	196	3	136	12	14	80	23
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1730	1774	1863	1544	1774	1863	1580
Q Serve(g_s), s	11.8	7.2	0.1	2.7	5.6	5.8	0.1	4.0	0.4	0.4	2.2	0.7
Cycle Q Clear(g_c), s	11.8	7.2	0.1	2.7	5.6	5.8	0.1	4.0	0.4	0.4	2.2	0.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	482	723	614	215	420	423	73	273	227	106	308	261
V/C Ratio(X)	0.77	0.42	0.01	0.40	0.46	0.46	0.04	0.50	0.05	0.13	0.26	0.09
Avail Cap(c_a), veh/h	671	1283	1091	438	987	994	371	1070	887	362	1070	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	12.9	10.7	23.9	19.1	19.3	27.3	23.3	21.8	26.5	21.6	21.0
Incr Delay (d2), s/veh	3.8	0.4	0.0	1.2	0.8	0.8	0.2	1.4	0.1	0.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	3.6	0.1	1.4	2.8	2.8	0.1	2.1	0.2	0.2	1.2	0.3
LnGrp Delay(d),s/veh	23.4	13.3	10.8	25.1	19.8	20.1	27.6	24.7	21.9	27.0	22.0	21.1
LnGrp LOS	C	B	B	C	B	C	C	C	C	C	C	C
Approach Vol, veh/h		683			474			151			117	
Approach Delay, s/veh		18.8			20.9			24.5			22.5	
Approach LOS		B			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	27.7	6.4	13.8	20.6	18.5	7.5	12.7				
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1				
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0				
Max Q Clear Time (g_c+I1), s	4.7	9.2	2.1	4.2	13.8	7.8	2.4	6.0				
Green Ext Time (p_c), s	0.1	4.4	0.0	1.3	0.7	4.2	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			20.4									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	677	101	154	518	20	277	10	299	21	5	43
Future Volume (veh/h)	53	677	101	154	518	20	277	10	299	21	5	43
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96	0.98		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	55	705	96	160	540	19	289	10	83	22	5	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	92	1317	179	221	1720	60	468	523	438	449	135	324
Arrive On Green	0.05	0.43	0.41	0.13	0.51	0.48	0.28	0.28	0.28	0.28	0.28	0.27
Sat Flow, veh/h	1723	3037	413	1723	3383	119	1369	1863	1558	1280	481	1155
Grp Volume(v), veh/h	55	399	402	160	274	285	289	10	83	22	0	17
Grp Sat Flow(s),veh/h/ln	1723	1719	1731	1723	1719	1783	1369	1863	1558	1280	0	1636
Q Serve(g_s), s	2.4	13.1	13.2	6.8	7.1	7.2	14.9	0.3	3.1	1.0	0.0	0.6
Cycle Q Clear(g_c), s	2.4	13.1	13.2	6.8	7.1	7.2	15.5	0.3	3.1	1.3	0.0	0.6
Prop In Lane	1.00		0.24	1.00		0.07	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	92	746	751	221	874	907	468	523	438	449	0	459
V/C Ratio(X)	0.60	0.53	0.54	0.72	0.31	0.31	0.62	0.02	0.19	0.05	0.00	0.04
Avail Cap(c_a), veh/h	699	945	951	474	945	980	818	999	836	608	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	16.0	16.2	32.0	11.0	11.0	25.6	19.9	20.9	20.3	0.0	20.2
Incr Delay (d2), s/veh	6.0	1.3	1.3	4.4	0.4	0.4	1.3	0.0	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.5	6.6	3.5	3.5	3.6	5.8	0.2	1.4	0.3	0.0	0.3
LnGrp Delay(d),s/veh	41.4	17.2	17.4	36.4	11.4	11.5	26.9	19.9	21.1	20.4	0.0	20.3
LnGrp LOS	D	B	B	D	B	B	C	B	C	C		C
Approach Vol, veh/h		856			719			382			39	
Approach Delay, s/veh		18.9			17.0			25.5			20.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	37.2		25.5	8.1	42.9		25.5				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0				
Max Q Clear Time (g_c+I1), s	8.8	15.2		3.3	4.4	9.2		17.5				
Green Ext Time (p_c), s	0.3	16.0		1.4	0.1	18.4		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay			19.5									
HCM 2010 LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	831	55	100	458	138	38	117	238	200	132	40
Future Volume (veh/h)	23	831	55	100	458	138	38	117	238	200	132	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	25	894	56	108	492	60	41	126	28	215	142	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	1309	82	165	1575	699	337	354	281	291	306	260
Arrive On Green	0.04	0.39	0.37	0.09	0.45	0.45	0.19	0.19	0.19	0.16	0.16	0.00
Sat Flow, veh/h	1774	3375	211	1774	3539	1572	1774	1863	1481	1774	1863	1583
Grp Volume(v), veh/h	25	469	481	108	492	60	41	126	28	215	142	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1817	1774	1770	1572	1774	1863	1481	1774	1863	1583
Q Serve(g_s), s	1.3	21.4	21.4	5.7	8.7	2.1	1.9	5.7	1.5	11.2	6.7	0.0
Cycle Q Clear(g_c), s	1.3	21.4	21.4	5.7	8.7	2.1	1.9	5.7	1.5	11.2	6.7	0.0
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	686	704	165	1575	699	337	354	281	291	306	260
V/C Ratio(X)	0.39	0.68	0.68	0.65	0.31	0.09	0.12	0.36	0.10	0.74	0.46	0.00
Avail Cap(c_a), veh/h	577	767	787	577	1575	699	577	606	481	394	413	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.7	24.7	24.8	42.4	17.3	15.5	32.5	34.1	32.4	38.5	36.6	0.0
Incr Delay (d2), s/veh	3.9	3.2	3.1	4.3	0.2	0.1	0.2	0.6	0.2	4.8	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	11.0	11.3	3.0	4.3	0.9	0.9	3.0	0.6	5.9	3.5	0.0
LnGrp Delay(d),s/veh	49.6	27.9	27.9	46.8	17.6	15.6	32.7	34.7	32.6	43.3	37.7	0.0
LnGrp LOS	D	C	C	D	B	B	C	C	C	D	D	
Approach Vol, veh/h		975			660			195			357	
Approach Delay, s/veh		28.5			22.2			34.0			41.1	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	41.6		19.9	7.5	47.1		22.4
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	7.7	23.4		13.2	3.3	10.7		7.7
Green Ext Time (p_c), s	0.2	12.2		0.8	0.0	19.8		0.9

Intersection Summary		
HCM 2010 Ctrl Delay		29.1
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	114	40	151	146	10	18	512	256	0	241	166
Future Volume (veh/h)	256	114	40	151	146	10	18	512	256	0	241	166
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	259	115	12	153	147	0	18	517	200	0	243	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	813	84	225	366	311	476	758	292	0	1074	0
Arrive On Green	0.18	0.25	0.25	0.13	0.20	0.00	0.30	0.30	0.30	0.00	0.30	0.00
Sat Flow, veh/h	1774	3234	333	1774	1863	1583	1129	2497	961	0	3725	0
Grp Volume(v), veh/h	259	62	65	153	147	0	18	366	351	0	243	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1797	1774	1863	1583	1129	1770	1689	0	1770	0
Q Serve(g_s), s	5.3	1.0	1.1	3.1	2.6	0.0	0.5	6.8	6.9	0.0	1.9	0.0
Cycle Q Clear(g_c), s	5.3	1.0	1.1	3.1	2.6	0.0	2.4	6.8	6.9	0.0	1.9	0.0
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.57	0.00		0.00
Lane Grp Cap(c), veh/h	323	445	452	225	366	311	476	537	512	0	1074	0
V/C Ratio(X)	0.80	0.14	0.14	0.68	0.40	0.00	0.04	0.68	0.69	0.00	0.23	0.00
Avail Cap(c_a), veh/h	940	1407	1429	1411	1629	1385	1061	1454	1387	0	2908	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	14.8	11.0	11.0	15.7	13.2	0.0	10.7	11.5	11.6	0.0	9.8	0.0
Incr Delay (d2), s/veh	1.8	0.1	0.1	1.3	0.3	0.0	0.0	0.6	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.5	0.5	1.6	1.3	0.0	0.1	3.3	3.2	0.0	1.0	0.0
LnGrp Delay(d),s/veh	16.5	11.0	11.0	17.1	13.5	0.0	10.7	12.1	12.2	0.0	9.9	0.0
LnGrp LOS	B	B	B	B	B		B	B	B		A	
Approach Vol, veh/h		386			300			735			243	
Approach Delay, s/veh		14.7			15.3			12.1			9.9	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	13.5		15.4	10.9	11.4		15.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	5.1	3.1		3.9	7.3	4.6		8.9
Green Ext Time (p_c), s	0.1	0.5		2.2	0.1	0.5		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	290	64	198	232	17	144	808	569	31	421	161
Future Volume (veh/h)	134	290	64	198	232	17	144	808	569	31	421	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	140	302	48	206	242	2	150	842	262	32	439	53
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	196	607	95	250	809	362	206	1392	610	88	1158	513
Arrive On Green	0.11	0.20	0.18	0.14	0.23	0.23	0.12	0.40	0.40	0.05	0.34	0.34
Sat Flow, veh/h	1774	3060	481	1774	3539	1583	1723	3438	1507	1723	3438	1524
Grp Volume(v), veh/h	140	173	177	206	242	2	150	842	262	32	439	53
Grp Sat Flow(s),veh/h/ln	1774	1770	1771	1774	1770	1583	1723	1719	1507	1723	1719	1524
Q Serve(g_s), s	6.0	6.8	7.0	8.8	4.4	0.1	6.6	15.1	9.8	1.4	7.6	1.9
Cycle Q Clear(g_c), s	6.0	6.8	7.0	8.8	4.4	0.1	6.6	15.1	9.8	1.4	7.6	1.9
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	351	351	250	809	362	206	1392	610	88	1158	513
V/C Ratio(X)	0.71	0.49	0.50	0.82	0.30	0.01	0.73	0.61	0.43	0.36	0.38	0.10
Avail Cap(c_a), veh/h	250	872	873	250	1744	780	353	1827	801	353	1827	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	27.8	28.1	32.6	24.9	23.3	33.2	18.3	16.7	35.8	19.7	17.8
Incr Delay (d2), s/veh	6.8	1.1	1.1	19.7	0.2	0.0	1.9	0.4	0.5	0.9	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.4	3.5	5.7	2.2	0.0	3.2	7.2	4.1	0.7	3.7	0.8
LnGrp Delay(d),s/veh	40.3	28.9	29.2	52.3	25.1	23.3	35.0	18.8	17.2	36.7	20.1	18.0
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		490			450			1254			524	
Approach Delay, s/veh		32.3			37.6			20.4			20.9	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	35.6	15.0	19.5	13.3	30.3	12.6	21.9
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	13.4	17.1	10.8	9.0	8.6	9.6	8.0	6.4
Green Ext Time (p_c), s	0.0	12.9	0.0	3.7	0.1	15.1	0.1	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	197	0	10	0	0	0	10	255	0	0	62	63
Future Vol, veh/h	197	0	10	0	0	0	10	255	0	0	62	63
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	221	0	11	0	0	0	11	287	0	0	70	71
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.8	0	9.7	8.5
HCM LOS	B	-	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	11%	0%	95%	0%	0%	0%
Vol Thru, %	89%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	5%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	170	207	0	62	63
LT Vol	10	0	197	0	0	0
Through Vol	85	170	0	0	62	0
RT Vol	0	0	10	0	0	63
Lane Flow Rate	107	191	233	0	70	71
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.159	0.281	0.334	0	0.107	0.095
Departure Headway (Hd)	5.355	5.302	5.168	5.318	5.532	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	667	674	693	0	644	737
Service Time	3.113	3.059	3.221	3.403	3.298	2.591
HCM Lane V/C Ratio	0.16	0.283	0.336	0	0.109	0.096
HCM Control Delay	9.1	10.1	10.8	8.4	9	8.1
HCM Lane LOS	A	B	B	N	A	A
HCM 95th-tile Q	0.6	1.2	1.5	0	0.4	0.3

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	502	8	10	11	3	162
Future Vol, veh/h	502	8	10	11	3	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	598	10	12	13	4	193

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	41	2	4	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	37	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	960	1072	1617	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	953	1072	1617	-	-	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1617	-	953	1072	-	-
HCM Lane V/C Ratio	0.007	-	0.627	0.009	-	-
HCM Control Delay (s)	7.2	0	14.9	8.4	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	4.6	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	585	94	155	369	62	183	534	252	71	346	135
Future Volume (veh/h)	206	585	94	155	369	62	183	534	252	71	346	135
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	210	597	90	157	377	15	187	545	195	72	353	117
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	277	913	137	222	945	416	251	1156	512	121	661	216
Arrive On Green	0.16	0.30	0.28	0.13	0.27	0.27	0.15	0.34	0.34	0.07	0.26	0.24
Sat Flow, veh/h	1774	3061	460	1774	3539	1558	1723	3438	1523	1723	2540	829
Grp Volume(v), veh/h	210	344	343	157	377	15	187	545	195	72	237	233
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1770	1558	1723	1719	1523	1723	1719	1650
Q Serve(g_s), s	10.6	15.9	16.1	8.0	8.2	0.7	9.8	11.7	9.2	3.8	11.1	11.5
Cycle Q Clear(g_c), s	10.6	15.9	16.1	8.0	8.2	0.7	9.8	11.7	9.2	3.8	11.1	11.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	277	528	523	222	945	416	251	1156	512	121	448	430
V/C Ratio(X)	0.76	0.65	0.66	0.71	0.40	0.04	0.74	0.47	0.38	0.60	0.53	0.54
Avail Cap(c_a), veh/h	879	876	867	879	1753	772	853	1703	754	853	851	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	28.7	28.9	39.4	28.2	25.5	38.4	24.6	23.7	42.4	29.8	30.3
Incr Delay (d2), s/veh	4.2	1.4	1.4	4.1	0.3	0.0	4.3	0.3	0.5	4.7	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	7.9	7.9	4.2	4.0	0.3	4.9	5.6	3.9	2.0	5.4	5.3
LnGrp Delay(d),s/veh	42.1	30.1	30.3	43.6	28.5	25.5	42.7	24.9	24.2	47.0	30.8	31.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		897			549			927			542	
Approach Delay, s/veh		33.0			32.7			28.3			33.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	32.0	17.7	28.4	18.7	29.1	10.6	35.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	10.0	18.1	11.8	13.5	12.6	10.2	5.8	13.7
Green Ext Time (p_c), s	0.4	7.5	0.5	8.4	0.6	7.9	0.2	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	1320	813	25	34	285
Future Volume (vph)	471	1320	813	25	34	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3423		1770	1583
Flt Permitted	0.16	1.00	1.00		0.95	1.00
Satd. Flow (perm)	293	3438	3423		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	496	1389	856	26	36	300
RTOR Reduction (vph)	0	0	3	0	0	228
Lane Group Flow (vph)	496	1389	879	0	36	72
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	49.9	54.5	28.9		19.9	19.9
Effective Green, g (s)	51.1	55.1	29.5		20.1	20.1
Actuated g/C Ratio	0.61	0.66	0.35		0.24	0.24
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	550	2276	1213		427	382
v/s Ratio Prot	c0.23	0.40	0.26		0.02	
v/s Ratio Perm	c0.32					c0.05
v/c Ratio	0.90	0.61	0.72		0.08	0.19
Uniform Delay, d1	19.3	8.0	23.3		24.4	25.1
Progression Factor	0.82	0.56	1.00		1.00	1.00
Incremental Delay, d2	14.9	0.4	2.2		0.0	0.1
Delay (s)	30.8	4.8	25.5		24.5	25.2
Level of Service	C	A	C		C	C
Approach Delay (s)		11.6	25.5		25.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	12.2
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	300	10	645	308	510	22	472	994	571	450	36
Future Volume (veh/h)	42	300	10	645	308	510	22	472	994	571	450	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	43	309	8	665	318	0	23	487	831	589	464	34
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	82	590	15	757	1209	541	69	954	1360	699	1451	106
Arrive On Green	0.05	0.17	0.16	0.23	0.35	0.00	0.04	0.28	0.28	0.21	0.45	0.43
Sat Flow, veh/h	1774	3525	91	3343	3438	1538	1723	3438	2692	3343	3249	237
Grp Volume(v), veh/h	43	155	162	665	318	0	23	487	831	589	245	253
Grp Sat Flow(s),veh/h/ln	1774	1770	1847	1672	1719	1538	1723	1719	1346	1672	1719	1768
Q Serve(g_s), s	3.3	11.0	11.1	26.5	9.1	0.0	1.8	16.5	30.6	23.3	12.7	12.8
Cycle Q Clear(g_c), s	3.3	11.0	11.1	26.5	9.1	0.0	1.8	16.5	30.6	23.3	12.7	12.8
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	82	296	309	757	1209	541	69	954	1360	699	768	789
V/C Ratio(X)	0.53	0.52	0.52	0.88	0.26	0.00	0.33	0.51	0.61	0.84	0.32	0.32
Avail Cap(c_a), veh/h	392	686	716	775	1345	602	312	1046	1432	751	768	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	52.4	52.5	51.5	32.0	0.0	64.5	42.0	24.6	52.4	24.6	24.8
Incr Delay (d2), s/veh	2.0	3.0	2.9	11.9	0.2	0.0	1.0	0.4	0.7	9.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.6	5.9	13.5	4.4	0.0	0.9	7.9	11.5	11.7	6.0	6.3
LnGrp Delay(d),s/veh	66.3	55.5	55.4	63.5	32.2	0.0	65.5	42.4	25.3	61.8	24.9	25.0
LnGrp LOS	E	E	E	E	C		E	D	C	E	C	C
Approach Vol, veh/h		360			983			1341			1087	
Approach Delay, s/veh		56.7			53.4			32.2			44.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	27.6	9.5	65.6	10.3	52.5	32.8	42.3
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	25.3	13.1	3.8	14.8	5.3	11.1	25.3	32.6
Green Ext Time (p_c), s	0.7	8.5	0.0	12.6	0.0	8.6	1.5	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	19	258	28	334	33	1019	424	296	469	26
Future Volume (veh/h)	0	0	19	258	28	334	33	1019	424	296	469	26
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				293	0	55	35	1073	0	312	494	24
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				580	0	255	476	1407	598	388	2324	113
Arrive On Green				0.16	0.00	0.16	0.38	0.38	0.00	0.22	0.68	0.68
Sat Flow, veh/h				3548	0	1557	879	3725	1583	1774	3436	167
Grp Volume(v), veh/h				293	0	55	35	1073	0	312	254	264
Grp Sat Flow(s),veh/h/ln				1774	0	1557	879	1863	1583	1774	1770	1833
Q Serve(g_s), s				3.8	0.0	1.5	1.3	12.6	0.0	8.3	2.7	2.7
Cycle Q Clear(g_c), s				3.8	0.0	1.5	1.3	12.6	0.0	8.3	2.7	2.7
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h				580	0	255	476	1407	598	388	1197	1240
V/C Ratio(X)				0.51	0.00	0.22	0.07	0.76	0.00	0.81	0.21	0.21
Avail Cap(c_a), veh/h				2558	0	1123	602	1940	825	569	1197	1240
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				19.0	0.0	18.1	10.1	13.6	0.0	18.5	3.1	3.1
Incr Delay (d2), s/veh				0.3	0.0	0.2	0.0	0.7	0.0	6.7	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	0.7	0.3	6.6	0.0	4.8	1.3	1.3
LnGrp Delay(d),s/veh				19.3	0.0	18.3	10.1	14.3	0.0	25.2	3.1	3.1
LnGrp LOS				B		B	B	B		C	A	A
Approach Vol, veh/h					348			1108			830	
Approach Delay, s/veh					19.1			14.2			11.4	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.9	22.9				37.8		12.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	10.3	14.6				4.7		5.8
Green Ext Time (p_c), s	0.7	3.9				7.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	821	0	0	577	301	456
Future Volume (vph)	821	0	0	577	301	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	933	0	0	656	342	518
RTOR Reduction (vph)	0	0	0	71	0	320
Lane Group Flow (vph)	933	0	0	585	342	198
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	16.3			14.7	14.7	14.7
Effective Green, g (s)	17.3			15.7	15.7	15.7
Actuated g/C Ratio	0.42			0.38	0.38	0.38
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2105			1067	1314	1067
v/s Ratio Prot	c0.19			c0.21	0.10	0.07
v/s Ratio Perm						
v/c Ratio	0.44			0.55	0.26	0.19
Uniform Delay, d1	8.4			9.9	8.7	8.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.6	0.1	0.1
Delay (s)	8.6			10.5	8.8	8.5
Level of Service	A			B	A	A
Approach Delay (s)		8.6	10.5		8.6	
Approach LOS		A	B		A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	438	592	5	57	656	262	34	290	214	227	206	461
Future Volume (veh/h)	438	592	5	57	656	262	34	290	214	227	206	461
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	471	637	5	61	705	0	37	312	154	244	222	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	551	1658	13	86	1204	538	66	471	227	297	603	0
Arrive On Green	0.16	0.46	0.45	0.05	0.35	0.00	0.04	0.20	0.20	0.17	0.33	0.00
Sat Flow, veh/h	3442	3599	28	1723	3438	1538	1774	2316	1118	1723	1810	0
Grp Volume(v), veh/h	471	313	329	61	705	0	37	237	229	244	222	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1858	1723	1719	1538	1774	1770	1664	1723	1810	0
Q Serve(g_s), s	18.6	16.2	16.2	4.9	23.4	0.0	2.9	17.2	17.8	19.1	13.0	0.0
Cycle Q Clear(g_c), s	18.6	16.2	16.2	4.9	23.4	0.0	2.9	17.2	17.8	19.1	13.0	0.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	551	815	856	86	1204	538	66	360	338	297	603	0
V/C Ratio(X)	0.85	0.38	0.38	0.71	0.59	0.00	0.56	0.66	0.68	0.82	0.37	0.00
Avail Cap(c_a), veh/h	1021	1032	1084	255	1495	669	273	771	724	388	917	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.1	24.7	24.7	65.5	37.2	0.0	66.2	51.3	51.8	55.8	35.5	0.0
Incr Delay (d2), s/veh	1.5	1.1	1.0	4.0	1.6	0.0	2.7	7.2	8.3	8.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	8.2	8.6	2.4	11.4	0.0	1.5	9.1	9.0	9.7	6.8	0.0
LnGrp Delay(d),s/veh	58.6	25.8	25.8	69.5	38.8	0.0	68.9	58.5	60.1	63.9	36.8	0.0
LnGrp LOS	E	C	C	E	D		E	E	E	E	D	
Approach Vol, veh/h		1113			766			503			466	
Approach Delay, s/veh		39.7			41.3			60.0			51.0	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	68.4	9.2	51.3	26.4	53.0	28.1	32.4
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 23	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	16.9	18.2	4.9	15.0	20.6	25.4	21.1	19.8
Green Ext Time (p_c), s	0.0	32.3	0.0	2.3	0.3	22.7	1.5	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	854	0	0	570	198	133	845	66	0	0	0
Future Volume (veh/h)	396	854	0	0	570	198	133	845	66	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	408	880	0	0	588	182	137	871	30			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	492	2205	0	0	1186	366	550	1098	476			
Arrive On Green	0.29	1.00	0.00	0.00	0.45	0.44	0.31	0.31	0.31			
Sat Flow, veh/h	3442	3632	0	0	2748	820	1774	3539	1533			
Grp Volume(v), veh/h	408	880	0	0	391	379	137	871	30			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1705	1774	1770	1533			
Q Serve(g_s), s	13.3	0.0	0.0	0.0	18.9	19.0	6.9	27.0	1.7			
Cycle Q Clear(g_c), s	13.3	0.0	0.0	0.0	18.9	19.0	6.9	27.0	1.7			
Prop In Lane	1.00		0.00	0.00		0.48	1.00		1.00			
Lane Grp Cap(c), veh/h	492	2205	0	0	791	762	550	1098	476			
V/C Ratio(X)	0.83	0.40	0.00	0.00	0.50	0.50	0.25	0.79	0.06			
Avail Cap(c_a), veh/h	924	2205	0	0	791	762	786	1569	680			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.55	0.55	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	41.5	0.0	0.0	0.0	23.6	23.8	30.9	37.9	29.1			
Incr Delay (d2), s/veh	2.5	0.3	0.0	0.0	2.2	2.3	0.3	2.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	0.1	0.0	0.0	9.6	9.5	3.4	13.5	0.7			
LnGrp Delay(d),s/veh	43.9	0.3	0.0	0.0	25.8	26.1	31.2	40.0	29.2			
LnGrp LOS	D	A			C	C	C	D	C			
Approach Vol, veh/h		1288			770			1038				
Approach Delay, s/veh		14.1			25.9			38.5				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		78.8			21.2	57.6		41.2
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		57.9			* 32	21.7		53.0
Max Q Clear Time (g_c+I1), s		2.0			15.3	21.0		29.0
Green Ext Time (p_c), s		20.1			1.6	0.6		8.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1068	24	124	566	0	0	0	0	134	851	341
Future Volume (veh/h)	0	1068	24	124	566	0	0	0	0	134	851	341
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1124	0	131	596	0				141	896	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1634	0	158	2067	0				164	1097	553
Arrive On Green	0.00	0.46	0.00	0.18	1.00	0.00				0.35	0.35	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				469	3140	1583
Grp Volume(v), veh/h	0	1124	0	131	596	0				553	484	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1839	1770	1583
Q Serve(g_s), s	0.0	30.1	0.0	8.5	0.0	0.0				33.6	29.4	0.0
Cycle Q Clear(g_c), s	0.0	30.1	0.0	8.5	0.0	0.0				33.6	29.4	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.26		1.00
Lane Grp Cap(c), veh/h	0	1634	0	158	2067	0				642	618	553
V/C Ratio(X)	0.00	0.69	0.00	0.83	0.29	0.00				0.86	0.78	0.00
Avail Cap(c_a), veh/h	0	1634	0	180	2067	0				754	726	649
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.83	0.83	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	25.5	0.0	48.5	0.0	0.0				36.3	35.0	0.0
Incr Delay (d2), s/veh	0.0	2.4	0.0	21.7	0.3	0.0				9.1	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.2	0.0	5.1	0.1	0.0				18.7	15.3	0.0
LnGrp Delay(d),s/veh	0.0	27.9	0.0	70.1	0.3	0.0				45.5	40.0	0.0
LnGrp LOS		C		E	A					D	D	
Approach Vol, veh/h		1124			727						1037	
Approach Delay, s/veh		27.9			12.9						42.9	
Approach LOS		C			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.7	59.4		45.9		74.1		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 13	45.7		* 49		61.9		
Max Q Clear Time (g_c+I1), s	10.5	32.1		35.6		2.0		
Green Ext Time (p_c), s	0.1	9.9		6.2		23.4		

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑	↱	↰↰	↑↱		↰	↑↑	↱	↰	↑↱	
Traffic Volume (veh/h)	325	365	195	543	417	87	240	662	445	117	684	159
Future Volume (veh/h)	325	365	195	543	417	87	240	662	445	117	684	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	353	397	30	590	453	80	261	720	147	127	743	156
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	439	595	266	656	694	122	296	1334	596	173	892	187
Arrive On Green	0.13	0.17	0.17	0.20	0.24	0.23	0.17	0.38	0.38	0.10	0.31	0.29
Sat Flow, veh/h	3343	3438	1538	3343	2918	512	1774	3539	1582	1774	2903	609
Grp Volume(v), veh/h	353	397	30	590	266	267	261	720	147	127	453	446
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1710	1774	1770	1582	1774	1770	1742
Q Serve(g_s), s	10.5	11.0	1.7	17.6	14.2	14.4	14.7	16.2	6.5	7.1	24.3	24.4
Cycle Q Clear(g_c), s	10.5	11.0	1.7	17.6	14.2	14.4	14.7	16.2	6.5	7.1	24.3	24.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	439	595	266	656	409	407	296	1334	596	173	544	535
V/C Ratio(X)	0.80	0.67	0.11	0.90	0.65	0.66	0.88	0.54	0.25	0.74	0.83	0.83
Avail Cap(c_a), veh/h	825	1088	487	694	477	474	368	1397	625	229	560	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	39.5	35.6	40.1	35.1	35.3	41.5	24.9	21.9	44.8	32.9	33.1
Incr Delay (d2), s/veh	2.6	0.5	0.1	13.7	1.5	1.7	16.2	0.4	0.2	5.0	10.2	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.3	0.7	9.4	6.9	7.0	8.5	8.0	2.9	3.7	13.4	13.2
LnGrp Delay(d),s/veh	45.7	39.9	35.7	53.8	36.6	37.0	57.7	25.3	22.1	49.8	43.1	43.5
LnGrp LOS	D	D	D	D	D	D	E	C	C	D	D	D
Approach Vol, veh/h		780			1123			1128			1026	
Approach Delay, s/veh		42.4			45.7			32.4			44.1	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	42.5	24.0	21.7	21.0	35.4	17.4	28.3
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	31.0	* 21	31.0	* 25	27.0
Max Q Clear Time (g_c+I1), s	9.1	18.2	19.6	13.0	16.7	26.4	12.5	16.4
Green Ext Time (p_c), s	0.1	11.5	0.2	3.1	0.2	3.6	0.7	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	53	56	141	25	0	0	0	0	111	2	13
Future Vol, veh/h	0	53	56	141	25	0	0	0	0	111	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	75	188	33	0	0	0	0	148	3	17

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	71	0	0				480	480	33
Stage 1	-	-	-	-	-	-				409	409	-
Stage 2	-	-	-	-	-	-				71	71	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1529	-	0				545	485	1041
Stage 1	0	-	-	-	-	0				671	596	-
Stage 2	0	-	-	-	-	0				952	836	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1529	-	-				478	0	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-				478	0	-
Stage 1	-	-	-	-	-	-				588	0	-
Stage 2	-	-	-	-	-	-				952	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.5	15
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1529	-	478	1041
HCM Lane V/C Ratio	-	-	0.123	-	0.31	0.019
HCM Control Delay (s)	-	-	7.7	-	15.9	8.5
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	-	1.3	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	124	0	0	83	198	85	1	56	0	0	0
Future Vol, veh/h	41	124	0	0	83	198	85	1	56	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	161	0	0	108	257	110	1	73	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	108	0	-	-	-	0	376	376	161
Stage 1	-	-	-	-	-	-	268	268	-
Stage 2	-	-	-	-	-	-	108	108	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	0	0	-	-	625	555	884
Stage 1	-	-	0	0	-	-	777	687	-
Stage 2	-	-	0	0	-	-	916	806	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1483	-	-	-	-	-	603	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	603	0	-
Stage 1	-	-	-	-	-	-	749	0	-
Stage 2	-	-	-	-	-	-	916	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.9	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	603	884	1483	-	-	-
HCM Lane V/C Ratio	0.183	0.084	0.036	-	-	-
HCM Control Delay (s)	12.3	9.4	7.5	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	177	0	0	147	274	2	1	109	0	0	0
Future Vol, veh/h	4	177	0	0	147	274	2	1	109	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	199	0	0	165	308	2	1	122	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.5	10.1	9.4
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	67%	0%	100%	0%	0%	0%	0%
Vol Thru, %	33%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	109	4	89	89	147	274
LT Vol	2	0	4	0	0	0	0
Through Vol	1	0	0	89	89	147	0
RT Vol	0	109	0	0	0	0	274
Lane Flow Rate	3	122	4	99	99	165	308
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.006	0.184	0.008	0.159	0.111	0.243	0.392
Departure Headway (Hd)	6.435	5.399	6.273	5.77	4.023	5.293	4.589
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	552	658	567	618	880	676	779
Service Time	4.222	3.186	4.05	3.546	1.798	3.055	2.352
HCM Lane V/C Ratio	0.005	0.185	0.007	0.16	0.113	0.244	0.395
HCM Control Delay	9.3	9.4	9.1	9.6	7.3	9.8	10.3
HCM Lane LOS	A	A	A	A	A	A	B
HCM 95th-tile Q	0	0.7	0	0.6	0.4	0.9	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	255	0	0	0	355	43	0	0	76	66
Future Volume (veh/h)	34	0	255	0	0	0	355	43	0	0	76	66
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	38	0	29				394	48	0	0	84	13
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	70	0	62				499	1180	0	0	351	297
Arrive On Green	0.04	0.00	0.04				0.28	0.63	0.00	0.00	0.19	0.19
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1579
Grp Volume(v), veh/h	38	0	29				394	48	0	0	84	13
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1579
Q Serve(g_s), s	0.5	0.0	0.4				5.0	0.2	0.0	0.0	0.9	0.2
Cycle Q Clear(g_c), s	0.5	0.0	0.4				5.0	0.2	0.0	0.0	0.9	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	70	0	62				499	1180	0	0	351	297
V/C Ratio(X)	0.54	0.00	0.47				0.79	0.04	0.00	0.00	0.24	0.04
Avail Cap(c_a), veh/h	1742	0	1554				1466	4595	0	0	4595	3895
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	11.5				8.1	1.7	0.0	0.0	8.4	8.1
Incr Delay (d2), s/veh	2.4	0.0	2.0				1.1	0.0	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4				2.6	0.1	0.0	0.0	0.5	0.1
LnGrp Delay(d),s/veh	14.0	0.0	13.5				9.2	1.7	0.0	0.0	8.8	8.2
LnGrp LOS	B		B				A	A			A	A
Approach Vol, veh/h		67						442			97	
Approach Delay, s/veh		13.8						8.4			8.7	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		19.5		5.0	10.9	8.6		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.2		2.5	7.0	2.9		
Green Ext Time (p_c), s		1.2		0.0	0.2	1.2		

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	210	6	0	1	8	2	8	26	1	4	9	167
Future Vol, veh/h	210	6	0	1	8	2	8	26	1	4	9	167
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	269	8	0	1	10	3	10	33	1	5	12	214
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.5	7.9	8.3	8.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	97%	9%	2%
Vol Thru, %	74%	3%	73%	5%
Vol Right, %	3%	0%	18%	93%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	216	11	180
LT Vol	8	210	1	4
Through Vol	26	6	8	9
RT Vol	1	0	2	167
Lane Flow Rate	45	277	14	231
Geometry Grp	1	1	1	1
Degree of Util (X)	0.062	0.365	0.019	0.267
Departure Headway (Hd)	4.941	4.743	4.787	4.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	724	756	744	863
Service Time	2.98	2.782	2.838	2.188
HCM Lane V/C Ratio	0.062	0.366	0.019	0.268
HCM Control Delay	8.3	10.5	7.9	8.7
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	1.7	0.1	1.1

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	92	18	136	91	7	20	2	164	3	1	2
Future Vol, veh/h	5	92	18	136	91	7	20	2	164	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	115	23	170	114	9	25	3	205	4	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	138	0	0	599	602	126	701	608	118
Stage 1	-	-	-	-	-	-	139	139	-	458	458	-
Stage 2	-	-	-	-	-	-	460	463	-	243	150	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1464	-	-	1446	-	-	413	414	924	353	410	934
Stage 1	-	-	-	-	-	-	864	782	-	583	567	-
Stage 2	-	-	-	-	-	-	581	564	-	761	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1446	-	-	370	360	924	246	357	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	370	360	-	246	357	-
Stage 1	-	-	-	-	-	-	861	779	-	581	496	-
Stage 2	-	-	-	-	-	-	505	493	-	588	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	4.5	11.5	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	784	1464	-	-	1446	-	-	607
HCM Lane V/C Ratio	0.297	0.004	-	-	0.118	-	-	0.006
HCM Control Delay (s)	11.5	7.5	0	-	7.8	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.4	-	-	0

Intersection						
Int Delay, s/veh	0.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	0	175	32	0	171
Future Vol, veh/h	19	0	175	32	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	0	243	44	0	238

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	503	265	0	0	288	0
Stage 1	265	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	528	774	-	-	1274	-
Stage 1	779	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	528	774	-	-	1274	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	528	1274	-
HCM Lane V/C Ratio	-	-	0.05	-	-
HCM Control Delay (s)	-	-	12.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	101	165	147	200	296	181	68	133	195	57	76
Future Volume (veh/h)	24	101	165	147	200	296	181	68	133	195	57	76
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	120	47	175	238	110	215	81	28	232	68	15
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	629	282	437	740	331	588	592	196	449	651	291
Arrive On Green	0.08	0.18	0.18	0.13	0.21	0.21	0.17	0.23	0.21	0.13	0.18	0.18
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	2615	865	3442	3539	1583
Grp Volume(v), veh/h	29	120	47	175	238	110	215	54	55	232	68	15
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1710	1721	1770	1583
Q Serve(g_s), s	0.4	1.4	1.2	2.2	2.7	2.8	2.6	1.1	1.2	3.0	0.8	0.4
Cycle Q Clear(g_c), s	0.4	1.4	1.2	2.2	2.7	2.8	2.6	1.1	1.2	3.0	0.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	271	629	282	437	740	331	588	401	387	449	651	291
V/C Ratio(X)	0.11	0.19	0.17	0.40	0.32	0.33	0.37	0.13	0.14	0.52	0.10	0.05
Avail Cap(c_a), veh/h	1565	4588	2052	1565	4528	2026	1565	2275	2199	1550	4543	2032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	16.5	16.5	19.0	15.9	15.9	17.3	14.6	14.8	19.2	16.1	15.9
Incr Delay (d2), s/veh	0.1	0.2	0.3	0.2	0.2	0.4	0.1	0.2	0.3	0.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.5	1.1	1.3	1.2	1.2	0.6	0.6	1.4	0.4	0.2
LnGrp Delay(d),s/veh	20.3	16.7	16.8	19.2	16.0	16.3	17.5	14.8	15.1	19.5	16.2	16.0
LnGrp LOS	C	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		196			523			324			315	
Approach Delay, s/veh		17.3			17.1			16.6			18.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	12.4	12.1	12.8	7.7	14.7	10.2	14.7
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60
Max Q Clear Time (g_c+I1), s	4.2	3.4	4.6	2.8	2.4	4.8	5.0	3.2
Green Ext Time (p_c), s	0.1	2.3	0.1	1.8	0.0	2.3	0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	391	49	186	464	91	64	110	166	55	98	17
Future Volume (veh/h)	12	391	49	186	464	91	64	110	166	55	98	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.94		0.89	0.93		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	508	32	242	603	114	83	143	47	71	127	17
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	15	698	576	271	790	149	197	317	444	156	255	30
Arrive On Green	0.01	0.37	0.37	0.15	0.52	0.51	0.30	0.32	0.32	0.32	0.32	0.31
Sat Flow, veh/h	1774	1863	1537	1774	1524	288	429	1004	1408	296	794	94
Grp Volume(v), veh/h	16	508	32	242	0	717	226	0	47	215	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1537	1774	0	1812	1433	0	1408	1184	0	0
Q Serve(g_s), s	0.7	18.6	1.1	10.6	0.0	25.1	0.0	0.0	1.9	5.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	18.6	1.1	10.6	0.0	25.1	10.2	0.0	1.9	15.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.16	0.37		1.00	0.33		0.08
Lane Grp Cap(c), veh/h	15	698	576	271	0	940	496	0	444	441	0	0
V/C Ratio(X)	1.04	0.73	0.06	0.89	0.00	0.76	0.46	0.00	0.11	0.49	0.00	0.00
Avail Cap(c_a), veh/h	435	951	785	435	0	940	496	0	444	582	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.4	21.4	15.9	33.0	0.0	15.3	21.9	0.0	19.3	23.3	0.0	0.0
Incr Delay (d2), s/veh	75.2	2.2	0.0	8.6	0.0	3.9	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.9	0.5	5.8	0.0	13.4	4.2	0.0	0.7	4.2	0.0	0.0
LnGrp Delay(d),s/veh	115.3	23.5	15.9	41.7	0.0	19.2	22.1	0.0	19.3	23.7	0.0	0.0
LnGrp LOS	F	C	B	D		B	C		B	C		
Approach Vol, veh/h		556			959			273			215	
Approach Delay, s/veh		25.7			24.8			21.6			23.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	33.8		29.6	4.7	45.2		29.6
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.0	40.0		32.1	20.0	40.0		* 20
Max Q Clear Time (g_c+I1), s	12.6	20.6		17.2	2.7	27.1		12.2
Green Ext Time (p_c), s	0.1	8.6		0.5	0.0	7.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	24	3	263	3	48	3	122	292	64	190	4
Future Vol, veh/h	19	24	3	263	3	48	3	122	292	64	190	4
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	30	4	325	4	59	4	151	360	79	235	5
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	12.2	22.5	16.3	13.7
HCM LOS	B	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	41%	100%	0%	40%	0%
Vol Thru, %	98%	0%	52%	0%	6%	60%	96%
Vol Right, %	0%	100%	7%	0%	94%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	292	46	263	51	159	99
LT Vol	3	0	19	263	0	64	0
Through Vol	122	0	24	0	3	95	95
RT Vol	0	292	3	0	48	0	4
Lane Flow Rate	154	360	57	325	63	196	122
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.292	0.61	0.126	0.681	0.111	0.396	0.239
Departure Headway (Hd)	6.819	6.091	7.998	7.549	6.368	7.261	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	528	591	448	481	566	497	511
Service Time	4.557	3.829	6.053	5.249	4.068	5.003	4.767
HCM Lane V/C Ratio	0.292	0.609	0.127	0.676	0.111	0.394	0.239
HCM Control Delay	12.4	17.9	12.2	24.9	9.9	14.7	12
HCM Lane LOS	B	C	B	C	A	B	B
HCM 95th-tile Q	1.2	4.1	0.4	5.1	0.4	1.9	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	235	159	0	317	0	167	302	0	1	452	252
Future Volume (veh/h)	263	235	159	0	317	0	167	302	0	1	452	252
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	302	255	63	0	345	0	192	347	0	1	520	106
Adj No. of Lanes	1	0	1	0	2	0	1	2	0	1	1	1
Peak Hour Factor	0.87	0.92	0.87	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	303	0	458	0	231	1736	0	2	662	563
Arrive On Green	0.19	0.20	0.19	0.00	0.13	0.00	0.13	0.49	0.00	0.00	0.36	0.36
Sat Flow, veh/h	1774	0	1567	0	3725	0	1774	3632	0	1774	1863	1583
Grp Volume(v), veh/h	302	0	63	0	345	0	192	347	0	1	520	106
Grp Sat Flow(s),veh/h/ln	1774	0	1567	0	1770	0	1774	1770	0	1774	1863	1583
Q Serve(g_s), s	14.3	0.0	2.9	0.0	8.1	0.0	9.1	4.8	0.0	0.0	21.5	4.0
Cycle Q Clear(g_c), s	14.3	0.0	2.9	0.0	8.1	0.0	9.1	4.8	0.0	0.0	21.5	4.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	303	0	458	0	231	1736	0	2	662	563
V/C Ratio(X)	0.88	0.00	0.21	0.00	0.75	0.00	0.83	0.20	0.00	0.49	0.79	0.19
Avail Cap(c_a), veh/h	606	0	535	0	656	0	370	2144	0	82	826	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	29.2	0.0	36.3	0.0	36.6	12.4	0.0	43.1	24.9	19.2
Incr Delay (d2), s/veh	7.3	0.0	0.3	0.0	3.0	0.0	4.2	0.2	0.0	53.9	4.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	1.3	0.0	4.2	0.0	4.7	2.4	0.0	0.1	11.7	1.8
LnGrp Delay(d),s/veh	41.1	0.0	29.6	0.0	39.3	0.0	40.8	12.6	0.0	97.0	29.0	19.4
LnGrp LOS	D		C		D		D	B		F	C	B
Approach Vol, veh/h		365			345			539			627	
Approach Delay, s/veh		39.1			39.3			22.6			27.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.6	46.4		15.2	15.2	34.7		21.2
Change Period (Y+Rc), s	3.5	4.3		4.0	* 4.2	4.3		4.0
Max Green Setting (Gmax), s	4.5	52.0		16.0	* 18	38.0		30.0
Max Q Clear Time (g_c+I1), s	2.0	6.8		10.1	11.1	23.5		16.3
Green Ext Time (p_c), s	0.0	11.0		1.1	0.0	6.9		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

Intersection						
Int Delay, s/veh	5.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	224	243	198	153	36
Future Vol, veh/h	51	224	243	198	153	36
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	291	316	257	199	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1088	200	200	0	-	0
Stage 1	200	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	239	841	1372	-	-	0
Stage 1	834	-	-	-	-	0
Stage 2	402	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	184	840	1372	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	309	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	4.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1372	-	992	-
HCM Lane V/C Ratio	0.23	-	0.36	-
HCM Control Delay (s)	8.4	-	10.7	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.9	-	1.7	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	235	0	49	317	11	0	0	36	8	0	0
Future Vol, veh/h	0	235	0	49	317	11	0	0	36	8	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	255	0	53	345	12	0	0	39	9	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	189	56	0	165	37	20	0	0	0	39	0	0
Stage 1	17	17	-	20	20	-	-	-	-	-	-	-
Stage 2	172	39	-	145	17	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	754	834	-	784	855	1053	-	-	-	1569	-	-
Stage 1	1000	881	-	996	878	-	-	-	-	-	-	-
Stage 2	813	862	-	843	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	508	829	-	-	850	1053	-	-	-	1569	-	-
Mov Cap-2 Maneuver	508	829	-	-	850	-	-	-	-	-	-	-
Stage 1	1000	876	-	996	878	-	-	-	-	-	-	-
Stage 2	488	862	-	594	876	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	7.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	829	-	-	861	1569	-	-
HCM Lane V/C Ratio	-	-	-	0.154	-	-	0.214	0.006	-	-
HCM Control Delay (s)	0	-	-	10.1	-	-	10.3	7.3	0	-
HCM Lane LOS	A	-	-	B	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.5	-	-	0.8	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	173	70	459	620	11
Future Vol, veh/h	9	173	70	459	620	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	211	85	560	756	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1493	763	770	0	-	0
Stage 1	763	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	136	404	844	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	404	844	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.8	1.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	844	-	360	-	-
HCM Lane V/C Ratio	0.101	-	0.617	-	-
HCM Control Delay (s)	9.7	0	29.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.3	-	3.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	207	82	0	515	765	0	0	0	353	2	136
Future Volume (veh/h)	0	207	82	0	515	765	0	0	0	353	2	136
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	227	0	0	566	0				389	0	48
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2080	0	0	1448	648				1016	0	453
Arrive On Green	0.00	0.42	0.00	0.00	0.42	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	227	0	0	566	0				389	0	48
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	0.8	0.0	0.0	3.1	0.0				2.4	0.0	0.6
Cycle Q Clear(g_c), s	0.0	0.8	0.0	0.0	3.1	0.0				2.4	0.0	0.6
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2080	0	0	1448	648				1016	0	453
V/C Ratio(X)	0.00	0.11	0.00	0.00	0.39	0.00				0.38	0.00	0.11
Avail Cap(c_a), veh/h	0	11024	0	0	7672	3432				4024	0	1796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.8	0.0	0.0	5.5	0.0				7.8	0.0	7.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	1.4	0.0				1.1	0.0	0.3
LnGrp Delay(d),s/veh	0.0	4.8	0.0	0.0	5.5	0.0				7.9	0.0	7.2
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		227			566						437	
Approach Delay, s/veh		4.8			5.5						7.8	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		15.5		11.8		15.5		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		2.8		4.4		5.1		
Green Ext Time (p_c), s		3.4		0.8		3.4		

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	500	42	0	1162	402	124	0	464	0	0	0
Future Volume (vph)	0	500	42	0	1162	402	124	0	464	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frpb, ped/bikes		1.00			0.99			1.00	1.00			
Flpb, ped/bikes		1.00			1.00			1.00	1.00			
Frt		0.99			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4874			4716			1770	2787			
Flt Permitted		1.00			1.00			0.95	1.00			
Satd. Flow (perm)		4874			4716			1770	2787			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	549	46	0	1277	442	136	0	510	0	0	0
RTOR Reduction (vph)	0	7	0	0	75	0	0	0	83	0	0	0
Lane Group Flow (vph)	0	588	0	0	1644	0	0	136	427	0	0	0
Confl. Peds. (#/hr)			3			3						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases												
Actuated Green, G (s)		14.3			26.4			9.4	21.5			
Effective Green, g (s)		17.1			29.2			12.2	24.3			
Actuated g/C Ratio		0.35			0.59			0.25	0.49			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1687			2787			437	1370			
v/s Ratio Prot		0.12			c0.35			0.08	c0.15			
v/s Ratio Perm												
v/c Ratio		0.35			0.59			0.31	0.31			
Uniform Delay, d1		12.0			6.3			15.2	7.5			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		0.0			0.2			0.1	0.0			
Delay (s)		12.1			6.5			15.3	7.6			
Level of Service		B			A			B	A			
Approach Delay (s)		12.1			6.5			9.2			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	515	183	20	850	164	220	164	15	132	207	419
Future Volume (veh/h)	225	515	183	20	850	164	220	164	15	132	207	419
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	566	78	22	934	154	242	180	0	145	227	268
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	358	1242	556	57	1212	199	1039	1342	600	183	626	278
Arrive On Green	0.11	0.36	0.36	0.03	0.28	0.27	0.30	0.38	0.00	0.10	0.18	0.18
Sat Flow, veh/h	3343	3438	1538	1723	4274	702	3442	3539	1583	1774	3539	1573
Grp Volume(v), veh/h	247	566	78	22	719	369	242	180	0	145	227	268
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1683	1721	1770	1583	1774	1770	1573
Q Serve(g_s), s	9.3	16.4	1.7	1.6	26.0	26.2	6.9	4.3	0.0	10.4	7.3	22.0
Cycle Q Clear(g_c), s	9.3	16.4	1.7	1.6	26.0	26.2	6.9	4.3	0.0	10.4	7.3	22.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1242	556	57	934	477	1039	1342	600	183	626	278
V/C Ratio(X)	0.69	0.46	0.14	0.39	0.77	0.77	0.23	0.13	0.00	0.79	0.36	0.96
Avail Cap(c_a), veh/h	411	1428	639	199	1343	686	1039	1342	600	239	626	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	31.7	4.2	61.6	42.7	43.0	34.1	26.4	0.0	56.9	47.1	53.1
Incr Delay (d2), s/veh	3.8	0.2	0.1	4.3	1.7	3.4	0.1	0.2	0.0	12.6	1.6	45.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	7.8	0.7	0.8	12.0	12.7	3.3	2.2	0.0	5.7	3.7	13.0
LnGrp Delay(d),s/veh	59.8	32.0	4.3	65.8	44.4	46.5	34.2	26.6	0.0	69.5	48.7	98.4
LnGrp LOS	E	C	A	E	D	D	C	C		E	D	F
Approach Vol, veh/h		891			1110			422			640	
Approach Delay, s/veh		37.3			45.5			31.0			74.2	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	53.3	8.3	51.0	43.7	27.0	18.4	40.9
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	16.5	26.0	14.0	52.5	21.0	* 22	15.0	* 52
Max Q Clear Time (g_c+I1), s	12.4	6.3	3.6	18.4	8.9	24.0	11.3	28.2
Green Ext Time (p_c), s	0.1	1.8	0.0	5.0	1.5	0.0	1.7	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	8	8	257	14	18	12	412	262	14	323	10
Future Volume (veh/h)	14	8	8	257	14	18	12	412	262	14	323	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	9	1	300	0	0	13	463	0	16	363	9
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	28	68	586	0	262	55	1486	665	59	2153	53
Arrive On Green	0.04	0.04	0.04	0.17	0.00	0.00	0.03	0.42	0.00	0.03	0.42	0.39
Sat Flow, veh/h	1155	650	1576	3548	0	1583	1774	3539	1583	1774	5104	126
Grp Volume(v), veh/h	25	0	1	300	0	0	13	463	0	16	241	131
Grp Sat Flow(s),veh/h/ln	1805	0	1576	1774	0	1583	1774	1770	1583	1774	1695	1840
Q Serve(g_s), s	0.6	0.0	0.0	3.6	0.0	0.0	0.3	4.1	0.0	0.4	2.1	2.1
Cycle Q Clear(g_c), s	0.6	0.0	0.0	3.6	0.0	0.0	0.3	4.1	0.0	0.4	2.1	2.1
Prop In Lane	0.64		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	78	0	68	586	0	262	55	1486	665	59	1430	776
V/C Ratio(X)	0.32	0.00	0.01	0.51	0.00	0.00	0.24	0.31	0.00	0.27	0.17	0.17
Avail Cap(c_a), veh/h	1184	0	1034	3079	0	1374	1164	3483	1558	1164	3337	1811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	21.6	18.0	0.0	0.0	22.3	9.2	0.0	22.3	8.5	8.5
Incr Delay (d2), s/veh	2.3	0.0	0.1	0.7	0.0	0.0	2.2	0.3	0.0	2.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.8	0.0	0.0	0.2	2.0	0.0	0.2	1.0	1.1
LnGrp Delay(d),s/veh	24.3	0.0	21.7	18.7	0.0	0.0	24.5	9.4	0.0	24.7	8.6	8.8
LnGrp LOS	C		C	B			C	A		C	A	A
Approach Vol, veh/h		26			300			476			388	
Approach Delay, s/veh		24.2			18.7			9.8			9.3	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	23.8		11.8	5.5	23.9		6.0
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.4	6.1		5.6	2.3	4.1		2.6
Green Ext Time (p_c), s	0.0	12.1		1.0	0.0	12.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	528	39	107	690	311	55	182	78	378	200	304
Future Volume (veh/h)	110	528	39	107	690	311	55	182	78	378	200	304
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	593	40	120	775	114	62	204	23	425	225	104
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	505	1310	88	237	1585	492	460	898	400	539	980	436
Arrive On Green	0.15	0.40	0.38	0.07	0.32	0.32	0.13	0.25	0.25	0.16	0.28	0.28
Sat Flow, veh/h	3343	3269	220	3343	4940	1535	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	124	311	322	120	775	114	62	204	23	425	225	104
Grp Sat Flow(s),veh/h/ln	1672	1719	1770	1672	1647	1535	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.3	17.2	17.3	4.5	16.4	4.4	2.1	5.9	1.4	15.4	6.4	6.6
Cycle Q Clear(g_c), s	4.3	17.2	17.3	4.5	16.4	4.4	2.1	5.9	1.4	15.4	6.4	6.6
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	689	709	237	1585	492	460	898	400	539	980	436
V/C Ratio(X)	0.25	0.45	0.45	0.51	0.49	0.23	0.13	0.23	0.06	0.79	0.23	0.24
Avail Cap(c_a), veh/h	505	689	709	327	1585	492	529	898	400	609	980	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	28.5	28.7	58.2	35.6	12.6	49.7	38.4	36.7	52.7	36.3	36.4
Incr Delay (d2), s/veh	0.1	2.1	2.1	0.6	1.1	1.1	0.0	0.6	0.3	5.2	0.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	8.5	8.9	2.1	7.6	2.0	1.0	3.0	0.7	7.8	3.2	3.0
LnGrp Delay(d),s/veh	48.7	30.6	30.7	58.8	36.7	13.7	49.7	39.0	37.0	58.0	36.8	37.7
LnGrp LOS	D	C	C	E	D	B	D	D	D	E	D	D
Approach Vol, veh/h		757			1009			289			754	
Approach Delay, s/veh		33.7			36.7			41.1			48.9	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	45.0	24.4	37.0	12.5	56.1	21.4	40.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	14.2	38.9	20.2	30.9	9.9	43.2	17.9	33.2
Max Q Clear Time (g_c+I1), s	6.3	18.4	17.4	7.9	6.5	19.3	4.1	8.6
Green Ext Time (p_c), s	0.9	1.8	0.1	0.4	0.0	1.1	0.4	0.5

Intersection Summary		
HCM 2010 Ctrl Delay		39.6
HCM 2010 LOS		D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	198	0.0	0.232	6.6	LOS A	1.0	26.0	0.60	0.57	29.1
8	T1	122	0.0	0.233	5.7	LOS A	1.1	27.5	0.59	0.53	25.0
18	R2	120	0.0	0.233	5.7	LOS A	1.1	27.5	0.59	0.53	36.5
Approach		440	0.0	0.233	6.1	LOS A	1.1	27.5	0.59	0.55	30.3
East: WB Boronda Rd											
1	L2	164	1.2	0.434	7.8	LOS A	2.4	60.0	0.57	0.49	29.4
6	T1	953	1.2	0.434	7.0	LOS A	2.5	63.4	0.55	0.45	32.9
16	R2	47	6.3	0.032	2.7	LOS A	0.2	4.0	0.35	0.18	33.9
Approach		1164	1.4	0.434	6.9	LOS A	2.5	63.4	0.54	0.45	32.5
North: SB McKinnon St											
7	L2	35	0.0	0.048	5.4	LOS A	0.2	5.3	0.67	0.59	33.3
4	T1	9	1.8	0.048	3.8	LOS A	0.2	6.0	0.67	0.54	31.7
14	R2	97	1.1	0.048	3.6	LOS A	0.2	6.0	0.64	0.52	32.8
Approach		142	0.9	0.048	4.1	LOS A	0.2	6.0	0.65	0.54	32.9
West: EB Boronda Rd											
5	L2	161	0.0	0.287	5.3	LOS A	1.4	34.7	0.33	0.21	32.4
2	T1	675	0.0	0.287	4.8	LOS A	1.4	35.9	0.32	0.20	35.1
12	R2	204	0.0	0.127	3.2	LOS A	0.6	15.1	0.27	0.14	30.4
Approach		1041	0.0	0.287	4.6	LOS A	1.4	35.9	0.31	0.19	34.2
All Vehicles		2785	0.6	0.434	5.8	LOS A	2.5	63.4	0.47	0.37	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing + CASP AM]

Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	181	0.0	0.142	4.0	LOS A	0.7	16.9	0.57	0.48	35.2
8	T1	1	0.0	0.001	3.9	LOS A	0.0	0.1	0.55	0.31	36.4
18	R2	211	0.0	0.166	4.2	LOS A	0.8	19.9	0.58	0.50	36.2
Approach		393	0.0	0.166	4.1	LOS A	0.8	19.9	0.57	0.49	35.7
East: WB Baronda Rd											
1	L2	210	0.0	0.570	9.7	LOS A	4.4	110.2	0.52	0.35	34.4
6	T1	1227	0.9	0.570	9.4	LOS A	4.5	112.3	0.51	0.34	35.6
16	R2	1	0.0	0.570	9.2	LOS A	4.5	112.3	0.51	0.33	33.9
Approach		1438	0.8	0.570	9.4	LOS A	4.5	112.3	0.52	0.34	35.4
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.002	6.0	LOS A	0.0	0.2	0.72	0.48	34.0
4	T1	1	0.0	0.001	3.7	LOS A	0.0	0.2	0.75	0.43	35.8
14	R2	1	0.0	0.001	3.3	LOS A	0.0	0.1	0.68	0.38	36.4
Approach		4	0.0	0.002	4.4	LOS A	0.0	0.2	0.71	0.43	35.3
West: EB Boronda Rd											
5u	U	1	0.0	0.407	7.1	LOS A	2.5	64.1	0.45	0.31	37.2
5	L2	1	0.0	0.407	7.1	LOS A	2.5	64.1	0.45	0.31	35.8
2	T1	899	2.0	0.407	7.0	LOS A	2.6	65.1	0.45	0.30	36.5
12	R2	101	0.0	0.407	6.7	LOS A	2.6	65.1	0.44	0.29	35.4
Approach		1002	1.8	0.407	7.0	LOS A	2.6	65.1	0.45	0.30	36.4
All Vehicles		2837	1.0	0.570	7.8	LOS A	4.5	112.3	0.50	0.35	35.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	109	0.0	0.136	5.8	LOS A	0.4	10.2	0.52	0.52	35.1
8	T1	392	1.6	0.209	5.9	LOS A	0.7	18.0	0.52	0.51	35.0
18	R2	340	0.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	39.4
Approach		841	0.7	0.209	3.5	LOS A	0.7	18.0	0.31	0.30	36.7
East: WB Boronda Rd											
1	L2	301	0.0	0.395	7.6	LOS A	1.8	44.3	0.52	0.51	32.8
6	T1	1019	0.6	0.395	7.2	LOS A	1.8	44.5	0.52	0.49	38.8
16	R2	280	1.6	0.224	4.8	LOS A	0.9	23.7	0.44	0.36	37.2
Approach		1600	0.7	0.395	6.9	LOS A	1.8	44.5	0.51	0.47	37.7
North: SB Natividad Rd											
7	L2	229	0.0	0.298	8.4	LOS A	1.2	30.1	0.65	0.66	34.2
4	T1	508	0.0	0.298	7.4	LOS A	1.3	33.0	0.66	0.66	34.2
14	R2	147	0.0	0.136	4.5	LOS A	0.5	13.3	0.55	0.51	38.8
Approach		885	0.0	0.298	7.2	LOS A	1.3	33.0	0.64	0.64	35.2
West: EB Boronda Rd											
5u	U	1	0.0	0.322	7.8	LOS A	1.3	33.5	0.61	0.61	37.3
5	L2	180	0.0	0.322	7.8	LOS A	1.3	33.5	0.61	0.61	36.7
2	T1	720	0.3	0.322	7.2	LOS A	1.4	35.7	0.60	0.61	38.8
12	R2	104	0.0	0.090	3.9	LOS A	0.4	8.8	0.49	0.40	37.8
Approach		1005	0.2	0.322	7.0	LOS A	1.4	35.7	0.59	0.59	38.3
All Vehicles		4331	0.4	0.395	6.3	LOS A	1.8	44.5	0.51	0.50	37.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	374	0.4	0.166	4.6	LOS A	0.8	21.0	0.58	0.49	32.6
8	T1	156	0.0	0.190	5.6	LOS A	0.9	22.2	0.59	0.54	34.3
18	R2	26	0.0	0.190	5.6	LOS A	0.9	22.2	0.59	0.54	33.8
Approach		556	0.3	0.190	5.0	LOS A	0.9	22.2	0.58	0.51	33.1
East: WB Boronda Rd											
1	L2	19	0.0	0.400	7.7	LOS A	1.8	45.1	0.52	0.51	33.9
6	T1	897	0.3	0.400	7.2	LOS A	1.8	45.1	0.51	0.48	35.2
16	R2	19	0.0	0.014	2.7	LOS A	0.1	1.3	0.28	0.13	36.0
Approach		935	0.3	0.400	7.1	LOS A	1.8	45.1	0.50	0.48	35.2
North: SB Independence Blvd (Future)											
7	L2	26	0.0	0.251	6.3	LOS A	1.1	27.9	0.64	0.64	35.1
4	T1	211	0.0	0.251	6.3	LOS A	1.1	27.9	0.64	0.64	33.4
14	R2	276	0.0	0.292	6.8	LOS A	1.3	33.0	0.65	0.65	33.8
Approach		513	0.0	0.292	6.6	LOS A	1.3	33.0	0.65	0.65	33.8
West: EB Boronda Rd											
5u	U	1	0.0	0.321	6.1	LOS A	2.0	50.0	0.47	0.32	35.8
5	L2	87	0.0	0.321	6.1	LOS A	2.0	50.0	0.47	0.32	34.7
2	T1	735	0.8	0.321	5.7	LOS A	2.1	52.4	0.46	0.30	35.6
12	R2	460	0.3	0.275	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1282	0.6	0.321	3.7	LOS A	2.1	52.4	0.29	0.20	35.9
All Vehicles		3287	0.3	0.400	5.3	LOS A	2.1	52.4	0.46	0.40	34.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	608	145	30	861	120	177	17	42	142	23	103
Future Volume (veh/h)	152	608	145	30	861	120	177	17	42	142	23	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	165	683	141	34	967	47	199	18	38	154	25	88
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	2	2	2	2	2	2	2
Cap, veh/h	189	1242	256	45	1228	565	231	21	44	176	29	100
Arrive On Green	0.11	0.44	0.44	0.03	0.36	0.36	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1774	2839	586	1723	3438	1581	1365	123	261	988	160	565
Grp Volume(v), veh/h	165	413	411	34	967	47	255	0	0	267	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1705	1723	1719	1581	1749	0	0	1714	0	0
Q Serve(g_s), s	7.7	15.0	15.1	1.7	21.2	1.7	12.0	0.0	0.0	12.8	0.0	0.0
Cycle Q Clear(g_c), s	7.7	15.0	15.1	1.7	21.2	1.7	12.0	0.0	0.0	12.8	0.0	0.0
Prop In Lane	1.00		0.34	1.00		1.00	0.78		0.15	0.58		0.33
Lane Grp Cap(c), veh/h	189	752	746	45	1228	565	296	0	0	304	0	0
V/C Ratio(X)	0.87	0.55	0.55	0.76	0.79	0.08	0.86	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	189	774	768	82	1344	618	332	0	0	325	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.1	17.6	17.6	40.8	24.3	18.0	34.1	0.0	0.0	33.8	0.0	0.0
Incr Delay (d2), s/veh	33.0	0.8	0.8	22.5	3.0	0.1	18.7	0.0	0.0	21.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	7.3	7.2	1.1	10.6	0.7	7.3	0.0	0.0	7.9	0.0	0.0
LnGrp Delay(d),s/veh	70.1	18.4	18.4	63.3	27.2	18.0	52.8	0.0	0.0	55.6	0.0	0.0
LnGrp LOS	E	B	B	E	C	B	D			E		
Approach Vol, veh/h		989			1048			255			267	
Approach Delay, s/veh		27.0			28.0			52.8			55.6	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	40.9		19.0	13.0	34.1		18.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	9.0	33.0		16.0
Max Q Clear Time (g_c+I1), s	3.7	17.1		14.8	9.7	23.2		14.0
Green Ext Time (p_c), s	0.0	11.8		0.2	0.0	6.9		0.3

Intersection Summary		
HCM 2010 Ctrl Delay		33.0
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑↑↑↱		↰↰	↑↑↑	↱
Traffic Volume (veh/h)	106	326	114	248	306	205	36	389	259	157	542	95
Future Volume (veh/h)	106	326	114	248	306	205	36	389	259	157	542	95
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	122	375	20	285	352	58	41	447	228	180	623	50
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	790	330	334	584	488	353	1291	602	285	1347	405
Arrive On Green	0.10	0.22	0.22	0.19	0.31	0.31	0.20	0.38	0.36	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1477	1774	1863	1555	1774	3390	1582	3442	5085	1530
Grp Volume(v), veh/h	122	375	20	285	352	58	41	447	228	180	623	50
Grp Sat Flow(s),veh/h/ln	1774	1770	1477	1774	1863	1555	1774	1695	1582	1721	1695	1530
Q Serve(g_s), s	8.5	11.8	0.8	19.9	20.5	3.4	2.4	12.0	13.6	6.5	13.1	2.3
Cycle Q Clear(g_c), s	8.5	11.8	0.8	19.9	20.5	3.4	2.4	12.0	13.6	6.5	13.1	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	790	330	334	584	488	353	1291	602	285	1347	405
V/C Ratio(X)	0.70	0.47	0.06	0.85	0.60	0.12	0.12	0.35	0.38	0.63	0.46	0.12
Avail Cap(c_a), veh/h	255	998	417	457	738	616	353	1291	602	371	1347	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	43.2	15.1	50.3	37.2	31.3	42.1	28.3	29.5	56.8	39.4	19.4
Incr Delay (d2), s/veh	1.9	0.2	0.0	8.6	0.4	0.0	0.1	0.7	1.8	0.9	1.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.8	0.3	10.5	10.6	1.5	1.2	5.8	6.2	3.1	6.3	1.1
LnGrp Delay(d),s/veh	57.9	43.4	15.1	58.8	37.5	31.4	42.1	29.0	31.3	57.7	40.6	20.1
LnGrp LOS	E	D	B	E	D	C	D	C	C	E	D	C
Approach Vol, veh/h		517			695			716			853	
Approach Delay, s/veh		45.7			45.8			30.5			43.0	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	52.7	28.1	32.6	29.4	37.9	16.5	44.1
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6
Max Q Clear Time (g_c+I1), s	8.5	15.6	21.9	13.8	4.4	15.1	10.5	22.5
Green Ext Time (p_c), s	0.0	1.4	0.1	1.6	0.4	1.6	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	0	323	0	0	0	308	619	0	6	1049	222
Future Volume (veh/h)	235	0	323	0	0	0	308	619	0	6	1049	222
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	290	0	63				380	764	0	7	1295	248
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.81	0.81	0.81				0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	469	0	216				474	3389	0	19	1751	335
Arrive On Green	0.14	0.00	0.14				0.27	0.67	0.00	0.01	0.41	0.39
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4269	817
Grp Volume(v), veh/h	290	0	63				380	764	0	7	1028	515
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1696
Q Serve(g_s), s	5.1	0.0	2.3				12.9	3.8	0.0	0.3	16.5	16.7
Cycle Q Clear(g_c), s	5.1	0.0	2.3				12.9	3.8	0.0	0.3	16.5	16.7
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.48
Lane Grp Cap(c), veh/h	469	0	216				474	3389	0	19	1391	696
V/C Ratio(X)	0.62	0.00	0.29				0.80	0.23	0.00	0.36	0.74	0.74
Avail Cap(c_a), veh/h	1630	0	750				826	3389	0	551	1658	829
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	25.0				22.0	4.2	0.0	31.6	16.1	16.4
Incr Delay (d2), s/veh	1.3	0.0	0.7				6.6	0.0	0.0	4.1	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	2.1				7.1	1.8	0.0	0.1	8.0	8.3
LnGrp Delay(d),s/veh	27.6	0.0	25.8				28.6	4.3	0.0	35.7	17.5	19.3
LnGrp LOS	C		C				C	A		D	B	B
Approach Vol, veh/h		353						1144			1550	
Approach Delay, s/veh		27.2						12.3			18.2	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	4.7	46.9		12.8	21.2	30.4		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.3	5.8		7.1	14.9	18.7		
Green Ext Time (p_c), s	0.0	16.7		1.2	2.4	6.3		

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	589	87	6	1131	52	156	73	12	58	91	565
Future Volume (veh/h)	265	589	87	6	1131	52	156	73	12	58	91	565
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	282	627	87	6	1203	53	166	78	7	62	97	295
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	1705	236	65	1317	58	323	496	45	407	550	456
Arrive On Green	0.20	0.55	0.52	0.04	0.38	0.35	0.30	0.30	0.28	0.30	0.30	0.30
Sat Flow, veh/h	1774	3123	433	1774	3452	152	975	1681	151	1281	1863	1545
Grp Volume(v), veh/h	282	355	359	6	616	640	166	0	85	62	97	295
Grp Sat Flow(s),veh/h/ln	1774	1770	1786	1774	1770	1835	975	0	1831	1281	1863	1545
Q Serve(g_s), s	14.9	11.2	11.4	0.3	32.5	32.6	15.0	0.0	3.4	3.7	3.8	16.4
Cycle Q Clear(g_c), s	14.9	11.2	11.4	0.3	32.5	32.6	18.8	0.0	3.4	7.1	3.8	16.4
Prop In Lane	1.00		0.24	1.00		0.08	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	357	966	975	65	675	700	323	0	541	407	550	456
V/C Ratio(X)	0.79	0.37	0.37	0.09	0.91	0.91	0.51	0.00	0.16	0.15	0.18	0.65
Avail Cap(c_a), veh/h	409	966	975	409	678	703	418	0	718	532	731	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	12.7	12.9	45.8	28.9	29.0	32.8	0.0	25.7	28.2	25.8	30.2
Incr Delay (d2), s/veh	8.9	0.2	0.2	0.6	16.8	16.5	1.3	0.0	0.1	0.2	0.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	5.5	5.6	0.2	18.9	19.6	4.2	0.0	1.7	1.3	2.0	7.2
LnGrp Delay(d),s/veh	46.2	12.9	13.1	46.4	45.7	45.5	34.0	0.0	25.8	28.4	25.9	31.7
LnGrp LOS	D	B	B	D	D	D	C		C	C	C	C
Approach Vol, veh/h		996			1262			251			454	
Approach Delay, s/veh		22.4			45.6			31.2			30.0	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	57.7		33.1	23.8	41.5		33.1
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	2.3	13.4		18.4	16.9	34.6		20.8
Green Ext Time (p_c), s	0.0	12.7		3.0	0.3	0.2		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	139	101	324	187	99	63	501	221	122	441	112
Future Volume (veh/h)	155	139	101	324	187	99	63	501	221	122	441	112
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	172	154	16	360	208	54	70	557	209	136	490	42
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	259	402	41	460	725	184	126	787	294	169	1188	530
Arrive On Green	0.15	0.12	0.15	0.26	0.26	0.24	0.07	0.32	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1774	3241	333	1774	2797	710	1723	2450	917	1723	3438	1535
Grp Volume(v), veh/h	172	83	87	360	130	132	70	390	376	136	490	42
Grp Sat Flow(s),veh/h/ln	1774	1770	1804	1774	1770	1737	1723	1719	1648	1723	1719	1535
Q Serve(g_s), s	8.3	3.9	4.0	17.2	5.3	5.6	3.6	18.2	18.4	7.0	9.9	1.7
Cycle Q Clear(g_c), s	8.3	3.9	4.0	17.2	5.3	5.6	3.6	18.2	18.4	7.0	9.9	1.7
Prop In Lane	1.00		0.18	1.00		0.41	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	259	220	224	460	459	450	126	552	529	169	1188	530
V/C Ratio(X)	0.66	0.38	0.39	0.78	0.28	0.29	0.55	0.71	0.71	0.81	0.41	0.08
Avail Cap(c_a), veh/h	448	408	416	721	719	706	303	718	688	303	1435	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	36.6	36.5	31.3	27.0	27.4	40.7	27.1	27.7	40.2	22.7	20.0
Incr Delay (d2), s/veh	2.9	1.1	1.1	3.0	0.3	0.4	3.7	2.2	2.4	8.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	2.0	2.1	8.8	2.6	2.7	1.8	8.9	8.7	3.8	4.7	0.7
LnGrp Delay(d),s/veh	39.6	37.7	37.6	34.3	27.3	27.7	44.5	29.4	30.1	49.0	23.0	20.1
LnGrp LOS	D	D	D	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		342			622			836			668	
Approach Delay, s/veh		38.7			31.4			30.9			28.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	35.4		27.6	12.9	33.2		17.3
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	5.6	11.9		19.2	9.0	20.4		10.3
Green Ext Time (p_c), s	0.1	8.3		2.4	0.2	6.9		1.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.4
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	844	255	0	1155	260	0	0	0	224	0	360
Future Volume (veh/h)	0	844	255	0	1155	260	0	0	0	224	0	360
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	888	0	0	1216	0				236	0	359
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1894	847	0	1894	0				1001	0	461
Arrive On Green	0.00	0.55	0.00	0.00	0.55	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	888	0	0	1216	0				236	0	359
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	7.9	0.0	0.0	12.4	0.0				2.6	0.0	10.5
Cycle Q Clear(g_c), s	0.0	7.9	0.0	0.0	12.4	0.0				2.6	0.0	10.5
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1894	847	0	1894	0				1001	0	461
V/C Ratio(X)	0.00	0.47	0.00	0.00	0.64	0.00				0.24	0.00	0.78
Avail Cap(c_a), veh/h	0	2793	1250	0	2793	0				2762	0	1271
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	0.0	0.0	7.9	0.0				13.7	0.0	16.4
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0				0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	5.8	0.0				1.3	0.0	4.9
LnGrp Delay(d),s/veh	0.0	6.9	0.0	0.0	8.0	0.0				13.7	0.0	18.6
LnGrp LOS		A			A					B		B
Approach Vol, veh/h		888			1216						595	
Approach Delay, s/veh		6.9			8.0						16.7	
Approach LOS		A			A						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		31.9		18.7		31.9						
Change Period (Y+Rc), s		5.1		4.6		5.1						
Max Green Setting (Gmax), s		40.0		40.0		40.0						
Max Q Clear Time (g_c+I1), s		9.9		12.5		14.4						
Green Ext Time (p_c), s		13.3		1.6		12.3						
Intersection Summary												
HCM 2010 Ctrl Delay			9.6									
HCM 2010 LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	811	280	0	1156	259	244	0	116	0	0	0
Future Volume (vph)	0	811	280	0	1156	259	244	0	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3329		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3329		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	882	304	0	1257	282	265	0	126	0	0	0
RTOR Reduction (vph)	0	0	101	0	21	0	0	0	100	0	0	0
Lane Group Flow (vph)	0	882	203	0	1518	0	132	133	26	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		45.0	45.0		45.0		13.5	13.5	13.5			
Effective Green, g (s)		45.6	45.0		45.6		13.7	13.7	13.7			
Actuated g/C Ratio		0.68	0.67		0.68		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2329	1028		2255		342	342	322			
v/s Ratio Prot		0.26			c0.46		0.08	c0.08				
v/s Ratio Perm			0.13						0.02			
v/c Ratio		0.38	0.20		0.67		0.39	0.39	0.08			
Uniform Delay, d1		4.7	4.3		6.4		23.2	23.2	21.7			
Progression Factor		1.00	1.00		0.52		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		0.7		0.3	0.3	0.0			
Delay (s)		4.8	4.4		4.0		23.4	23.4	21.7			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		4.7			4.0			22.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	13.4
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	431	70	133	515	74	67	452	113	144	725	109
Future Volume (veh/h)	165	431	70	133	515	74	67	452	113	144	725	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	183	479	66	148	572	72	74	502	53	160	806	108
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	236	760	104	188	684	86	181	1550	690	265	2096	279
Arrive On Green	0.14	0.25	0.23	0.11	0.22	0.21	0.05	0.44	0.44	0.08	0.46	0.45
Sat Flow, veh/h	1723	3035	416	1723	3068	385	3442	3539	1575	3442	4532	603
Grp Volume(v), veh/h	183	270	275	148	320	324	74	502	53	160	602	312
Grp Sat Flow(s),veh/h/ln	1723	1719	1732	1723	1719	1734	1721	1770	1575	1721	1695	1745
Q Serve(g_s), s	13.1	17.9	18.1	10.7	22.7	22.9	2.7	11.9	2.5	5.8	14.8	15.1
Cycle Q Clear(g_c), s	13.1	17.9	18.1	10.7	22.7	22.9	2.7	11.9	2.5	5.8	14.8	15.1
Prop In Lane	1.00		0.24	1.00		0.22	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	236	431	434	188	383	387	181	1550	690	265	1568	807
V/C Ratio(X)	0.78	0.63	0.63	0.79	0.83	0.84	0.41	0.32	0.08	0.60	0.38	0.39
Avail Cap(c_a), veh/h	256	604	609	188	537	542	296	1550	690	323	1568	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	42.7	43.0	55.5	47.5	47.8	58.7	23.5	20.9	57.2	22.5	22.8
Incr Delay (d2), s/veh	11.3	0.6	0.6	17.8	5.6	5.8	0.5	0.6	0.2	0.8	0.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	8.6	8.7	6.0	11.4	11.6	1.3	5.9	1.1	2.8	7.1	7.6
LnGrp Delay(d),s/veh	64.6	43.2	43.5	73.4	53.1	53.6	59.2	24.1	21.1	58.0	23.2	24.2
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		728			792			629			1074	
Approach Delay, s/veh		48.7			57.1			28.0			28.7	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	60.1	18.0	36.1	10.7	63.2	21.5	32.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	38.9	11.9	42.9	8.9	39.9	16.9	37.9
Max Q Clear Time (g_c+I1), s	7.8	13.9	12.7	20.1	4.7	17.1	15.1	24.9
Green Ext Time (p_c), s	0.0	3.7	0.0	1.1	0.0	3.7	0.3	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	40.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	525	87	703	655	304	45	810	538	335	980	61
Future Volume (veh/h)	132	525	87	703	655	304	45	810	538	335	980	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	157	625	0	837	780	0	54	964	608	399	1167	71
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	197	756	338	691	1085	486	94	1104	1447	494	1365	83
Arrive On Green	0.11	0.22	0.00	0.21	0.32	0.00	0.05	0.31	0.31	0.14	0.40	0.38
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2760	3442	3390	206
Grp Volume(v), veh/h	157	625	0	837	780	0	54	964	608	399	609	629
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1380	1721	1770	1826
Q Serve(g_s), s	12.4	24.3	0.0	29.0	28.2	0.0	4.2	36.1	18.9	15.7	43.9	44.1
Cycle Q Clear(g_c), s	12.4	24.3	0.0	29.0	28.2	0.0	4.2	36.1	18.9	15.7	43.9	44.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	197	756	338	691	1085	486	94	1104	1447	494	712	735
V/C Ratio(X)	0.80	0.83	0.00	1.21	0.72	0.00	0.57	0.87	0.42	0.81	0.85	0.86
Avail Cap(c_a), veh/h	326	956	428	691	1085	486	278	1199	1521	614	712	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	52.2	0.0	55.6	42.5	0.0	64.8	45.6	20.5	58.2	38.1	38.3
Incr Delay (d2), s/veh	2.8	4.5	0.0	107.9	2.2	0.0	2.0	6.7	0.1	5.1	9.8	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	12.0	0.0	23.7	13.7	0.0	2.1	18.7	7.2	7.8	23.4	24.2
LnGrp Delay(d),s/veh	63.3	56.7	0.0	163.5	44.7	0.0	66.9	52.3	20.7	63.3	47.9	47.9
LnGrp LOS	E	E		F	D		E	D	C	E	D	D
Approach Vol, veh/h		782			1617			1626			1637	
Approach Delay, s/veh		58.0			106.2			41.0			51.7	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	47.8	33.0	35.3	11.4	60.5	20.1	48.3
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	23.0	45.0	27.0	* 37	20.0	46.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	17.7	38.1	31.0	26.3	6.2	46.1	14.4	30.2
Green Ext Time (p_c), s	0.4	3.1	0.0	2.5	0.0	0.0	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	821	525	590	255	401	1319
Future Volume (veh/h)	821	525	590	255	401	1319
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	912	583	656	0	446	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1144	2465	1117	500	630	290
Arrive On Green	0.34	0.72	0.32	0.00	0.18	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	912	583	656	0	446	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	19.8	4.6	12.8	0.0	9.8	0.0
Cycle Q Clear(g_c), s	19.8	4.6	12.8	0.0	9.8	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1144	2465	1117	500	630	290
V/C Ratio(X)	0.80	0.24	0.59	0.00	0.71	0.00
Avail Cap(c_a), veh/h	1959	3987	1801	806	1352	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	23.8	3.9	22.6	0.0	30.7	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.5	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	2.2	6.1	0.0	4.8	0.0
LnGrp Delay(d),s/veh	25.2	3.9	23.1	0.0	32.2	0.0
LnGrp LOS	C	A	C		C	
Approach Vol, veh/h		1495	656		446	
Approach Delay, s/veh		16.9	23.1		32.2	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		61.5		18.7	31.5	30.1		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		6.6		11.8	21.8	14.8		
Green Ext Time (p_c), s		11.4		1.4	3.7	9.3		

Intersection Summary			
HCM 2010 Ctrl Delay			21.1
HCM 2010 LOS			C

Intersection	
Int Delay, s/veh	340.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	632	252	69	432	306	11
Future Vol, veh/h	632	252	69	432	306	11
Conflicting Peds, #/hr	0	15	15	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	821	327	90	561	397	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1163	0	1739	999
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	740	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	590	-	~ 96	295
Stage 1	-	-	-	-	~ 356	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	590	-	~ 80	291
Mov Cap-2 Maneuver	-	-	-	-	~ 80	-
Stage 1	-	-	-	-	~ 352	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	$ 1825.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	80	291	-	-	590	-
HCM Lane V/C Ratio	4.968	0.049	-	-	0.152	-
HCM Control Delay (s)	$ 1890.1	18	-	-	12.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	43.1	0.2	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	164	0	39	0	0	0	39	40	0	1	33	182
Future Vol, veh/h	164	0	39	0	0	0	39	40	0	1	33	182
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	0	46	0	0	0	46	48	0	1	39	217

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	290	290	148	313	398	48	256	0	0	48	0	0
Stage 1	150	150	-	140	140	-	-	-	-	-	-	-
Stage 2	140	140	-	173	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	662	620	899	640	540	1021	1309	-	-	1559	-	-
Stage 1	853	773	-	863	781	-	-	-	-	-	-	-
Stage 2	863	781	-	829	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	643	597	899	590	520	1021	1309	-	-	1559	-	-
Mov Cap-2 Maneuver	643	597	-	590	520	-	-	-	-	-	-	-
Stage 1	822	772	-	832	753	-	-	-	-	-	-	-
Stage 2	832	753	-	785	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	0	3.9	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1309	-	-	680	-	1559	-	-
HCM Lane V/C Ratio	0.035	-	-	0.355	-	0.001	-	-
HCM Control Delay (s)	7.9	0	-	13.2	0	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰↰	↑	↱	↰	↑↑	↱	↰	↑↑↱	
Traffic Volume (veh/h)	12	33	144	754	59	37	200	563	483	57	891	11
Future Volume (veh/h)	12	33	144	754	59	37	200	563	483	57	891	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	15	40	13	920	72	13	244	687	268	70	1087	12
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	139	114	995	538	456	436	1577	686	117	1377	15
Arrive On Green	0.07	0.07	0.07	0.29	0.29	0.29	0.25	0.45	0.45	0.07	0.27	0.25
Sat Flow, veh/h	1774	1863	1526	3442	1863	1578	1774	3539	1540	1774	5183	57
Grp Volume(v), veh/h	15	40	13	920	72	13	244	687	268	70	711	388
Grp Sat Flow(s),veh/h/ln	1774	1863	1526	1721	1863	1578	1774	1770	1540	1774	1695	1850
Q Serve(g_s), s	1.0	2.6	1.0	33.2	3.7	0.8	15.4	17.1	15.0	4.9	24.9	25.0
Cycle Q Clear(g_c), s	1.0	2.6	1.0	33.2	3.7	0.8	15.4	17.1	15.0	4.9	24.9	25.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	132	139	114	995	538	456	436	1577	686	117	901	491
V/C Ratio(X)	0.11	0.29	0.11	0.92	0.13	0.03	0.56	0.44	0.39	0.60	0.79	0.79
Avail Cap(c_a), veh/h	402	422	346	995	538	456	436	1577	686	152	901	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	56.0	55.3	44.1	33.6	32.6	42.2	24.4	23.8	58.1	43.7	43.7
Incr Delay (d2), s/veh	0.1	0.4	0.2	13.7	0.0	0.0	1.0	0.9	1.7	1.8	7.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	0.4	17.6	1.9	0.3	7.6	8.5	6.6	2.5	12.5	14.4
LnGrp Delay(d),s/veh	55.4	56.4	55.5	57.8	33.7	32.6	43.2	25.3	25.5	59.9	50.7	55.9
LnGrp LOS	E	E	E	E	C	C	D	C	C	E	D	E
Approach Vol, veh/h		68			1005			1199			1169	
Approach Delay, s/veh		56.0			55.7			29.0			52.9	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	61.0		13.5	35.5	38.0		41.0
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	9.9	31.9		34.9
Max Q Clear Time (g_c+I1), s	6.9	19.1		4.6	17.4	27.0		35.2
Green Ext Time (p_c), s	0.0	1.7		0.1	0.0	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	5	91	12	14	26	53	937	5	18	1414	359
Future Volume (veh/h)	340	5	91	12	14	26	53	937	5	18	1414	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	391	6	36	14	16	10	61	1077	6	21	1625	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	4	562	47	48	16	121	1751	10	74	1624	0
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.34	0.07	0.49	0.46	0.04	0.46	0.00
Sat Flow, veh/h	654	10	1574	0	134	45	1774	3609	20	1774	3632	0
Grp Volume(v), veh/h	397	0	36	40	0	0	61	528	555	21	1625	0
Grp Sat Flow(s),veh/h/ln	664	0	1574	179	0	0	1774	1770	1859	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.6	0.0	0.0	0.0	3.4	22.7	22.7	1.2	47.5	0.0
Cycle Q Clear(g_c), s	37.0	0.0	1.6	37.0	0.0	0.0	3.4	22.7	22.7	1.2	47.5	0.0
Prop In Lane	0.98		1.00	0.35		0.25	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	562	111	0	0	121	858	902	74	1624	0
V/C Ratio(X)	1.30	0.00	0.06	0.36	0.00	0.00	0.51	0.62	0.62	0.28	1.00	0.00
Avail Cap(c_a), veh/h	306	0	562	111	0	0	557	858	902	557	1624	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.4	0.0	21.9	27.3	0.0	0.0	46.6	19.6	19.6	48.1	28.0	0.0
Incr Delay (d2), s/veh	155.0	0.0	0.0	0.7	0.0	0.0	1.2	1.0	0.9	0.8	22.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	0.0	0.7	0.8	0.0	0.0	1.7	11.2	11.8	0.6	28.1	0.0
LnGrp Delay(d),s/veh	192.5	0.0	21.9	28.1	0.0	0.0	47.8	20.5	20.5	48.9	50.6	0.0
LnGrp LOS	F		C	C			D	C	C	D	F	
Approach Vol, veh/h		433			40			1144			1646	
Approach Delay, s/veh		178.3			28.1			22.0			50.5	
Approach LOS		F			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	54.2		41.0	11.0	51.5		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	3.2	24.7		39.0	5.4	49.5		39.0
Green Ext Time (p_c), s	0.0	12.9		0.0	0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	307	123	16	560	223	106	367	30	177	392	317
Future Volume (veh/h)	170	307	123	16	560	223	106	367	30	177	392	317
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	185	334	109	17	609	67	115	399	11	192	426	194
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	282	1015	324	21	1163	500	150	1026	458	289	550	467
Arrive On Green	0.08	0.40	0.40	0.01	0.33	0.33	0.08	0.29	0.29	0.09	0.30	0.30
Sat Flow, veh/h	3343	2531	808	1774	3539	1521	1774	3539	1582	3343	1810	1535
Grp Volume(v), veh/h	185	225	218	17	609	67	115	399	11	192	426	194
Grp Sat Flow(s),veh/h/ln	1672	1719	1620	1774	1770	1521	1774	1770	1582	1672	1810	1535
Q Serve(g_s), s	4.3	7.3	7.6	0.8	11.3	2.5	5.1	7.3	0.4	4.5	17.3	8.1
Cycle Q Clear(g_c), s	4.3	7.3	7.6	0.8	11.3	2.5	5.1	7.3	0.4	4.5	17.3	8.1
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	690	650	21	1163	500	150	1026	458	289	550	467
V/C Ratio(X)	0.66	0.33	0.34	0.81	0.52	0.13	0.77	0.39	0.02	0.66	0.77	0.42
Avail Cap(c_a), veh/h	1243	690	650	660	1601	688	660	1316	588	1243	695	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	16.6	16.8	39.8	22.0	19.0	36.2	22.9	20.5	35.7	25.5	22.4
Incr Delay (d2), s/veh	2.6	0.3	0.3	50.6	0.4	0.1	7.9	0.2	0.0	2.6	4.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.5	3.4	0.7	5.6	1.1	2.8	3.6	0.2	2.2	9.3	3.5
LnGrp Delay(d),s/veh	38.4	16.9	17.1	90.4	22.3	19.1	44.1	23.2	20.5	38.3	29.8	22.9
LnGrp LOS	D	B	B	F	C	B	D	C	C	D	C	C
Approach Vol, veh/h		628			693			525			812	
Approach Delay, s/veh		23.3			23.7			27.7			30.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	36.4	10.8	28.5	10.8	30.5	11.0	28.4
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	31.0	30.0	30.0	30.0	36.0	30.0	* 30
Max Q Clear Time (g_c+I1), s	2.8	9.6	7.1	19.3	6.3	13.3	6.5	9.3
Green Ext Time (p_c), s	0.0	7.2	0.3	4.1	0.6	6.8	0.6	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Notes

Intersection						
Int Delay, s/veh	12.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	306	165	180	44	46	481
Future Vol, veh/h	306	165	180	44	46	481
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	369	199	217	53	55	580

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	270	0	-	0	1179	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	936	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1293	-	-	-	208	788
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	377	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1293	-	-	-	149	788
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	269	-

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	23
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1293	-	-	-	149	788
HCM Lane V/C Ratio	0.285	-	-	-	0.372	0.735
HCM Control Delay (s)	8.9	-	-	-	42.8	21.1
HCM Lane LOS	A	-	-	-	E	C
HCM 95th %tile Q(veh)	1.2	-	-	-	1.6	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	176	18	98	292	11	37	374	106	8	487	214
Future Volume (veh/h)	116	176	18	98	292	11	37	374	106	8	487	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	196	4	109	324	10	41	416	52	9	541	116
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	208	415	353	186	738	23	141	773	642	76	704	591
Arrive On Green	0.12	0.23	0.23	0.11	0.22	0.19	0.08	0.41	0.41	0.04	0.38	0.38
Sat Flow, veh/h	1723	1810	1538	1723	3400	105	1774	1863	1549	1774	1863	1563
Grp Volume(v), veh/h	129	196	4	109	163	171	41	416	52	9	541	116
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1786	1774	1863	1549	1774	1863	1563
Q Serve(g_s), s	5.6	7.3	0.2	4.7	6.4	6.5	1.7	13.1	1.6	0.4	19.9	3.9
Cycle Q Clear(g_c), s	5.6	7.3	0.2	4.7	6.4	6.5	1.7	13.1	1.6	0.4	19.9	3.9
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	415	353	186	373	387	141	773	642	76	704	591
V/C Ratio(X)	0.62	0.47	0.01	0.59	0.44	0.44	0.29	0.54	0.08	0.12	0.77	0.20
Avail Cap(c_a), veh/h	510	975	829	333	750	779	282	813	676	275	813	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	26.0	23.2	33.2	26.5	26.5	33.9	17.2	13.8	36.0	21.3	16.3
Incr Delay (d2), s/veh	3.0	0.8	0.0	2.9	0.8	0.8	1.1	0.6	0.1	0.7	3.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.7	0.1	2.4	3.1	3.3	0.9	6.8	0.7	0.2	11.0	1.7
LnGrp Delay(d),s/veh	35.6	26.8	23.3	36.1	27.3	27.3	35.0	17.9	13.9	36.7	25.2	16.5
LnGrp LOS	D	C	C	D	C	C	C	B	B	D	C	B
Approach Vol, veh/h		329			443			509			666	
Approach Delay, s/veh		30.2			29.5			18.8			23.8	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.4	21.9	10.2	33.5	13.4	20.9	7.3	36.4				
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1				
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0				
Max Q Clear Time (g_c+I1), s	6.7	9.3	3.7	21.9	7.6	8.5	2.4	15.1				
Green Ext Time (p_c), s	0.1	3.2	0.0	4.6	0.2	3.0	0.0	6.2				
Intersection Summary												
HCM 2010 Ctrl Delay			24.9									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	397	138	168	582	41	198	175	166	62	196	18
Future Volume (veh/h)	6	397	138	168	582	41	198	175	166	62	196	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	441	123	187	647	43	220	194	61	69	218	17
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	29	953	263	245	1581	105	376	664	544	393	606	47
Arrive On Green	0.02	0.36	0.34	0.14	0.49	0.46	0.36	0.36	0.36	0.36	0.36	0.34
Sat Flow, veh/h	1723	2643	730	1723	3256	216	1114	1863	1525	1094	1701	133
Grp Volume(v), veh/h	7	285	279	187	341	349	220	194	61	69	0	235
Grp Sat Flow(s),veh/h/ln	1723	1719	1654	1723	1719	1753	1114	1863	1525	1094	0	1833
Q Serve(g_s), s	0.3	10.8	11.2	8.9	10.9	10.9	15.5	6.4	2.3	4.1	0.0	8.1
Cycle Q Clear(g_c), s	0.3	10.8	11.2	8.9	10.9	10.9	23.5	6.4	2.3	10.5	0.0	8.1
Prop In Lane	1.00		0.44	1.00		0.12	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	29	620	597	245	835	851	376	664	544	393	0	654
V/C Ratio(X)	0.24	0.46	0.47	0.76	0.41	0.41	0.58	0.29	0.11	0.18	0.00	0.36
Avail Cap(c_a), veh/h	627	847	815	425	847	864	515	896	734	401	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	20.9	21.3	35.2	14.1	14.2	28.9	19.7	18.4	23.5	0.0	20.3
Incr Delay (d2), s/veh	4.1	1.1	1.2	4.9	0.7	0.7	1.4	0.2	0.1	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.3	5.3	4.5	5.3	5.4	4.9	3.3	1.0	1.3	0.0	4.1
LnGrp Delay(d),s/veh	45.4	22.0	22.5	40.1	14.8	14.8	30.4	19.9	18.5	23.7	0.0	20.6
LnGrp LOS	D	C	C	D	B	B	C	B	B	C		C
Approach Vol, veh/h		571			877			475			304	
Approach Delay, s/veh		22.6			20.2			24.6			21.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	34.7		34.4	5.5	45.4		34.4
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	2.3	13.2		12.5	2.3	12.9		25.5
Green Ext Time (p_c), s	0.3	15.6		3.7	0.0	15.7		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	443	16	72	713	125	32	91	91	103	88	65
Future Volume (veh/h)	11	443	16	72	713	125	32	91	91	103	88	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	498	16	81	801	83	36	102	15	116	99	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1376	44	140	1561	685	354	372	297	218	229	194
Arrive On Green	0.03	0.39	0.37	0.08	0.44	0.44	0.20	0.20	0.20	0.12	0.12	0.00
Sat Flow, veh/h	1774	3498	112	1774	3539	1552	1774	1863	1486	1774	1863	1583
Grp Volume(v), veh/h	12	252	262	81	801	83	36	102	15	116	99	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1841	1774	1770	1552	1774	1863	1486	1774	1863	1583
Q Serve(g_s), s	0.5	7.8	7.9	3.4	12.7	2.5	1.3	3.6	0.6	4.8	3.8	0.0
Cycle Q Clear(g_c), s	0.5	7.8	7.9	3.4	12.7	2.5	1.3	3.6	0.6	4.8	3.8	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	696	724	140	1561	685	354	372	297	218	229	194
V/C Ratio(X)	0.22	0.36	0.36	0.58	0.51	0.12	0.10	0.27	0.05	0.53	0.43	0.00
Avail Cap(c_a), veh/h	718	954	993	718	1909	837	718	753	601	490	514	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.8	16.7	16.8	34.6	15.7	12.9	25.5	26.4	25.2	32.1	31.6	0.0
Incr Delay (d2), s/veh	2.0	0.7	0.7	3.8	0.6	0.2	0.1	0.4	0.1	2.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.9	4.1	1.8	6.4	1.1	0.6	1.9	0.3	2.5	2.1	0.0
LnGrp Delay(d),s/veh	38.8	17.4	17.4	38.4	16.3	13.0	25.6	26.8	25.3	34.1	32.9	0.0
LnGrp LOS	D	B	B	D	B	B	C	C	C	C	C	
Approach Vol, veh/h		526			965			153			215	
Approach Delay, s/veh		17.9			17.9			26.4			33.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	34.6		13.6	6.4	38.3		19.5
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	5.4	9.9		6.8	2.5	14.7		5.6
Green Ext Time (p_c), s	0.2	18.8		0.7	0.0	16.6		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	98	33	208	136	9	57	262	171	6	496	303
Future Volume (veh/h)	164	98	33	208	136	9	57	262	171	6	496	303
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	191	114	5	242	158	0	66	305	119	7	577	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	679	30	303	429	365	342	817	312	98	1127	0
Arrive On Green	0.14	0.20	0.20	0.17	0.23	0.00	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	3452	150	1774	1863	1583	831	2502	956	12	3535	0
Grp Volume(v), veh/h	191	58	61	242	158	0	66	214	210	313	271	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1832	1774	1863	1583	831	1770	1688	1852	1610	0
Q Serve(g_s), s	4.1	1.1	1.1	5.1	2.8	0.0	2.7	3.6	3.8	0.0	5.4	0.0
Cycle Q Clear(g_c), s	4.1	1.1	1.1	5.1	2.8	0.0	8.1	3.6	3.8	5.3	5.4	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.57	0.02		0.00
Lane Grp Cap(c), veh/h	243	348	360	303	429	365	342	578	551	699	526	0
V/C Ratio(X)	0.78	0.17	0.17	0.80	0.37	0.00	0.19	0.37	0.38	0.45	0.52	0.00
Avail Cap(c_a), veh/h	903	1352	1400	1355	1565	1330	726	1397	1332	1543	1271	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	13.1	13.1	15.6	12.7	0.0	14.0	10.1	10.2	10.7	10.7	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	1.8	0.2	0.0	0.1	0.1	0.2	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.5	0.5	2.6	1.5	0.0	0.6	1.8	1.8	2.7	2.4	0.0
LnGrp Delay(d),s/veh	18.5	13.2	13.2	17.5	12.9	0.0	14.1	10.3	10.3	10.9	11.0	0.0
LnGrp LOS	B	B	B	B	B		B	B	B	B	B	
Approach Vol, veh/h		310			400			490			584	
Approach Delay, s/veh		16.5			15.7			10.8			10.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	11.7		16.8	9.4	13.1		16.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	7.1	3.1		7.4	6.1	4.8		10.1
Green Ext Time (p_c), s	0.1	0.5		2.2	0.1	0.5		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	135	85	357	323	18	67	333	344	58	515	292
Future Volume (veh/h)	179	135	85	357	323	18	67	333	344	58	515	292
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	213	161	20	425	385	4	80	396	150	69	613	196
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	260	641	78	260	716	318	124	1250	551	128	1258	560
Arrive On Green	0.15	0.20	0.18	0.15	0.20	0.20	0.07	0.36	0.36	0.07	0.37	0.37
Sat Flow, veh/h	1774	3169	388	1774	3539	1574	1723	3438	1515	1723	3438	1532
Grp Volume(v), veh/h	213	89	92	425	385	4	80	396	150	69	613	196
Grp Sat Flow(s),veh/h/ln	1774	1770	1787	1774	1770	1574	1723	1719	1515	1723	1719	1532
Q Serve(g_s), s	8.7	3.2	3.3	11.0	7.3	0.2	3.4	6.2	5.2	2.9	10.3	7.0
Cycle Q Clear(g_c), s	8.7	3.2	3.3	11.0	7.3	0.2	3.4	6.2	5.2	2.9	10.3	7.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	358	362	260	716	318	124	1250	551	128	1258	560
V/C Ratio(X)	0.82	0.25	0.25	1.64	0.54	0.01	0.64	0.32	0.27	0.54	0.49	0.35
Avail Cap(c_a), veh/h	260	907	917	260	1815	807	367	1901	838	367	1901	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	25.1	25.3	32.0	26.8	23.9	33.9	17.2	16.9	33.5	18.4	17.3
Incr Delay (d2), s/veh	18.4	0.4	0.4	302.6	0.6	0.0	2.1	0.1	0.3	1.3	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	1.6	1.7	27.2	3.6	0.1	1.7	2.9	2.2	1.4	5.0	3.0
LnGrp Delay(d),s/veh	49.4	25.5	25.7	334.6	27.4	24.0	36.0	17.3	17.1	34.8	19.0	18.1
LnGrp LOS	D	C	C	F	C	C	D	B	B	C	B	B
Approach Vol, veh/h		394			814			626			878	
Approach Delay, s/veh		38.5			187.8			19.7			20.0	
Approach LOS		D			F			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	31.3	15.0	19.2	9.4	31.5	15.0	19.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	4.9	8.2	13.0	5.3	5.4	12.3	10.7	9.3
Green Ext Time (p_c), s	0.0	14.6	0.0	3.8	0.1	13.6	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	73.0
HCM 2010 LOS	E

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	0	10	2	15	25	10	161	0	0	166	148
Future Vol, veh/h	86	0	10	2	15	25	10	161	0	0	166	148
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	137	0	16	3	24	40	16	256	0	0	263	235
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11	9.4	10.4	11.1
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	0%	90%	5%	0%	0%
Vol Thru, %	84%	100%	0%	36%	100%	0%
Vol Right, %	0%	0%	10%	60%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	107	96	42	166	148
LT Vol	10	0	86	2	0	0
Through Vol	54	107	0	15	166	0
RT Vol	0	0	10	25	0	148
Lane Flow Rate	101	170	152	67	263	235
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.165	0.274	0.253	0.105	0.41	0.32
Departure Headway (Hd)	5.87	5.791	5.984	5.679	5.608	4.901
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	612	622	600	631	643	735
Service Time	3.597	3.518	4.016	3.718	3.332	2.624
HCM Lane V/C Ratio	0.165	0.273	0.253	0.106	0.409	0.32
HCM Control Delay	9.8	10.7	11	9.4	12.2	9.9
HCM Lane LOS	A	B	B	A	B	A
HCM 95th-tile Q	0.6	1.1	1	0.4	2	1.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	162	13	2	3	12	416
Future Vol, veh/h	162	13	2	3	12	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	216	17	3	4	16	555

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	25	8	16	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	981	1063	1601	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	979	1063	1601	-	-	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1601	-	979	1063	-	-
HCM Lane V/C Ratio	0.002	-	0.221	0.016	-	-
HCM Control Delay (s)	7.3	0	9.7	8.4	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.8	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	263	54	214	448	49	72	404	117	37	663	197
Future Volume (veh/h)	160	263	54	214	448	49	72	404	117	37	663	197
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	186	306	54	249	521	12	84	470	94	43	771	219
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	247	635	111	312	876	377	133	1411	626	80	1002	285
Arrive On Green	0.14	0.21	0.20	0.18	0.25	0.25	0.08	0.41	0.41	0.05	0.38	0.36
Sat Flow, veh/h	1774	3004	523	1774	3539	1524	1723	3438	1525	1723	2642	750
Grp Volume(v), veh/h	186	179	181	249	521	12	84	470	94	43	502	488
Grp Sat Flow(s),veh/h/ln	1774	1770	1757	1774	1770	1524	1723	1719	1525	1723	1719	1673
Q Serve(g_s), s	10.3	9.1	9.3	13.8	13.3	0.6	4.8	9.6	4.0	2.5	26.2	26.3
Cycle Q Clear(g_c), s	10.3	9.1	9.3	13.8	13.3	0.6	4.8	9.6	4.0	2.5	26.2	26.3
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	247	374	371	312	876	377	133	1411	626	80	652	635
V/C Ratio(X)	0.75	0.48	0.49	0.80	0.59	0.03	0.63	0.33	0.15	0.54	0.77	0.77
Avail Cap(c_a), veh/h	806	804	798	806	1608	692	783	1562	693	783	781	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	35.4	35.7	40.5	34.0	29.2	45.8	20.6	19.0	47.7	27.8	28.2
Incr Delay (d2), s/veh	4.6	0.9	1.0	4.7	0.6	0.0	4.8	0.1	0.1	5.5	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	4.5	4.7	7.2	6.6	0.3	2.5	4.5	1.7	1.3	13.1	12.8
LnGrp Delay(d),s/veh	46.9	36.3	36.7	45.2	34.6	29.2	50.7	20.8	19.1	53.3	31.7	32.2
LnGrp LOS	D	D	D	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		546			782			648			1033	
Approach Delay, s/veh		40.1			37.9			24.4			32.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	25.6	11.9	42.8	18.3	29.3	8.7	46.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	15.8	11.3	6.8	28.3	12.3	15.3	4.5	11.6
Green Ext Time (p_c), s	0.7	6.3	0.2	9.1	0.5	6.2	0.1	12.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	755	932	16	25	495
Future Volume (vph)	174	755	932	16	25	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3429		1770	1583
Flt Permitted	0.16	1.00	1.00		0.95	1.00
Satd. Flow (perm)	298	3438	3429		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	198	858	1059	18	28	562
RTOR Reduction (vph)	0	0	1	0	0	342
Lane Group Flow (vph)	198	858	1076	0	28	221
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	40.4	45.0	31.5		13.5	13.5
Effective Green, g (s)	41.6	45.6	32.1		13.7	13.7
Actuated g/C Ratio	0.62	0.68	0.48		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	384	2329	1635		360	322
v/s Ratio Prot	c0.07	0.25	c0.31		0.02	
v/s Ratio Perm	0.25					c0.14
v/c Ratio	0.52	0.37	0.66		0.08	0.68
Uniform Delay, d1	7.4	4.7	13.4		21.7	24.8
Progression Factor	0.93	0.39	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.1	1.0		0.0	4.7
Delay (s)	7.4	1.9	14.4		21.7	29.6
Level of Service	A	A	B		C	C
Approach Delay (s)		2.9	14.4		29.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	12.2
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	214	16	821	1	262	13	273	784	138	237	16
Future Volume (veh/h)	20	214	16	821	1	262	13	273	784	138	237	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	22	235	14	902	1	0	14	300	531	152	260	15
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	82	478	28	1128	1505	673	75	784	1531	334	940	54
Arrive On Green	0.05	0.14	0.12	0.34	0.44	0.00	0.04	0.23	0.23	0.10	0.28	0.26
Sat Flow, veh/h	1774	3396	201	3343	3438	1538	1723	3438	2707	3343	3305	190
Grp Volume(v), veh/h	22	122	127	902	1	0	14	300	531	152	135	140
Grp Sat Flow(s),veh/h/ln	1774	1770	1827	1672	1719	1538	1723	1719	1354	1672	1719	1776
Q Serve(g_s), s	1.0	5.4	5.5	20.8	0.0	0.0	0.7	6.3	9.0	3.6	5.2	5.2
Cycle Q Clear(g_c), s	1.0	5.4	5.5	20.8	0.0	0.0	0.7	6.3	9.0	3.6	5.2	5.2
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	82	249	257	1128	1505	673	75	784	1531	334	489	505
V/C Ratio(X)	0.27	0.49	0.49	0.80	0.00	0.00	0.19	0.38	0.35	0.45	0.28	0.28
Avail Cap(c_a), veh/h	636	1113	1149	1257	2182	976	506	1697	2250	1218	970	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	33.7	33.8	25.6	13.4	0.0	39.3	27.8	10.0	36.1	23.6	23.7
Incr Delay (d2), s/veh	0.6	3.2	3.1	4.2	0.0	0.0	0.4	0.3	0.1	2.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.9	3.0	10.2	0.0	0.0	0.3	3.0	3.3	1.8	2.5	2.6
LnGrp Delay(d),s/veh	39.8	36.9	37.0	29.8	13.4	0.0	39.7	28.1	10.1	38.2	23.9	24.0
LnGrp LOS	D	D	D	C	B		D	C	B	D	C	C
Approach Vol, veh/h		271			903			845			427	
Approach Delay, s/veh		37.2			29.8			17.0			29.0	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.7	16.5	7.7	28.2	7.9	41.3	12.5	23.4
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	22.8	7.5	2.7	7.2	3.0	2.0	5.6	11.0
Green Ext Time (p_c), s	3.9	3.0	0.0	6.7	0.0	3.0	1.0	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	5	463	24	142	20	759	224	187	1119	14
Future Volume (veh/h)	0	0	5	463	24	142	20	759	224	187	1119	14
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				564	0	42	22	893	0	220	1316	14
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.85	0.92	0.85	0.92	0.85	0.85	0.85	0.85	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				868	0	382	291	1266	538	290	2108	22
Arrive On Green				0.24	0.00	0.24	0.34	0.34	0.00	0.16	0.59	0.59
Sat Flow, veh/h				3548	0	1564	410	3725	1583	1774	3587	38
Grp Volume(v), veh/h				564	0	42	22	893	0	220	649	681
Grp Sat Flow(s),veh/h/ln				1774	0	1564	410	1863	1583	1774	1770	1856
Q Serve(g_s), s				6.8	0.0	1.0	1.8	9.9	0.0	5.6	11.4	11.4
Cycle Q Clear(g_c), s				6.8	0.0	1.0	1.8	9.9	0.0	5.6	11.4	11.4
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h				868	0	382	291	1266	538	290	1040	1090
V/C Ratio(X)				0.65	0.00	0.11	0.08	0.71	0.00	0.76	0.62	0.62
Avail Cap(c_a), veh/h				2682	0	1182	375	2034	864	596	1040	1090
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				16.2	0.0	14.0	11.0	13.6	0.0	19.0	6.4	6.4
Incr Delay (d2), s/veh				0.3	0.0	0.0	0.0	0.3	0.0	5.7	0.9	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.3	0.0	0.4	0.2	5.1	0.0	3.2	5.7	5.9
LnGrp Delay(d),s/veh				16.5	0.0	14.0	11.0	13.9	0.0	24.7	7.3	7.2
LnGrp LOS				B		B	B	B		C	A	A
Approach Vol, veh/h					606			915			1550	
Approach Delay, s/veh					16.3			13.8			9.7	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.8	20.2				32.0		15.6
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	7.6	11.9				13.4		8.8
Green Ext Time (p_c), s	0.6	4.1				7.7		1.2

Intersection Summary			
HCM 2010 Ctrl Delay			12.3
HCM 2010 LOS			B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	550	0	0	471	805	785
Future Volume (vph)	550	0	0	471	805	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	679	0	0	581	994	969
RTOR Reduction (vph)	0	0	0	133	0	505
Lane Group Flow (vph)	679	0	0	448	994	464
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	15.4			21.4	21.4	22.4
Effective Green, g (s)	16.4			22.4	22.4	22.4
Actuated g/C Ratio	0.35			0.48	0.48	0.48
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1748			1333	1643	1333
v/s Ratio Prot	c0.14			0.16	c0.29	0.17
v/s Ratio Perm						
v/c Ratio	0.39			0.34	0.60	0.35
Uniform Delay, d1	11.4			7.6	9.0	7.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.2	0.6	0.2
Delay (s)	11.6			7.7	9.6	7.8
Level of Service	B			A	A	A
Approach Delay (s)		11.6	7.7		8.7	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	482	506	12	101	521	200	24	225	48	170	331	618
Future Volume (veh/h)	482	506	12	101	521	200	24	225	48	170	331	618
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	554	582	13	116	599	0	28	259	45	195	380	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	650	1619	36	151	1224	547	59	445	76	292	502	0
Arrive On Green	0.19	0.46	0.45	0.09	0.36	0.00	0.03	0.15	0.14	0.17	0.28	0.00
Sat Flow, veh/h	3442	3539	79	1723	3438	1538	1774	3023	518	1723	1810	0
Grp Volume(v), veh/h	554	291	304	116	599	0	28	150	154	195	380	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1849	1723	1719	1538	1774	1770	1771	1723	1810	0
Q Serve(g_s), s	18.0	12.3	12.4	7.6	15.7	0.0	1.8	9.1	9.4	12.2	22.2	0.0
Cycle Q Clear(g_c), s	18.0	12.3	12.4	7.6	15.7	0.0	1.8	9.1	9.4	12.2	22.2	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h	650	809	845	151	1224	547	59	261	261	292	502	0
V/C Ratio(X)	0.85	0.36	0.36	0.77	0.49	0.00	0.47	0.58	0.59	0.67	0.76	0.00
Avail Cap(c_a), veh/h	1236	1250	1306	309	1809	810	330	933	934	470	1111	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	20.4	20.4	51.6	29.0	0.0	54.8	45.9	46.1	44.9	38.2	0.0
Incr Delay (d2), s/veh	1.3	1.0	0.9	3.1	1.1	0.0	2.1	7.1	7.5	1.0	8.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.2	6.5	3.8	7.7	0.0	0.9	5.0	5.1	5.9	12.2	0.0
LnGrp Delay(d),s/veh	46.6	21.3	21.3	54.7	30.1	0.0	57.0	53.0	53.6	45.9	46.4	0.0
LnGrp LOS	D	C	C	D	C		E	D	D	D	D	
Approach Vol, veh/h		1149			715			332			575	
Approach Delay, s/veh		33.5			34.1			53.6			46.2	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	56.8	7.9	36.7	25.8	45.1	23.6	21.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 26	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	9.6	14.4	3.8	24.2	20.0	17.7	14.2	11.4
Green Ext Time (p_c), s	0.0	27.8	0.0	5.1	0.3	22.6	3.9	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	680	0	0	823	68	62	546	101	0	0	0
Future Volume (veh/h)	198	680	0	0	823	68	62	546	101	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	239	819	0	0	992	77	75	658	36			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	338	2346	0	0	1731	134	440	878	384			
Arrive On Green	0.20	1.00	0.00	0.00	0.52	0.51	0.25	0.25	0.25			
Sat Flow, veh/h	3442	3632	0	0	3421	258	1774	3539	1546			
Grp Volume(v), veh/h	239	819	0	0	527	542	75	658	36			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1816	1774	1770	1546			
Q Serve(g_s), s	5.8	0.0	0.0	0.0	18.3	18.4	3.0	15.5	1.6			
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	18.3	18.4	3.0	15.5	1.6			
Prop In Lane	1.00		0.00	0.00		0.14	1.00		1.00			
Lane Grp Cap(c), veh/h	338	2346	0	0	921	945	440	878	384			
V/C Ratio(X)	0.71	0.35	0.00	0.00	0.57	0.57	0.17	0.75	0.09			
Avail Cap(c_a), veh/h	887	2346	0	0	921	945	615	1227	536			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	34.9	0.0	0.0	0.0	14.8	14.8	26.6	31.2	26.0			
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	2.6	2.5	0.2	1.9	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.0	9.6	9.9	1.5	7.7	0.7			
LnGrp Delay(d),s/veh	35.2	0.0	0.0	0.0	17.3	17.3	26.8	33.1	26.2			
LnGrp LOS	D	A			B	B	C	C	C			
Approach Vol, veh/h		1058			1069			769				
Approach Delay, s/veh		8.0			17.3			32.2				
Approach LOS		A			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		63.7			12.8	50.8		26.3
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		49.9			* 23	22.7		31.0
Max Q Clear Time (g_c+I1), s		2.0			7.8	20.4		17.5
Green Ext Time (p_c), s		23.2			0.8	2.1		4.5

Intersection Summary			
HCM 2010 Ctrl Delay			17.9
HCM 2010 LOS			B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	699	63	119	759	0	0	0	0	172	1156	402
Future Volume (veh/h)	0	699	63	119	759	0	0	0	0	172	1156	402
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	874	0	149	949	0				215	1445	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80				0.80	0.80	0.80
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	933	0	181	1452	0				223	1585	793
Arrive On Green	0.00	0.26	0.00	0.20	0.82	0.00				0.50	0.50	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				446	3164	1583
Grp Volume(v), veh/h	0	874	0	149	949	0				888	772	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1840	1770	1583
Q Serve(g_s), s	0.0	21.7	0.0	7.2	9.3	0.0				41.9	34.8	0.0
Cycle Q Clear(g_c), s	0.0	21.7	0.0	7.2	9.3	0.0				41.9	34.8	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.24		1.00
Lane Grp Cap(c), veh/h	0	933	0	181	1452	0				922	886	793
V/C Ratio(X)	0.00	0.94	0.00	0.82	0.65	0.00				0.96	0.87	0.00
Avail Cap(c_a), veh/h	0	933	0	181	1452	0				924	889	795
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.73	0.73	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	32.4	0.0	35.0	5.6	0.0				21.7	19.9	0.0
Incr Delay (d2), s/veh	0.0	17.6	0.0	19.6	1.7	0.0				21.1	9.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.8	0.0	4.5	4.5	0.0				26.6	19.3	0.0
LnGrp Delay(d),s/veh	0.0	50.0	0.0	54.6	7.3	0.0				42.8	29.4	0.0
LnGrp LOS		D		D	A					D	C	
Approach Vol, veh/h		874			1098						1660	
Approach Delay, s/veh		50.0			13.7						36.6	
Approach LOS		D			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.2	27.7		49.1		40.9		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 9	22.7		* 45		35.9		
Max Q Clear Time (g_c+I1), s	9.2	23.7		43.9		11.3		
Green Ext Time (p_c), s	0.0	0.0		1.0		15.9		

Intersection Summary		
HCM 2010 Ctrl Delay		32.9
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	451	231	502	318	87	208	766	581	100	513	116
Future Volume (veh/h)	190	451	231	502	318	87	208	766	581	100	513	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	221	524	117	584	370	84	242	891	382	116	597	121
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	328	723	323	648	854	192	277	1229	550	168	839	170
Arrive On Green	0.10	0.21	0.21	0.19	0.31	0.29	0.16	0.35	0.35	0.09	0.29	0.27
Sat Flow, veh/h	3343	3438	1536	3343	2791	627	1774	3539	1583	1774	2933	593
Grp Volume(v), veh/h	221	524	117	584	226	228	242	891	382	116	360	358
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1672	1719	1699	1774	1770	1583	1774	1770	1757
Q Serve(g_s), s	6.6	14.8	6.8	17.7	10.9	11.2	13.9	22.8	21.6	6.6	18.9	19.1
Cycle Q Clear(g_c), s	6.6	14.8	6.8	17.7	10.9	11.2	13.9	22.8	21.6	6.6	18.9	19.1
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	328	723	323	648	526	520	277	1229	550	168	506	503
V/C Ratio(X)	0.67	0.73	0.36	0.90	0.43	0.44	0.87	0.72	0.69	0.69	0.71	0.71
Avail Cap(c_a), veh/h	811	1234	551	682	551	544	362	1372	614	225	550	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	38.2	35.1	40.9	28.8	29.1	42.9	29.6	29.2	45.6	33.2	33.5
Incr Delay (d2), s/veh	1.8	0.5	0.3	14.2	0.2	0.2	14.2	1.7	3.0	2.5	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.0	2.9	9.5	5.2	5.3	7.9	11.4	9.9	3.3	9.7	9.8
LnGrp Delay(d),s/veh	47.1	38.8	35.3	55.1	29.0	29.3	57.0	31.3	32.1	48.1	37.1	37.5
LnGrp LOS	D	D	D	E	C	C	E	C	C	D	D	D
Approach Vol, veh/h		862			1038			1515			834	
Approach Delay, s/veh		40.4			43.7			35.6			38.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	40.1	24.1	25.8	20.2	33.7	14.2	35.8
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	36.0	* 21	31.0	* 25	32.0
Max Q Clear Time (g_c+I1), s	8.6	24.8	19.7	16.8	15.9	21.1	8.6	13.2
Green Ext Time (p_c), s	0.0	9.6	0.2	3.6	0.2	7.3	0.5	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	35	29	101	78	0	0	0	0	343	1	31
Future Vol, veh/h	0	35	29	101	78	0	0	0	0	343	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	31	106	82	0	0	0	0	361	1	33

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	37	0	0				332	332	82
Stage 1	-	-	-	-	-	-				295	295	-
Stage 2	-	-	-	-	-	-				37	37	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1574	-	0				663	588	978
Stage 1	0	-	-	-	-	0				755	669	-
Stage 2	0	-	-	-	-	0				985	864	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1574	-	-				618	0	978
Mov Cap-2 Maneuver	-	-	-	-	-	-				618	0	-
Stage 1	-	-	-	-	-	-				704	0	-
Stage 2	-	-	-	-	-	-				985	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.2	17.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1574	-	618	978
HCM Lane V/C Ratio	-	-	0.068	-	0.584	0.034
HCM Control Delay (s)	-	-	7.5	-	18.7	8.8
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	-	3.8	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	365	0	0	75	168	105	3	55	0	0	0
Future Vol, veh/h	15	365	0	0	75	168	105	3	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	384	0	0	79	177	111	3	58	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	79	0	-	-	-	0	495	495	384
Stage 1	-	-	-	-	-	-	416	416	-
Stage 2	-	-	-	-	-	-	79	79	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1519	-	0	0	-	-	534	476	664
Stage 1	-	-	0	0	-	-	666	592	-
Stage 2	-	-	0	0	-	-	944	829	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1519	-	-	-	-	-	528	0	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	0	-
Stage 1	-	-	-	-	-	-	659	0	-
Stage 2	-	-	-	-	-	-	944	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	528	664	1519	-	-	-
HCM Lane V/C Ratio	0.209	0.092	0.01	-	-	-
HCM Control Delay (s)	13.6	11	7.4	-	-	-
HCM Lane LOS	B	B	A	-	-	-
HCM 95th %tile Q(veh)	0.8	0.3	0	-	-	-

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	354	0	0	211	232	3	1	189	0	0	0
Future Vol, veh/h	9	354	0	0	211	232	3	1	189	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	373	0	0	222	244	3	1	199	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.3	11.7	11.8
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	75%	0%	100%	0%	0%	0%	0%
Vol Thru, %	25%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	189	9	177	177	211	232
LT Vol	3	0	9	0	0	0	0
Through Vol	1	0	0	177	177	211	0
RT Vol	0	189	0	0	0	0	232
Lane Flow Rate	4	199	9	186	186	222	244
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.008	0.334	0.018	0.324	0.233	0.373	0.362
Departure Headway (Hd)	7.12	6.037	6.759	6.253	4.498	6.049	5.341
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	595	529	574	796	595	672
Service Time	4.874	3.79	4.506	4	2.245	3.793	3.085
HCM Lane V/C Ratio	0.008	0.334	0.017	0.324	0.234	0.373	0.363
HCM Control Delay	9.9	11.8	9.6	12	8.6	12.4	11.1
HCM Lane LOS	A	B	A	B	A	B	B
HCM 95th-tile Q	0	1.5	0.1	1.4	0.9	1.7	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	0	498	0	0	0	372	65	0	0	115	70
Future Volume (veh/h)	61	0	498	0	0	0	372	65	0	0	115	70
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	66	0	65				400	70	0	0	124	15
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	131	0	117				499	1183	0	0	387	329
Arrive On Green	0.07	0.00	0.07				0.28	0.63	0.00	0.00	0.21	0.21
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	66	0	65				400	70	0	0	124	15
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	1.0	0.0	1.1				5.7	0.4	0.0	0.0	1.6	0.2
Cycle Q Clear(g_c), s	1.0	0.0	1.1				5.7	0.4	0.0	0.0	1.6	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	131	0	117				499	1183	0	0	387	329
V/C Ratio(X)	0.50	0.00	0.56				0.80	0.06	0.00	0.00	0.32	0.05
Avail Cap(c_a), veh/h	1550	0	1384				1305	4090	0	0	4090	3476
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	12.3				9.2	1.9	0.0	0.0	9.2	8.7
Incr Delay (d2), s/veh	1.1	0.0	1.5				1.1	0.1	0.0	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.0				2.9	0.2	0.0	0.0	0.8	0.1
LnGrp Delay(d),s/veh	13.3	0.0	13.8				10.3	2.0	0.0	0.0	9.7	8.8
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		131						470			139	
Approach Delay, s/veh		13.6						9.1			9.6	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.4		6.0	11.7	9.7		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.4		3.1	7.7	3.6		
Green Ext Time (p_c), s		1.9		0.1	0.2	1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	183	16	0	2	24	1	5	21	2	4	18	377
Future Vol, veh/h	183	16	0	2	24	1	5	21	2	4	18	377
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	223	20	0	2	29	1	6	26	2	5	22	460
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.3	8.8	8.6	12.4
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	92%	7%	1%
Vol Thru, %	75%	8%	89%	5%
Vol Right, %	7%	0%	4%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	199	27	399
LT Vol	5	183	2	4
Through Vol	21	16	24	18
RT Vol	2	0	1	377
Lane Flow Rate	34	243	33	487
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.355	0.05	0.562
Departure Headway (Hd)	5.204	5.27	5.505	4.158
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	682	677	655	866
Service Time	3.286	3.355	3.505	2.197
HCM Lane V/C Ratio	0.05	0.359	0.05	0.562
HCM Control Delay	8.6	11.3	8.8	12.4
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.2	1.6	0.2	3.6

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	65	26	321	134	0	9	1	152	3	16	13
Future Vol, veh/h	1	65	26	321	134	0	9	1	152	3	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	83	33	412	172	0	12	1	195	4	21	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	117	0	0	1116	1098	101	1197	1114	172
Stage 1	-	-	-	-	-	-	103	103	-	995	995	-
Stage 2	-	-	-	-	-	-	1013	995	-	202	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	-	1471	-	-	185	213	954	163	208	872
Stage 1	-	-	-	-	-	-	903	810	-	295	323	-
Stage 2	-	-	-	-	-	-	288	323	-	800	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1405	-	-	1470	-	-	123	147	953	98	143	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	147	-	98	143	-
Stage 1	-	-	-	-	-	-	902	809	-	295	223	-
Stage 2	-	-	-	-	-	-	177	223	-	634	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.9	12.7	23.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	676	1405	-	-	1470	-	-	229
HCM Lane V/C Ratio	0.307	0.001	-	-	0.28	-	-	0.162
HCM Control Delay (s)	12.7	7.6	0	-	8.4	0	-	23.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.3	0	-	-	1.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	0	174	19	0	365
Future Vol, veh/h	25	0	174	19	0	365
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	0	210	23	0	440

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	661	221	0	0	233	0
Stage 1	221	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	427	819	-	-	1335	-
Stage 1	816	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	819	-	-	1335	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	427	1335	-
HCM Lane V/C Ratio	-	-	0.071	-	-
HCM Control Delay (s)	-	-	14.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	336	679	97	103	190	180	86	135	361	145	66
Future Volume (veh/h)	149	336	679	97	103	190	180	86	135	361	145	66
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	151	339	487	98	104	78	182	87	16	365	146	13
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	1412	631	279	1255	558	401	436	78	517	629	281
Arrive On Green	0.11	0.40	0.40	0.08	0.35	0.35	0.12	0.15	0.13	0.15	0.18	0.18
Sat Flow, veh/h	3442	3539	1582	3442	3539	1575	3442	2994	536	3442	3539	1583
Grp Volume(v), veh/h	151	339	487	98	104	78	182	50	53	365	146	13
Grp Sat Flow(s),veh/h/ln	1721	1770	1582	1721	1770	1575	1721	1770	1761	1721	1770	1583
Q Serve(g_s), s	2.9	4.5	19.1	1.9	1.4	2.4	3.5	1.8	1.9	7.2	2.5	0.5
Cycle Q Clear(g_c), s	2.9	4.5	19.1	1.9	1.4	2.4	3.5	1.8	1.9	7.2	2.5	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	393	1412	631	279	1255	558	401	257	256	517	629	281
V/C Ratio(X)	0.38	0.24	0.77	0.35	0.08	0.14	0.45	0.20	0.20	0.71	0.23	0.05
Avail Cap(c_a), veh/h	1038	3042	1360	1038	3002	1336	1038	1509	1501	1028	3012	1348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	14.2	18.6	31.0	15.3	15.6	29.4	26.8	26.9	28.8	25.1	24.3
Incr Delay (d2), s/veh	0.2	0.1	2.5	0.3	0.0	0.1	0.3	0.6	0.6	0.7	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.2	8.7	0.9	0.7	1.1	1.7	0.9	1.0	3.4	1.3	0.2
LnGrp Delay(d),s/veh	29.5	14.4	21.1	31.3	15.3	15.7	29.7	27.4	27.6	29.5	25.4	24.4
LnGrp LOS	C	B	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		977			280			285			524	
Approach Delay, s/veh		20.0			21.0			28.9			28.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	32.4	12.3	16.8	12.1	30.1	14.7	14.4
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60
Max Q Clear Time (g_c+I1), s	3.9	21.1	5.5	4.5	4.9	4.4	9.2	3.9
Green Ext Time (p_c), s	0.0	6.0	0.1	2.6	0.1	6.1	0.2	2.6

Intersection Summary			
HCM 2010 Ctrl Delay			23.5
HCM 2010 LOS			C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	661	105	159	373	27	52	17	191	3	4	2
Future Volume (veh/h)	13	661	105	159	373	27	52	17	191	3	4	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	14	711	85	171	401	28	56	18	23	3	4	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	1022	867	200	1133	79	224	29	111	138	62	0
Arrive On Green	0.00	0.55	0.55	0.11	0.66	0.65	0.07	0.07	0.07	0.08	0.08	0.00
Sat Flow, veh/h	1774	1863	1580	1774	1721	120	1235	397	1537	348	750	0
Grp Volume(v), veh/h	14	711	85	171	0	429	74	0	23	7	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1580	1774	0	1841	1632	0	1537	1098	0	0
Q Serve(g_s), s	0.2	13.1	1.2	4.4	0.0	4.9	0.0	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	13.1	1.2	4.4	0.0	4.9	1.9	0.0	0.7	1.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	0.76		1.00	0.43		0.00
Lane Grp Cap(c), veh/h	6	1022	867	200	0	1212	253	0	111	201	0	0
V/C Ratio(X)	2.20	0.70	0.10	0.85	0.00	0.35	0.29	0.00	0.21	0.03	0.00	0.00
Avail Cap(c_a), veh/h	736	1609	1365	736	0	1590	801	0	686	1151	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.4	7.7	5.1	20.5	0.0	3.6	21.1	0.0	20.5	19.9	0.0	0.0
Incr Delay (d2), s/veh	580.3	1.1	0.1	4.0	0.0	0.2	0.2	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.8	0.5	2.4	0.0	2.5	0.9	0.0	0.3	0.1	0.0	0.0
LnGrp Delay(d),s/veh	631.5	8.8	5.1	24.5	0.0	3.8	21.3	0.0	20.9	19.9	0.0	0.0
LnGrp LOS	F	A	A	C		A	C		C	B		
Approach Vol, veh/h		810			600			97			7	
Approach Delay, s/veh		19.2			9.7			21.2			19.9	
Approach LOS		B			A			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	29.8		7.9	4.2	34.9		7.9
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.0	40.0		31.0	20.0	40.0		* 21
Max Q Clear Time (g_c+I1), s	6.4	15.1		3.9	2.2	6.9		3.9
Green Ext Time (p_c), s	0.0	10.1		0.2	0.0	11.3		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		15.6
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	4	154	1	36	2	181	222	80	322	0
Future Vol, veh/h	8	5	4	154	1	36	2	181	222	80	322	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	6	5	193	1	45	3	226	278	100	403	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	11	14.2	12.6	13.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	47%	100%	0%	43%	0%
Vol Thru, %	99%	0%	29%	0%	3%	57%	100%
Vol Right, %	0%	100%	24%	0%	97%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	222	17	154	37	187	215
LT Vol	2	0	8	154	0	80	0
Through Vol	181	0	5	0	1	107	215
RT Vol	0	222	4	0	36	0	0
Lane Flow Rate	229	278	21	192	46	234	268
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.395	0.424	0.044	0.402	0.081	0.415	0.459
Departure Headway (Hd)	6.213	5.497	7.536	7.512	6.31	6.379	6.162
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	579	652	473	477	566	562	582
Service Time	3.97	3.253	5.624	5.272	4.069	4.136	3.919
HCM Lane V/C Ratio	0.396	0.426	0.044	0.403	0.081	0.416	0.46
HCM Control Delay	13	12.3	11	15.3	9.6	13.6	14.1
HCM Lane LOS	B	B	B	C	A	B	B
HCM 95th-tile Q	1.9	2.1	0.1	1.9	0.3	2	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	321	241	0	242	0	155	320	0	0	373	191
Future Volume (veh/h)	260	321	241	0	242	0	155	320	0	0	373	191
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	299	369	100	0	278	0	178	368	0	0	429	61
Adj No. of Lanes	1	0	1	0	2	0	1	2	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	0	315	0	414	0	222	1813	0	2	619	519
Arrive On Green	0.20	0.21	0.20	0.00	0.12	0.00	0.13	0.51	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1774	0	1583	0	3725	0	1774	3632	0	1774	1863	1563
Grp Volume(v), veh/h	299	0	100	0	278	0	178	368	0	0	429	61
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1770	0	1774	1770	0	1774	1863	1563
Q Serve(g_s), s	11.8	0.0	3.9	0.0	5.5	0.0	7.1	4.1	0.0	0.0	14.5	2.0
Cycle Q Clear(g_c), s	11.8	0.0	3.9	0.0	5.5	0.0	7.1	4.1	0.0	0.0	14.5	2.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	353	0	315	0	414	0	222	1813	0	2	619	519
V/C Ratio(X)	0.85	0.00	0.32	0.00	0.67	0.00	0.80	0.20	0.00	0.00	0.69	0.12
Avail Cap(c_a), veh/h	793	0	708	0	779	0	439	2400	0	98	904	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	24.9	0.0	30.8	0.0	30.9	9.6	0.0	0.0	21.1	16.9
Incr Delay (d2), s/veh	5.7	0.0	0.6	0.0	1.9	0.0	2.6	0.2	0.0	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	1.8	0.0	2.8	0.0	3.6	2.0	0.0	0.0	7.7	0.9
LnGrp Delay(d),s/veh	33.7	0.0	25.5	0.0	32.7	0.0	33.5	9.8	0.0	0.0	22.6	17.0
LnGrp LOS	C		C		C		C	A			C	B
Approach Vol, veh/h		399			278			546			490	
Approach Delay, s/veh		31.7			32.7			17.5			21.9	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	41.2		12.5	13.1	28.2		19.0
Change Period (Y+Rc), s	3.5	4.3		4.0	* 4.2	4.3		4.0
Max Green Setting (Gmax), s	4.5	49.0		16.0	* 18	35.0		33.0
Max Q Clear Time (g_c+I1), s	0.0	6.1		7.5	9.1	16.5		13.8
Green Ext Time (p_c), s	0.0	9.9		1.1	0.0	7.3		1.1

Intersection Summary		
HCM 2010 Ctrl Delay		24.5
HCM 2010 LOS		C

Notes

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	249	99	155	366	67
Future Vol, veh/h	71	249	99	155	366	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	277	110	172	407	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	799	407	407	0	-	0
Stage 1	407	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	644	1152	-	-	0
Stage 1	672	-	-	-	-	0
Stage 2	683	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	321	644	1152	-	-	-
Mov Cap-2 Maneuver	321	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	3.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1152	-	828	-
HCM Lane V/C Ratio	0.095	-	0.429	-
HCM Control Delay (s)	8.5	-	12.6	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.3	-	2.2	-

Intersection												
Int Delay, s/veh	0.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	238	83	37	180	9	63	0	49	11	0	0
Future Vol, veh/h	0	238	83	37	180	9	63	0	49	11	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	259	90	40	196	10	68	0	53	12	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	259	214	0	317	188	27	0	0	0	53	0	0
Stage 1	24	24	-	164	164	-	-	-	-	-	-	-
Stage 2	235	190	-	153	24	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	673	682	-	612	706	1042	-	-	-	1551	-	-
Stage 1	991	875	-	822	761	-	-	-	-	-	-	-
Stage 2	747	742	-	834	875	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	520	677	-	-	700	1042	-	-	-	1551	-	-
Mov Cap-2 Maneuver	520	677	-	-	700	-	-	-	-	-	-	-
Stage 1	991	868	-	822	761	-	-	-	-	-	-	-
Stage 2	550	742	-	581	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s				7.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	677	-	-	722	1551	-	-
HCM Lane V/C Ratio	-	-	-	0.191	-	-	0.149	0.008	-	-
HCM Control Delay (s)	-	-	-	11.6	-	-	10.9	7.3	0	-
HCM Lane LOS	-	-	-	B	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.7	-	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	3.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	136	147	422	631	19
Future Vol, veh/h	6	136	147	422	631	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	145	156	449	671	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1443	681	691	0	-	0
Stage 1	681	-	-	-	-	-
Stage 2	762	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	146	450	904	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	450	904	-	-	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	2.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	904	-	399	-	-
HCM Lane V/C Ratio	0.173	-	0.379	-	-
HCM Control Delay (s)	9.8	0	19.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	814	191	0	602	659	0	0	0	580	2	166
Future Volume (veh/h)	0	814	191	0	602	659	0	0	0	580	2	166
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	839	0	0	621	0				599	0	65
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2287	0	0	1592	712				1104	0	493
Arrive On Green	0.00	0.46	0.00	0.00	0.46	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	839	0	0	621	0				599	0	65
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	3.9	0.0	0.0	4.2	0.0				5.0	0.0	1.0
Cycle Q Clear(g_c), s	0.0	3.9	0.0	0.0	4.2	0.0				5.0	0.0	1.0
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2287	0	0	1592	712				1104	0	493
V/C Ratio(X)	0.00	0.37	0.00	0.00	0.39	0.00				0.54	0.00	0.13
Avail Cap(c_a), veh/h	0	8502	0	0	5917	2647				3103	0	1385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.2	0.0	0.0	6.2	0.0				10.1	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.0	2.0	0.0				2.4	0.0	0.5
LnGrp Delay(d),s/veh	0.0	6.2	0.0	0.0	6.3	0.0				10.3	0.0	8.8
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		839			621						664	
Approach Delay, s/veh		6.2			6.3						10.1	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.4		15.0		20.4		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		5.9		7.0		6.2		
Green Ext Time (p_c), s		7.4		1.3		7.4		

Intersection Summary		
HCM 2010 Ctrl Delay		7.5
HCM 2010 LOS		A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1264	153	0	1154	485	103	0	1061	0	0	0
Future Volume (vph)	1	1264	153	0	1154	485	103	0	1061	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4860			4721			1770	2787			
Flt Permitted		0.94			1.00			0.95	1.00			
Satd. Flow (perm)		4562			4721			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1303	158	0	1190	500	106	0	1094	0	0	0
RTOR Reduction (vph)	0	11	0	0	78	0	0	0	16	0	0	0
Lane Group Flow (vph)	0	1451	0	0	1612	0	0	106	1078	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		33.3			59.5			23.2	49.4			
Effective Green, g (s)		36.1			62.3			26.0	52.2			
Actuated g/C Ratio		0.37			0.65			0.27	0.54			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1710			3054			477	1510			
v/s Ratio Prot					0.34			0.06	c0.39			
v/s Ratio Perm		c0.32										
v/c Ratio		0.85			0.53			0.22	0.71			
Uniform Delay, d1		27.6			9.1			27.3	16.5			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		4.0			0.1			0.1	1.4			
Delay (s)		31.6			9.2			27.4	17.8			
Level of Service		C			A			C	B			
Approach Delay (s)		31.6			9.2			18.7			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	979	440	56	655	133	562	298	97	230	376	326
Future Volume (veh/h)	520	979	440	56	655	133	562	298	97	230	376	326
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	1009	177	58	675	114	579	307	0	237	388	144
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	777	1300	581	86	818	137	941	1055	472	274	621	270
Arrive On Green	0.23	0.38	0.38	0.05	0.19	0.18	0.27	0.30	0.00	0.15	0.18	0.18
Sat Flow, veh/h	3343	3438	1536	1723	4263	712	3442	3539	1583	1774	3539	1538
Grp Volume(v), veh/h	536	1009	177	58	520	269	579	307	0	237	388	144
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1723	1647	1681	1721	1770	1583	1774	1770	1538
Q Serve(g_s), s	19.6	34.6	4.6	4.4	20.3	20.7	19.7	8.9	0.0	17.5	13.6	11.4
Cycle Q Clear(g_c), s	19.6	34.6	4.6	4.4	20.3	20.7	19.7	8.9	0.0	17.5	13.6	11.4
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	777	1300	581	86	632	323	941	1055	472	274	621	270
V/C Ratio(X)	0.69	0.78	0.30	0.67	0.82	0.83	0.62	0.29	0.00	0.87	0.63	0.53
Avail Cap(c_a), veh/h	973	1450	647	129	676	345	941	1055	472	318	621	270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	36.7	5.2	62.6	51.9	52.4	42.5	36.1	0.0	55.3	51.2	50.3
Incr Delay (d2), s/veh	0.8	1.3	0.2	8.7	7.7	15.3	1.2	0.7	0.0	19.2	4.7	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	16.6	2.0	2.3	9.9	11.0	9.5	4.5	0.0	10.0	7.0	5.4
LnGrp Delay(d),s/veh	47.8	38.0	5.4	71.3	59.6	67.7	43.7	36.8	0.0	74.5	55.9	57.6
LnGrp LOS	D	D	A	E	E	E	D	D		E	E	E
Approach Vol, veh/h		1722			847			886			769	
Approach Delay, s/veh		37.7			63.0			41.3			62.0	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	43.9	10.7	54.7	41.1	27.5	35.6	29.7
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	23.0	26.0	9.0	55.0	27.0	* 22	38.0	* 26
Max Q Clear Time (g_c+I1), s	19.5	10.9	6.4	36.6	21.7	15.6	21.6	22.7
Green Ext Time (p_c), s	0.2	3.7	0.0	9.1	1.8	1.6	8.5	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	61	71	342	66	56	114	605	321	75	892	15
Future Volume (veh/h)	39	61	71	342	66	56	114	605	321	75	892	15
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	42	66	10	419	0	0	123	651	0	81	959	15
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	132	182	597	0	266	178	1624	726	126	2216	35
Arrive On Green	0.12	0.12	0.12	0.17	0.00	0.00	0.10	0.46	0.00	0.07	0.43	0.41
Sat Flow, veh/h	711	1117	1543	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	108	0	10	419	0	0	123	651	0	81	630	344
Grp Sat Flow(s),veh/h/ln	1827	0	1543	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	4.8	0.0	0.5	9.7	0.0	0.0	5.8	10.6	0.0	3.9	11.3	11.4
Cycle Q Clear(g_c), s	4.8	0.0	0.5	9.7	0.0	0.0	5.8	10.6	0.0	3.9	11.3	11.4
Prop In Lane	0.39		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	216	0	182	597	0	266	178	1624	726	126	1457	794
V/C Ratio(X)	0.50	0.00	0.05	0.70	0.00	0.00	0.69	0.40	0.00	0.64	0.43	0.43
Avail Cap(c_a), veh/h	650	0	549	1670	0	745	631	1889	845	631	1810	986
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	34.1	34.2	0.0	0.0	37.9	15.6	0.0	39.4	17.4	17.4
Incr Delay (d2), s/veh	1.8	0.0	0.1	1.5	0.0	0.0	4.8	0.3	0.0	5.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.2	4.9	0.0	0.0	3.1	5.2	0.0	2.1	5.3	5.9
LnGrp Delay(d),s/veh	37.8	0.0	34.2	35.7	0.0	0.0	42.7	16.0	0.0	44.7	17.8	18.2
LnGrp LOS	D		C	D			D	B		D	B	B
Approach Vol, veh/h		118			419			774			1055	
Approach Delay, s/veh		37.5			35.7			20.2			20.0	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	44.0		18.7	12.7	41.4		14.3				
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0				
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	5.9	12.6		11.7	7.8	13.4		6.8				
Green Ext Time (p_c), s	0.2	23.0		1.4	0.3	22.6		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			23.7									
HCM 2010 LOS			C									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1034	87	172	562	182	174	328	87	382	253	205
Future Volume (veh/h)	222	1034	87	172	562	182	174	328	87	382	253	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	1100	89	183	598	58	185	349	23	406	269	70
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	674	1269	103	301	1395	434	289	871	387	523	1112	494
Arrive On Green	0.20	0.39	0.37	0.09	0.28	0.28	0.08	0.25	0.25	0.15	0.31	0.31
Sat Flow, veh/h	3343	3219	260	3343	4940	1538	3442	3539	1574	3442	3539	1573
Grp Volume(v), veh/h	236	587	602	183	598	58	185	349	23	406	269	70
Grp Sat Flow(s),veh/h/ln	1672	1719	1760	1672	1647	1538	1721	1770	1574	1721	1770	1573
Q Serve(g_s), s	7.9	40.9	41.0	6.9	12.8	3.7	6.8	10.7	1.1	14.7	7.3	2.3
Cycle Q Clear(g_c), s	7.9	40.9	41.0	6.9	12.8	3.7	6.8	10.7	1.1	14.7	7.3	2.3
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	677	694	301	1395	434	289	871	387	523	1112	494
V/C Ratio(X)	0.35	0.87	0.87	0.61	0.43	0.13	0.64	0.40	0.06	0.78	0.24	0.14
Avail Cap(c_a), veh/h	674	677	694	429	1395	434	556	871	387	609	1112	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	36.2	36.5	57.0	38.1	34.8	57.6	41.0	21.8	53.0	33.1	9.8
Incr Delay (d2), s/veh	0.1	14.0	13.8	0.7	1.0	0.6	0.9	1.4	0.3	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	22.0	22.6	3.2	6.0	1.6	3.2	5.4	0.5	7.3	3.6	1.0
LnGrp Delay(d),s/veh	44.7	50.2	50.3	57.7	39.1	35.4	58.5	42.4	22.1	57.4	33.1	9.8
LnGrp LOS	D	D	D	E	D	D	E	D	C	E	C	A
Approach Vol, veh/h		1425			839			557			745	
Approach Delay, s/veh		49.3			42.9			46.9			44.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	40.0	23.8	36.0	15.0	55.2	14.9	44.8
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	20.8	33.9	20.2	29.9	13.9	40.2	18.9	31.2
Max Q Clear Time (g_c+I1), s	9.9	14.8	16.7	12.7	8.9	43.0	8.8	9.3
Green Ext Time (p_c), s	2.1	1.3	0.2	0.7	0.1	0.0	0.1	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	185	0.0	0.196	6.7	LOS A	1.0	24.6	0.66	0.64	29.5
8	T1	2	0.0	0.196	5.7	LOS A	1.0	24.6	0.66	0.61	24.4
18	R2	142	0.0	0.196	5.7	LOS A	1.0	24.6	0.66	0.61	35.8
Approach		329	0.0	0.196	6.3	LOS A	1.0	24.6	0.66	0.63	32.7
East: WB Boronda Rd											
1	L2	157	0.0	0.383	6.3	LOS A	2.4	58.9	0.41	0.26	30.0
6	T1	957	0.4	0.383	5.8	LOS A	2.4	61.3	0.40	0.24	33.3
16	R2	1	0.0	0.001	2.0	LOS A	0.0	0.1	0.03	0.00	34.3
Approach		1116	0.3	0.383	5.9	LOS A	2.4	61.3	0.40	0.24	32.9
North: SB McKinnon St											
7	L2	2	0.0	0.002	3.9	LOS A	0.0	0.2	0.61	0.38	33.8
4	T1	4	0.0	0.006	3.1	LOS A	0.0	0.7	0.61	0.40	32.0
14	R2	11	0.0	0.006	3.0	LOS A	0.0	0.7	0.59	0.38	33.1
Approach		18	0.0	0.006	3.1	LOS A	0.0	0.7	0.60	0.39	33.0
West: EB Boronda Rd											
5	L2	1	0.0	0.390	6.3	LOS A	2.2	53.8	0.33	0.20	33.1
2	T1	1165	0.0	0.390	5.9	LOS A	2.2	55.3	0.32	0.18	35.0
12	R2	435	0.0	0.267	4.3	LOS A	1.4	34.2	0.28	0.15	29.6
Approach		1601	0.0	0.390	5.5	LOS A	2.2	55.3	0.31	0.17	34.1
All Vehicles		3064	0.1	0.390	5.7	LOS A	2.4	61.3	0.38	0.25	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	150	0.0	0.123	4.0	LOS A	0.6	15.0	0.61	0.52	35.3
8	T1	1	0.0	0.001	3.9	LOS A	0.0	0.1	0.58	0.33	36.3
18	R2	178	0.0	0.146	4.2	LOS A	0.7	18.0	0.61	0.53	36.2
Approach		329	0.0	0.146	4.1	LOS A	0.7	18.0	0.61	0.52	35.7
East: WB Baronda Rd											
1	L2	132	0.0	0.439	7.3	LOS A	2.9	73.1	0.41	0.25	35.4
6	T1	1000	0.3	0.439	7.1	LOS A	3.0	74.2	0.41	0.24	36.3
16	R2	1	0.0	0.439	7.0	LOS A	3.0	74.2	0.40	0.24	34.8
Approach		1133	0.3	0.439	7.1	LOS A	3.0	74.2	0.41	0.25	36.2
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.001	4.7	LOS A	0.0	0.1	0.63	0.39	34.4
4	T1	1	0.0	0.001	3.1	LOS A	0.0	0.1	0.62	0.34	36.2
14	R2	1	0.0	0.001	3.0	LOS A	0.0	0.1	0.58	0.31	36.5
Approach		3	0.0	0.001	3.6	LOS A	0.0	0.1	0.61	0.34	35.7
West: EB Boronda Rd											
5u	U	1	0.0	0.483	7.9	LOS A	3.3	82.3	0.39	0.23	37.0
5	L2	1	0.0	0.483	7.9	LOS A	3.3	82.3	0.39	0.23	35.5
2	T1	1045	0.4	0.483	7.7	LOS A	3.3	83.2	0.39	0.23	36.3
12	R2	228	0.0	0.483	7.5	LOS A	3.3	83.2	0.38	0.22	35.1
Approach		1275	0.3	0.483	7.7	LOS A	3.3	83.2	0.39	0.22	36.1
All Vehicles		2741	0.3	0.483	7.0	LOS A	3.3	83.2	0.42	0.27	36.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	124	0.0	0.179	7.2	LOS A	0.6	14.4	0.63	0.63	34.4
8	T1	391	0.0	0.241	7.0	LOS A	0.9	23.0	0.63	0.63	34.5
18	R2	461	0.0	0.275	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		976	0.0	0.275	3.7	LOS A	0.9	23.0	0.33	0.33	36.6
East: WB Boronda Rd											
1	L2	243	0.0	0.363	7.3	LOS A	1.5	38.6	0.52	0.49	33.2
6	T1	956	0.2	0.363	6.9	LOS A	1.6	40.6	0.52	0.48	38.9
16	R2	169	0.0	0.133	3.9	LOS A	0.5	13.1	0.41	0.31	38.0
Approach		1368	0.1	0.363	6.6	LOS A	1.6	40.6	0.50	0.46	38.1
North: SB Natividad Rd											
7	L2	351	0.3	0.330	8.5	LOS A	1.4	34.9	0.64	0.66	34.4
4	T1	504	0.0	0.330	7.4	LOS A	1.5	36.8	0.64	0.65	33.8
14	R2	120	7.5	0.120	4.7	LOS A	0.4	11.7	0.53	0.50	38.5
Approach		975	1.0	0.330	7.5	LOS A	1.5	36.8	0.63	0.64	34.8
West: EB Boronda Rd											
5u	U	1	0.0	0.436	9.8	LOS A	2.3	57.5	0.66	0.72	37.0
5	L2	149	0.0	0.436	9.8	LOS A	2.3	57.5	0.66	0.72	36.4
2	T1	1041	0.0	0.436	9.1	LOS A	2.4	61.2	0.65	0.72	38.0
12	R2	86	0.0	0.072	3.6	LOS A	0.3	6.6	0.45	0.36	38.0
Approach		1277	0.0	0.436	8.8	LOS A	2.4	61.2	0.64	0.69	37.8
All Vehicles		4597	0.3	0.436	6.8	LOS A	2.4	61.2	0.53	0.54	37.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	364	0.0	0.230	7.1	LOS A	1.2	29.1	0.71	0.70	31.5
8	T1	195	0.0	0.199	4.9	LOS A	1.2	28.8	0.70	0.62	34.7
18	R2	36	0.0	0.199	4.9	LOS A	1.2	28.8	0.70	0.62	34.1
Approach		595	0.0	0.230	6.2	LOS A	1.2	29.1	0.71	0.67	32.6
East: WB Boronda Rd											
1	L2	15	0.0	0.354	7.3	LOS A	1.5	37.3	0.53	0.51	34.1
6	T1	767	0.2	0.354	6.8	LOS A	1.6	39.2	0.53	0.49	35.4
16	R2	23	0.0	0.017	2.8	LOS A	0.1	1.8	0.32	0.17	36.0
Approach		806	0.2	0.354	6.7	LOS A	1.6	39.2	0.52	0.48	35.4
North: SB Independence Blvd (Future)											
7	L2	17	0.0	0.164	5.1	LOS A	0.7	16.7	0.58	0.55	35.6
4	T1	147	0.0	0.164	5.1	LOS A	0.7	16.7	0.58	0.55	34.2
14	R2	193	0.0	0.192	5.4	LOS A	0.8	19.8	0.58	0.57	34.5
Approach		357	0.0	0.192	5.3	LOS A	0.8	19.8	0.58	0.56	34.4
West: EB Boronda Rd											
5u	U	1	0.0	0.454	7.5	LOS A	3.2	80.9	0.45	0.28	35.3
5	L2	106	0.0	0.454	7.5	LOS A	3.2	80.9	0.45	0.28	34.2
2	T1	1139	0.1	0.454	7.0	LOS A	3.3	83.3	0.44	0.27	35.1
12	R2	517	0.0	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1763	0.1	0.454	5.0	LOS A	3.3	83.3	0.31	0.19	35.4
All Vehicles		3521	0.1	0.454	5.6	LOS A	3.3	83.3	0.45	0.38	34.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	1007	186	27	950	164	99	23	15	108	17	79
Future Volume (veh/h)	207	1007	186	27	950	164	99	23	15	108	17	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	225	1049	179	28	990	65	103	25	11	117	18	60
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	2	2	2	2	2	2	2
Cap, veh/h	277	1457	248	42	1254	571	136	33	15	147	23	76
Arrive On Green	0.16	0.50	0.50	0.02	0.36	0.36	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1774	2936	500	1723	3438	1566	1313	319	140	1031	159	529
Grp Volume(v), veh/h	225	613	615	28	990	65	139	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1717	1723	1719	1566	1772	0	0	1718	0	0
Q Serve(g_s), s	8.4	19.2	19.3	1.1	17.7	1.9	5.2	0.0	0.0	7.5	0.0	0.0
Cycle Q Clear(g_c), s	8.4	19.2	19.3	1.1	17.7	1.9	5.2	0.0	0.0	7.5	0.0	0.0
Prop In Lane	1.00		0.29	1.00		1.00	0.74		0.08	0.60		0.31
Lane Grp Cap(c), veh/h	277	853	852	42	1254	571	184	0	0	246	0	0
V/C Ratio(X)	0.81	0.72	0.72	0.67	0.79	0.11	0.76	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	413	950	949	100	1300	592	412	0	0	400	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.1	13.6	13.6	33.3	19.5	14.5	30.0	0.0	0.0	28.5	0.0	0.0
Incr Delay (d2), s/veh	7.5	2.4	2.4	17.3	3.3	0.1	6.2	0.0	0.0	5.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	9.6	9.6	0.7	8.8	0.8	2.9	0.0	0.0	4.0	0.0	0.0
LnGrp Delay(d),s/veh	35.5	15.9	16.0	50.6	22.7	14.6	36.2	0.0	0.0	34.2	0.0	0.0
LnGrp LOS	D	B	B	D	C	B	D			C		
Approach Vol, veh/h		1453			1083			139			195	
Approach Delay, s/veh		19.0			23.0			36.2			34.2	
Approach LOS		B			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	38.1		13.8	14.7	29.1		11.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	16.0	26.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	21.3		9.5	10.4	19.7		7.2
Green Ext Time (p_c), s	0.0	12.4		0.5	0.3	5.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	199	56	215	186	192	114	870	242	172	1025	195
Future Volume (veh/h)	186	199	56	215	186	192	114	870	242	172	1025	195
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	196	209	7	226	196	31	120	916	229	181	1079	117
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	510	221	276	300	251	550	1995	497	286	1347	411
Arrive On Green	0.14	0.14	0.14	0.16	0.16	0.16	0.31	0.49	0.48	0.08	0.26	0.26
Sat Flow, veh/h	1774	3539	1531	1774	1863	1560	1774	4057	1010	3442	5085	1551
Grp Volume(v), veh/h	196	209	7	226	196	31	120	765	380	181	1079	117
Grp Sat Flow(s),veh/h/ln	1774	1770	1531	1774	1863	1560	1774	1695	1677	1721	1695	1551
Q Serve(g_s), s	13.7	6.9	0.3	15.8	12.6	2.2	6.4	19.0	19.3	6.5	25.3	5.2
Cycle Q Clear(g_c), s	13.7	6.9	0.3	15.8	12.6	2.2	6.4	19.0	19.3	6.5	25.3	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	246	510	221	276	300	251	550	1667	825	286	1347	411
V/C Ratio(X)	0.80	0.41	0.03	0.82	0.65	0.12	0.22	0.46	0.46	0.63	0.80	0.28
Avail Cap(c_a), veh/h	255	998	432	457	738	618	550	1667	825	371	1347	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	49.8	13.0	52.3	50.3	46.0	32.7	21.3	21.9	56.8	43.9	17.4
Incr Delay (d2), s/veh	14.1	0.2	0.0	2.3	0.9	0.1	0.1	0.9	1.9	0.9	5.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	3.4	0.1	7.9	6.6	0.9	3.1	9.0	9.4	3.1	12.5	2.4
LnGrp Delay(d),s/veh	67.5	50.0	13.1	54.5	51.2	46.0	32.7	22.3	23.7	57.6	49.0	19.1
LnGrp LOS	E	D	B	D	D	D	C	C	C	E	D	B
Approach Vol, veh/h		412			453			1265			1377	
Approach Delay, s/veh		57.7			52.5			23.7			47.6	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	67.0	23.9	22.5	43.7	37.9	21.8	24.6
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6
Max Q Clear Time (g_c+I1), s	8.5	21.3	17.8	8.9	8.4	27.3	15.7	14.6
Green Ext Time (p_c), s	0.0	1.8	0.1	0.8	0.0	1.6	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	40.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	0	306	0	0	0	385	983	0	9	785	142
Future Volume (veh/h)	278	0	306	0	0	0	385	983	0	9	785	142
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	980	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	299	0	77				414	1057	0	10	844	129
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	386	0	338				511	2963	0	27	1381	210
Arrive On Green	0.21	0.00	0.21				0.29	0.58	0.00	0.02	0.31	0.29
Sat Flow, veh/h	1811	0	1583				1774	5253	0	1774	4454	677
Grp Volume(v), veh/h	299	0	77				414	1057	0	10	641	332
Grp Sat Flow(s),veh/h/ln	906	0	1583				1774	1695	0	1774	1695	1740
Q Serve(g_s), s	9.9	0.0	2.6				13.8	7.0	0.0	0.4	10.2	10.4
Cycle Q Clear(g_c), s	9.9	0.0	2.6				13.8	7.0	0.0	0.4	10.2	10.4
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.39
Lane Grp Cap(c), veh/h	386	0	338				511	2963	0	27	1051	540
V/C Ratio(X)	0.77	0.00	0.23				0.81	0.36	0.00	0.37	0.61	0.61
Avail Cap(c_a), veh/h	869	0	760				837	2963	0	558	1680	862
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	20.7				21.0	7.0	0.0	31.0	18.7	19.0
Incr Delay (d2), s/veh	3.3	0.0	0.3				6.5	0.1	0.0	3.1	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	2.4				7.6	3.2	0.0	0.2	4.8	5.2
LnGrp Delay(d),s/veh	26.9	0.0	21.0				27.5	7.1	0.0	34.1	19.2	20.1
LnGrp LOS	C		C				C	A		C	B	C
Approach Vol, veh/h		376						1471			983	
Approach Delay, s/veh		25.7						12.8			19.7	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.0	41.0		17.6	22.3	23.7		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.4	9.0		11.9	15.8	12.4		
Green Ext Time (p_c), s	0.0	13.3		1.2	2.5	5.8		

Intersection Summary		
HCM 2010 Ctrl Delay		16.9
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	943	191	11	645	71	150	101	23	80	107	307
Future Volume (veh/h)	416	943	191	11	645	71	150	101	23	80	107	307
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	443	1003	194	12	686	69	160	107	15	85	114	68
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	1530	295	88	956	96	372	460	65	381	538	447
Arrive On Green	0.27	0.52	0.48	0.05	0.29	0.26	0.29	0.29	0.27	0.29	0.29	0.29
Sat Flow, veh/h	1774	2958	571	1774	3245	326	1178	1593	223	1242	1863	1547
Grp Volume(v), veh/h	443	599	598	12	374	381	160	0	122	85	114	68
Grp Sat Flow(s),veh/h/ln	1774	1770	1759	1774	1770	1802	1178	0	1817	1242	1863	1547
Q Serve(g_s), s	20.2	20.6	20.9	0.5	15.7	15.8	9.9	0.0	4.3	4.7	3.9	2.7
Cycle Q Clear(g_c), s	20.2	20.6	20.9	0.5	15.7	15.8	13.8	0.0	4.3	8.9	3.9	2.7
Prop In Lane	1.00		0.32	1.00		0.18	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	483	915	910	88	521	531	372	0	525	381	538	447
V/C Ratio(X)	0.92	0.65	0.66	0.14	0.72	0.72	0.43	0.00	0.23	0.22	0.21	0.15
Avail Cap(c_a), veh/h	483	915	910	483	801	815	577	0	842	598	863	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	14.7	15.1	37.9	26.3	26.5	27.7	0.0	22.7	26.0	22.4	22.0
Incr Delay (d2), s/veh	22.3	1.7	1.7	0.7	1.9	1.8	0.8	0.0	0.2	0.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	10.4	10.5	0.3	8.0	8.1	3.3	0.0	2.2	1.6	2.0	1.2
LnGrp Delay(d),s/veh	51.7	16.4	16.8	38.6	28.1	28.4	28.5	0.0	22.9	26.3	22.6	22.2
LnGrp LOS	D	B	B	D	C	C	C		C	C	C	C
Approach Vol, veh/h		1640			767			282			267	
Approach Delay, s/veh		26.1			28.4			26.0			23.7	
Approach LOS		C			C			C			C	
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	47.1		28.1	26.7	28.6		28.1				
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6				
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0				
Max Q Clear Time (g_c+I1), s	12.5	22.9		10.9	22.2	17.8		15.8				
Green Ext Time (p_c), s	0.0	8.4		2.5	0.0	4.0		2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			26.5									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	189	95	248	143	76	60	550	303	166	667	195
Future Volume (veh/h)	207	189	95	248	143	76	60	550	303	166	667	195
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	218	199	51	261	151	22	63	579	264	175	702	109
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	303	420	105	351	615	88	116	789	359	208	1366	609
Arrive On Green	0.17	0.15	0.17	0.20	0.20	0.18	0.07	0.34	0.32	0.12	0.40	0.40
Sat Flow, veh/h	1774	2806	702	1774	3108	446	1723	2298	1046	1723	3438	1532
Grp Volume(v), veh/h	218	124	126	261	85	88	63	433	410	175	702	109
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1770	1784	1723	1719	1625	1723	1719	1532
Q Serve(g_s), s	11.1	6.1	6.3	13.2	3.9	4.0	3.4	21.2	21.4	9.5	14.8	4.4
Cycle Q Clear(g_c), s	11.1	6.1	6.3	13.2	3.9	4.0	3.4	21.2	21.4	9.5	14.8	4.4
Prop In Lane	1.00		0.40	1.00		0.25	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	303	265	260	351	350	353	116	591	558	208	1366	609
V/C Ratio(X)	0.72	0.47	0.48	0.74	0.24	0.25	0.54	0.73	0.73	0.84	0.51	0.18
Avail Cap(c_a), veh/h	426	388	381	686	684	690	288	682	645	288	1366	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	37.2	36.9	36.1	32.4	32.6	43.2	27.6	28.2	41.2	21.8	18.7
Incr Delay (d2), s/veh	3.5	1.3	1.4	3.1	0.4	0.4	3.9	3.5	3.7	14.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	3.1	3.1	6.8	1.9	2.0	1.7	10.6	10.1	5.4	7.1	1.9
LnGrp Delay(d),s/veh	41.0	38.5	38.3	39.3	32.7	33.0	47.2	31.0	31.9	55.7	22.2	18.9
LnGrp LOS	D	D	D	D	C	C	D	C	C	E	C	B
Approach Vol, veh/h		468			434			906			986	
Approach Delay, s/veh		39.6			36.7			32.6			27.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	42.0		22.9	15.6	36.9		20.3
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	15.4	16.8		15.2	11.5	23.4		13.1
Green Ext Time (p_c), s	0.1	9.8		1.7	0.2	7.5		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1518	364	0	1150	116	0	0	0	402	0	339
Future Volume (veh/h)	0	1518	364	0	1150	116	0	0	0	402	0	339
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1598	0	0	1211	0				423	0	336
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2062	923	0	2062	0				935	0	430
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1598	0	0	1211	0				423	0	336
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	21.6	0.0	0.0	13.5	0.0				6.4	0.0	12.2
Cycle Q Clear(g_c), s	0.0	21.6	0.0	0.0	13.5	0.0				6.4	0.0	12.2
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2062	923	0	2062	0				935	0	430
V/C Ratio(X)	0.00	0.77	0.00	0.00	0.59	0.00				0.45	0.00	0.78
Avail Cap(c_a), veh/h	0	2271	1016	0	2271	0				2245	0	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.3	0.0	0.0	7.7	0.0				18.8	0.0	21.0
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.0	0.2	0.0				0.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.4	0.0	0.0	6.4	0.0				3.0	0.0	5.6
LnGrp Delay(d),s/veh	0.0	10.7	0.0	0.0	7.9	0.0				19.1	0.0	23.3
LnGrp LOS		B			A					B		C
Approach Vol, veh/h		1598			1211						759	
Approach Delay, s/veh		10.7			7.9						20.9	
Approach LOS		B			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.3		20.9		41.3		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		40.0		40.0		40.0		
Max Q Clear Time (g_c+I1), s		23.6		14.2		15.5		
Green Ext Time (p_c), s		12.6		2.1		17.1		

Intersection Summary		
HCM 2010 Ctrl Delay		11.9
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1460	439	0	886	253	361	0	348	0	0	0
Future Volume (vph)	0	1460	439	0	886	253	361	0	348	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.98		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1504		3304		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1504		3304		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1553	467	0	943	269	384	0	370	0	0	0
RTOR Reduction (vph)	0	0	159	0	30	0	0	0	53	0	0	0
Lane Group Flow (vph)	0	1553	308	0	1182	0	192	192	317	0	0	0
Confl. Peds. (#/hr)			1			3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		56.0	56.0		56.0		20.0	20.0	20.0			
Effective Green, g (s)		56.6	56.0		56.6		20.2	20.2	20.2			
Actuated g/C Ratio		0.67	0.66		0.67		0.24	0.24	0.24			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2294	993		2205		400	400	377			
v/s Ratio Prot		c0.45			0.36		0.11	0.11				
v/s Ratio Perm			0.21						c0.20			
v/c Ratio		0.68	0.31		0.54		0.48	0.48	0.84			
Uniform Delay, d1		8.6	6.2		7.3		27.8	27.8	30.8			
Progression Factor		1.00	1.00		0.46		1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.2		0.2		0.3	0.3	15.0			
Delay (s)		9.4	6.3		3.6		28.1	28.1	45.7			
Level of Service		A	A		A		C	C	D			
Approach Delay (s)		8.7			3.6			36.8			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	13.4
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	709	119	153	521	175	143	919	199	264	839	152
Future Volume (veh/h)	224	709	119	153	521	175	143	919	199	264	839	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	229	723	110	156	532	149	146	938	87	269	856	138
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	186	827	126	221	789	220	251	965	430	680	1752	281
Arrive On Green	0.11	0.28	0.26	0.13	0.30	0.28	0.07	0.27	0.27	0.20	0.40	0.38
Sat Flow, veh/h	1723	2988	454	1723	2655	740	3442	3539	1578	3442	4411	707
Grp Volume(v), veh/h	229	416	417	156	344	337	146	938	87	269	657	337
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1676	1721	1770	1578	1721	1695	1728
Q Serve(g_s), s	13.8	29.5	29.6	11.1	22.5	22.8	5.3	33.6	5.4	8.7	18.5	18.8
Cycle Q Clear(g_c), s	13.8	29.5	29.6	11.1	22.5	22.8	5.3	33.6	5.4	8.7	18.5	18.8
Prop In Lane	1.00		0.26	1.00		0.44	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	186	476	477	221	511	498	251	965	430	680	1346	686
V/C Ratio(X)	1.23	0.87	0.87	0.71	0.67	0.68	0.58	0.97	0.20	0.40	0.49	0.49
Avail Cap(c_a), veh/h	186	525	527	350	689	672	320	965	430	680	1346	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	44.1	44.4	53.5	39.5	40.0	57.4	46.1	35.8	44.7	28.9	29.3
Incr Delay (d2), s/veh	142.4	13.1	13.2	1.6	0.6	0.6	0.8	23.0	1.1	0.1	1.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	15.7	15.8	5.4	10.8	10.6	2.5	19.5	2.5	4.2	8.9	9.4
LnGrp Delay(d),s/veh	199.5	57.3	57.6	55.1	40.1	40.7	58.2	69.0	36.9	44.9	30.1	31.8
LnGrp LOS	F	E	E	E	D	D	E	E	D	D	C	C
Approach Vol, veh/h		1062			837			1171			1263	
Approach Delay, s/veh		88.1			43.1			65.3			33.7	
Approach LOS		F			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.3	38.9	20.4	39.4	13.3	54.8	17.8	42.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	32.8	23.9	37.0	9.8	32.9	11.7	49.2
Max Q Clear Time (g_c+I1), s	10.7	35.6	13.1	31.6	7.3	20.8	15.8	24.8
Green Ext Time (p_c), s	0.0	0.0	1.2	1.1	0.0	2.3	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	57.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	862	72	614	647	447	88	859	769	406	688	63
Future Volume (veh/h)	100	862	72	614	647	447	88	859	769	406	688	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	105	907	0	646	681	0	93	904	776	427	724	62
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	142	884	396	639	1270	568	136	1040	1353	512	1207	103
Arrive On Green	0.08	0.26	0.00	0.19	0.37	0.00	0.08	0.29	0.29	0.15	0.37	0.35
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2758	3442	3296	282
Grp Volume(v), veh/h	105	907	0	646	681	0	93	904	776	427	389	397
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1808
Q Serve(g_s), s	9.0	39.0	0.0	29.0	23.6	0.0	7.7	36.7	30.4	18.3	27.0	27.1
Cycle Q Clear(g_c), s	9.0	39.0	0.0	29.0	23.6	0.0	7.7	36.7	30.4	18.3	27.0	27.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	142	884	396	639	1270	568	136	1040	1353	512	648	662
V/C Ratio(X)	0.74	1.03	0.00	1.01	0.54	0.00	0.68	0.87	0.57	0.83	0.60	0.60
Avail Cap(c_a), veh/h	301	884	396	639	1270	568	257	1109	1406	567	648	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.0	56.3	0.0	61.3	37.6	0.0	68.2	50.8	27.6	62.7	39.0	39.2
Incr Delay (d2), s/veh	2.8	36.9	0.0	38.1	0.4	0.0	2.3	7.1	0.4	8.6	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	23.0	0.0	16.7	11.3	0.0	3.9	19.0	11.6	9.3	13.4	13.8
LnGrp Delay(d),s/veh	70.8	93.3	0.0	99.5	38.0	0.0	70.5	57.8	28.0	71.4	40.4	40.6
LnGrp LOS	E	F		F	D		E	E	C	E	D	D
Approach Vol, veh/h		1012			1327			1773			1213	
Approach Delay, s/veh		90.9			67.9			45.5			51.3	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.6	48.6	33.0	43.5	15.6	59.5	16.5	60.0
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	23.0	45.0	27.0	* 37	20.0	46.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	20.3	38.7	31.0	41.0	9.7	29.1	11.0	25.6
Green Ext Time (p_c), s	0.3	3.3	0.0	0.0	0.1	10.6	0.1	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	61.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1276	778	747	377	271	917
Future Volume (veh/h)	1276	778	747	377	271	917
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	1343	819	786	0	285	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1451	2762	1139	510	416	191
Arrive On Green	0.43	0.80	0.33	0.00	0.12	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	1343	819	786	0	285	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	40.1	6.5	20.9	0.0	8.4	0.0
Cycle Q Clear(g_c), s	40.1	6.5	20.9	0.0	8.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1451	2762	1139	510	416	191
V/C Ratio(X)	0.93	0.30	0.69	0.00	0.69	0.00
Avail Cap(c_a), veh/h	1490	3031	1369	612	1028	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	2.7	30.6	0.0	44.4	0.0
Incr Delay (d2), s/veh	10.0	0.1	1.2	0.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	3.0	10.1	0.0	4.1	0.0
LnGrp Delay(d),s/veh	38.3	2.7	31.7	0.0	46.5	0.0
LnGrp LOS	D	A	C		D	
Approach Vol, veh/h		2162	786		285	
Approach Delay, s/veh		24.8	31.7		46.5	
Approach LOS		C	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		88.7		16.7	49.8	39.0		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		8.5		10.4	42.1	22.9		
Green Ext Time (p_c), s		17.9		0.9	1.7	10.1		

Intersection Summary		
HCM 2010 Ctrl Delay		28.4
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	186.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	499	298	94	439	376	22
Future Vol, veh/h	499	298	94	439	376	22
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	525	314	99	462	396	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	847	0	1350	690
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	660	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	777	-	~ 166	445
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	777	-	~ 144	442
Mov Cap-2 Maneuver	-	-	-	-	~ 144	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	$ 807.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	144	442	-	-	777	-
HCM Lane V/C Ratio	2.749	0.052	-	-	0.127	-
HCM Control Delay (s)	$ 854.4	13.6	-	-	10.3	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	35.6	0.2	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	192	0	50	0	0	0	80	52	0	0	41	295
Future Vol, veh/h	192	0	50	0	0	0	80	52	0	0	41	295
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	213	0	56	0	0	0	89	58	0	0	46	328

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	445	445	209	473	609	58	373	0	0	58	0	0
Stage 1	209	209	-	236	236	-	-	-	-	-	-	-
Stage 2	236	236	-	237	373	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	523	508	831	501	410	1008	1185	-	-	1546	-	-
Stage 1	793	729	-	767	710	-	-	-	-	-	-	-
Stage 2	767	710	-	766	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	492	468	831	440	378	1008	1185	-	-	1546	-	-
Mov Cap-2 Maneuver	492	468	-	440	378	-	-	-	-	-	-	-
Stage 1	731	729	-	707	655	-	-	-	-	-	-	-
Stage 2	707	655	-	715	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	0	5	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1185	-	-	537	-	1546	-	-
HCM Lane V/C Ratio	0.075	-	-	0.501	-	-	-	-
HCM Control Delay (s)	8.3	0	-	18.2	0	0	-	-
HCM Lane LOS	A	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.8	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	45	168	567	97	89	312	1031	670	97	1011	25
Future Volume (veh/h)	27	45	168	567	97	89	312	1031	670	97	1011	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	29	49	15	616	105	22	339	1121	362	105	1099	25
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	136	112	754	408	342	549	1759	756	152	1398	32
Arrive On Green	0.07	0.07	0.07	0.22	0.22	0.22	0.31	0.50	0.50	0.09	0.27	0.26
Sat Flow, veh/h	1774	1863	1538	3442	1863	1562	1774	3539	1520	1774	5114	116
Grp Volume(v), veh/h	29	49	15	616	105	22	339	1121	362	105	728	396
Grp Sat Flow(s),veh/h/ln	1774	1863	1538	1721	1863	1562	1774	1770	1520	1774	1695	1840
Q Serve(g_s), s	2.0	3.2	1.2	21.8	6.0	1.4	20.9	29.8	20.1	7.4	25.4	25.5
Cycle Q Clear(g_c), s	2.0	3.2	1.2	21.8	6.0	1.4	20.9	29.8	20.1	7.4	25.4	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	129	136	112	754	408	342	549	1759	756	152	927	503
V/C Ratio(X)	0.22	0.36	0.13	0.82	0.26	0.06	0.62	0.64	0.48	0.69	0.79	0.79
Avail Cap(c_a), veh/h	402	422	348	995	538	451	549	1759	756	152	927	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	56.5	55.6	47.5	41.3	39.6	37.7	23.7	21.2	56.8	43.0	43.1
Incr Delay (d2), s/veh	0.3	0.6	0.2	3.1	0.1	0.0	1.5	1.8	2.2	10.4	6.7	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.5	10.7	3.1	0.6	10.5	14.9	8.9	4.1	12.8	14.6
LnGrp Delay(d),s/veh	56.3	57.1	55.8	50.6	41.5	39.6	39.3	25.5	23.4	67.2	49.7	54.8
LnGrp LOS	E	E	E	D	D	D	D	C	C	E	D	D
Approach Vol, veh/h		93			743			1822			1229	
Approach Delay, s/veh		56.6			49.0			27.6			52.8	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	67.6		13.3	43.6	39.0		32.1
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	8.9	32.9		34.9
Max Q Clear Time (g_c+I1), s	9.4	31.8		5.2	22.9	27.5		23.8
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	1.6		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		40.4
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	13	68	5	15	12	169	1443	8	10	909	415
Future Volume (veh/h)	328	13	68	5	15	12	169	1443	8	10	909	415
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	357	14	22	5	16	6	184	1568	9	11	988	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	6	573	42	118	34	257	1739	10	62	1318	0
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.34	0.14	0.48	0.46	0.04	0.37	0.00
Sat Flow, veh/h	388	15	1573	0	324	92	1774	3608	21	1774	3632	0
Grp Volume(v), veh/h	371	0	22	27	0	0	184	769	808	11	988	0
Grp Sat Flow(s),veh/h/ln	404	0	1573	416	0	0	1774	1770	1859	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.9	0.0	0.0	0.0	10.0	40.4	40.4	0.6	24.7	0.0
Cycle Q Clear(g_c), s	37.0	0.0	0.9	37.0	0.0	0.0	10.0	40.4	40.4	0.6	24.7	0.0
Prop In Lane	0.96		1.00	0.19		0.22	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	217	0	573	194	0	0	257	853	896	62	1318	0
V/C Ratio(X)	1.71	0.00	0.04	0.14	0.00	0.00	0.72	0.90	0.90	0.18	0.75	0.00
Avail Cap(c_a), veh/h	217	0	573	194	0	0	568	853	896	568	1657	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.2	0.0	20.8	24.9	0.0	0.0	41.4	24.1	24.1	47.5	27.7	0.0
Incr Delay (d2), s/veh	339.0	0.0	0.0	0.1	0.0	0.0	1.4	12.3	11.9	0.5	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.4	0.0	0.4	0.5	0.0	0.0	5.0	22.6	23.6	0.3	12.1	0.0
LnGrp Delay(d),s/veh	377.2	0.0	20.8	25.0	0.0	0.0	42.8	36.4	36.0	48.0	28.8	0.0
LnGrp LOS	F		C	C			D	D	D	D	C	
Approach Vol, veh/h		393			27			1761			999	
Approach Delay, s/veh		357.3			25.0			36.9			29.0	
Approach LOS		F			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	52.9		41.0	18.7	41.8		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	2.6	42.4		39.0	12.0	26.7		39.0
Green Ext Time (p_c), s	0.0	2.2		0.0	0.2	8.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	720	138	41	497	236	160	480	59	319	340	330
Future Volume (veh/h)	349	720	138	41	497	236	160	480	59	319	340	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	371	766	138	44	529	68	170	511	16	339	362	155
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	474	1183	213	57	1051	449	209	876	388	438	491	412
Arrive On Green	0.14	0.41	0.40	0.03	0.30	0.30	0.12	0.25	0.25	0.13	0.27	0.27
Sat Flow, veh/h	3343	2910	524	1774	3539	1511	1774	3539	1568	3343	1810	1518
Grp Volume(v), veh/h	371	453	451	44	529	68	170	511	16	339	362	155
Grp Sat Flow(s),veh/h/ln	1672	1719	1715	1774	1770	1511	1774	1770	1568	1672	1810	1518
Q Serve(g_s), s	10.0	19.7	19.7	2.3	11.5	3.1	8.7	11.8	0.7	9.1	16.9	7.7
Cycle Q Clear(g_c), s	10.0	19.7	19.7	2.3	11.5	3.1	8.7	11.8	0.7	9.1	16.9	7.7
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	699	697	57	1051	449	209	876	388	438	491	412
V/C Ratio(X)	0.78	0.65	0.65	0.78	0.50	0.15	0.81	0.58	0.04	0.77	0.74	0.38
Avail Cap(c_a), veh/h	1079	699	697	572	1389	593	572	1180	523	1079	603	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	22.2	22.3	44.7	27.0	24.1	40.0	30.8	26.6	39.1	30.8	27.5
Incr Delay (d2), s/veh	2.9	2.1	2.1	20.0	0.4	0.2	7.5	0.6	0.0	3.0	3.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.7	9.7	1.4	5.6	1.3	4.7	5.8	0.3	4.4	9.0	3.3
LnGrp Delay(d),s/veh	41.4	24.3	24.4	64.7	27.4	24.2	47.5	31.4	26.6	42.0	34.6	28.0
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1275			641			697			856	
Approach Delay, s/veh		29.3			29.6			35.2			36.3	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	41.8	15.0	29.2	17.2	31.6	16.2	28.0
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	4.3	21.7	10.7	18.9	12.0	13.5	11.1	13.8
Green Ext Time (p_c), s	0.1	7.9	0.4	4.3	1.2	8.2	1.1	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	13.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	458	196	292	102	41	410
Future Vol, veh/h	458	196	292	102	41	410
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	509	218	324	113	46	456

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	438	0	-	0	1617	381
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	1236	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1122	-	-	-	112	660
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	270	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1122	-	-	-	61	660
Mov Cap-2 Maneuver	-	-	-	-	61	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	148	-

Approach	EB	WB	SB
HCM Control Delay, s	7.6	0	34.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1122	-	-	-	61	660
HCM Lane V/C Ratio	0.454	-	-	-	0.747	0.69
HCM Control Delay (s)	10.8	-	-	-	159	21.7
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	2.4	-	-	-	3.3	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	287	14	81	322	55	3	453	101	13	351	190
Future Volume (veh/h)	351	287	14	81	322	55	3	453	101	13	351	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	373	305	5	86	343	46	3	482	35	14	373	66
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	436	652	554	159	608	81	51	601	500	82	634	538
Arrive On Green	0.25	0.36	0.36	0.09	0.20	0.18	0.03	0.32	0.32	0.05	0.34	0.34
Sat Flow, veh/h	1723	1810	1538	1723	3043	404	1774	1863	1548	1774	1863	1582
Grp Volume(v), veh/h	373	305	5	86	192	197	3	482	35	14	373	66
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1728	1774	1863	1548	1774	1863	1582
Q Serve(g_s), s	18.5	11.6	0.2	4.3	9.1	9.3	0.1	21.2	1.4	0.7	14.8	2.6
Cycle Q Clear(g_c), s	18.5	11.6	0.2	4.3	9.1	9.3	0.1	21.2	1.4	0.7	14.8	2.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	436	652	554	159	344	345	51	601	500	82	634	538
V/C Ratio(X)	0.86	0.47	0.01	0.54	0.56	0.57	0.06	0.80	0.07	0.17	0.59	0.12
Avail Cap(c_a), veh/h	443	849	721	290	653	656	245	708	588	239	708	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	22.1	18.4	38.9	32.4	32.7	42.4	27.8	21.1	41.1	24.4	20.4
Incr Delay (d2), s/veh	15.0	0.5	0.0	2.8	1.4	1.5	0.5	5.7	0.1	1.0	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	5.9	0.1	2.2	4.4	4.6	0.1	11.8	0.6	0.4	7.7	1.1
LnGrp Delay(d),s/veh	47.0	22.6	18.4	41.8	33.8	34.1	42.9	33.5	21.1	42.1	25.5	20.5
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		683			475			520			453	
Approach Delay, s/veh		35.9			35.4			32.7			25.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.4	6.6	34.5	26.7	21.9	8.2	33.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0
Max Q Clear Time (g_c+I1), s	6.3	13.6	2.1	16.8	20.5	11.3	2.7	23.2
Green Ext Time (p_c), s	0.1	4.3	0.0	5.0	0.1	4.0	0.0	3.7

Intersection Summary			
HCM 2010 Ctrl Delay			32.7
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	677	101	154	518	67	277	247	299	56	153	43
Future Volume (veh/h)	53	677	101	154	518	67	277	247	299	56	153	43
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.95	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	55	705	95	160	540	63	289	257	115	58	159	37
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	89	1161	156	212	1399	163	416	683	573	342	535	124
Arrive On Green	0.05	0.38	0.36	0.12	0.45	0.43	0.37	0.37	0.37	0.37	0.37	0.36
Sat Flow, veh/h	1723	3040	409	1723	3087	359	1173	1863	1564	1000	1458	339
Grp Volume(v), veh/h	55	398	402	160	300	303	289	257	115	58	0	196
Grp Sat Flow(s),veh/h/ln	1723	1719	1731	1723	1719	1726	1173	1863	1564	1000	0	1798
Q Serve(g_s), s	2.9	17.4	17.5	8.4	10.8	10.9	21.7	9.5	4.7	4.2	0.0	7.2
Cycle Q Clear(g_c), s	2.9	17.4	17.5	8.4	10.8	10.9	28.9	9.5	4.7	13.7	0.0	7.2
Prop In Lane	1.00		0.24	1.00		0.21	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	89	656	661	212	779	782	416	683	573	342	0	659
V/C Ratio(X)	0.62	0.61	0.61	0.75	0.38	0.39	0.69	0.38	0.20	0.17	0.00	0.30
Avail Cap(c_a), veh/h	573	774	779	388	779	782	502	819	687	342	0	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	23.2	23.4	39.5	16.9	17.1	31.3	21.7	20.2	26.7	0.0	21.1
Incr Delay (d2), s/veh	6.8	2.0	2.0	5.4	0.7	0.7	3.2	0.3	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.6	8.7	4.3	5.2	5.3	7.4	4.9	2.0	1.2	0.0	3.6
LnGrp Delay(d),s/veh	50.1	25.2	25.4	44.9	17.6	17.7	34.5	22.0	20.4	27.0	0.0	21.3
LnGrp LOS	D	C	C	D	B	B	C	C	C	C		C
Approach Vol, veh/h		855			763			661			254	
Approach Delay, s/veh		26.9			23.4			27.2			22.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	39.6		38.2	8.8	46.3		38.2
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.4	19.5		15.7	4.9	12.9		30.9
Green Ext Time (p_c), s	0.3	14.1		3.9	0.1	17.5		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	985	55	100	574	138	38	117	238	200	132	40
Future Volume (veh/h)	23	985	55	100	574	138	38	117	238	200	132	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	25	1059	57	108	617	87	41	126	34	215	142	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1347	72	164	1601	711	334	350	278	289	303	258
Arrive On Green	0.04	0.40	0.37	0.09	0.45	0.45	0.19	0.19	0.19	0.16	0.16	0.00
Sat Flow, veh/h	1774	3409	183	1774	3539	1572	1774	1863	1480	1774	1863	1583
Grp Volume(v), veh/h	25	550	566	108	617	87	41	126	34	215	142	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1774	1770	1572	1774	1863	1480	1774	1863	1583
Q Serve(g_s), s	1.4	27.0	27.1	5.8	11.5	3.2	1.9	5.8	1.9	11.4	6.8	0.0
Cycle Q Clear(g_c), s	1.4	27.0	27.1	5.8	11.5	3.2	1.9	5.8	1.9	11.4	6.8	0.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	699	720	164	1601	711	334	350	278	289	303	258
V/C Ratio(X)	0.40	0.79	0.79	0.66	0.39	0.12	0.12	0.36	0.12	0.74	0.47	0.00
Avail Cap(c_a), veh/h	564	750	772	564	1601	711	564	592	470	385	404	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	26.3	26.4	43.5	18.0	15.7	33.4	35.0	33.4	39.5	37.6	0.0
Incr Delay (d2), s/veh	4.1	6.3	6.2	4.4	0.3	0.2	0.2	0.6	0.2	5.3	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	14.4	14.8	3.1	5.6	1.4	0.9	3.1	0.8	6.0	3.6	0.0
LnGrp Delay(d),s/veh	50.9	32.6	32.6	47.9	18.3	15.9	33.6	35.7	33.6	44.9	38.7	0.0
LnGrp LOS	D	C	C	D	B	B	C	D	C	D	D	
Approach Vol, veh/h		1141			812			201			357	
Approach Delay, s/veh		33.0			22.0			34.9			42.4	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	43.2		20.1	7.5	48.8		22.6
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	7.8	29.1		13.4	3.4	13.5		7.8
Green Ext Time (p_c), s	0.2	8.1		0.8	0.0	21.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	114	40	151	146	10	18	567	256	0	282	241
Future Volume (veh/h)	355	114	40	151	146	10	18	567	256	0	282	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	359	115	14	153	147	0	18	573	208	0	285	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	423	945	113	206	325	277	438	792	287	0	1102	0
Arrive On Green	0.24	0.30	0.30	0.12	0.17	0.00	0.31	0.31	0.31	0.00	0.31	0.00
Sat Flow, veh/h	1774	3178	381	1774	1863	1583	1087	2544	921	0	3725	0
Grp Volume(v), veh/h	359	63	66	153	147	0	18	398	383	0	285	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1789	1774	1863	1583	1087	1770	1696	0	1770	0
Q Serve(g_s), s	8.4	1.1	1.2	3.6	3.1	0.0	0.5	8.7	8.8	0.0	2.6	0.0
Cycle Q Clear(g_c), s	8.4	1.1	1.2	3.6	3.1	0.0	3.2	8.7	8.8	0.0	2.6	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.54	0.00		0.00
Lane Grp Cap(c), veh/h	423	526	532	206	325	277	438	551	528	0	1102	0
V/C Ratio(X)	0.85	0.12	0.12	0.74	0.45	0.00	0.04	0.72	0.73	0.00	0.26	0.00
Avail Cap(c_a), veh/h	814	1218	1231	1221	1410	1198	872	1258	1206	0	2516	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.8	11.2	11.2	18.6	16.1	0.0	12.4	13.3	13.4	0.0	11.2	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	2.0	0.4	0.0	0.0	0.7	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.5	0.6	1.9	1.6	0.0	0.2	4.3	4.1	0.0	1.3	0.0
LnGrp Delay(d),s/veh	17.7	11.2	11.2	20.6	16.5	0.0	12.4	14.0	14.1	0.0	11.3	0.0
LnGrp LOS	B	B	B	C	B		B	B	B		B	
Approach Vol, veh/h		488			300			799			285	
Approach Delay, s/veh		16.0			18.6			14.0			11.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	17.0		17.6	14.4	11.6		17.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	5.6	3.2		4.6	10.4	5.1		10.8
Green Ext Time (p_c), s	0.1	0.5		2.4	0.1	0.5		2.4

Intersection Summary

HCM 2010 Ctrl Delay 14.8
HCM 2010 LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	290	64	239	232	17	144	808	624	31	421	261
Future Volume (veh/h)	300	290	64	239	232	17	144	808	624	31	421	261
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	312	302	49	249	242	3	150	842	340	32	439	99
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	246	602	97	246	699	313	205	1413	620	88	1179	523
Arrive On Green	0.14	0.20	0.18	0.14	0.20	0.20	0.12	0.41	0.41	0.05	0.34	0.34
Sat Flow, veh/h	1774	3050	489	1774	3539	1583	1723	3438	1508	1723	3438	1525
Grp Volume(v), veh/h	312	174	177	249	242	3	150	842	340	32	439	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1774	1770	1583	1723	1719	1508	1723	1719	1525
Q Serve(g_s), s	11.0	6.9	7.1	11.0	4.7	0.1	6.7	15.1	13.6	1.4	7.6	3.6
Cycle Q Clear(g_c), s	11.0	6.9	7.1	11.0	4.7	0.1	6.7	15.1	13.6	1.4	7.6	3.6
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	349	349	246	699	313	205	1413	620	88	1179	523
V/C Ratio(X)	1.27	0.50	0.51	1.01	0.35	0.01	0.73	0.60	0.55	0.36	0.37	0.19
Avail Cap(c_a), veh/h	246	859	859	246	1719	769	348	1800	789	348	1800	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	28.3	28.6	34.1	27.4	25.6	33.7	18.2	17.7	36.4	19.6	18.3
Incr Delay (d2), s/veh	148.4	1.1	1.1	60.3	0.3	0.0	1.9	0.4	0.8	0.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	3.5	3.6	9.5	2.3	0.1	3.3	7.2	5.8	0.7	3.7	1.6
LnGrp Delay(d),s/veh	182.5	29.4	29.7	94.5	27.7	25.6	35.6	18.6	18.5	37.3	20.0	18.7
LnGrp LOS	F	C	C	F	C	C	D	B	B	D	C	B
Approach Vol, veh/h		663			494			1332			570	
Approach Delay, s/veh		101.5			61.4			20.5			20.8	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	36.6	15.0	19.6	13.4	31.2	15.0	19.6
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	13.4	17.1	13.0	9.1	8.7	9.6	13.0	6.7
Green Ext Time (p_c), s	0.0	13.6	0.0	3.7	0.1	16.0	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	44.7
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	230	0	10	0	0	0	10	269	0	0	72	88
Future Vol, veh/h	230	0	10	0	0	0	10	269	0	0	72	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	258	0	11	0	0	0	11	302	0	0	81	99
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.9	0	10.3	8.9
HCM LOS	B	-	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	0%	96%	0%	0%	0%
Vol Thru, %	90%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	4%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	179	240	0	72	88
LT Vol	10	0	230	0	0	0
Through Vol	90	179	0	0	72	0
RT Vol	0	0	10	0	0	88
Lane Flow Rate	112	201	270	0	81	99
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.172	0.306	0.397	0	0.128	0.137
Departure Headway (Hd)	5.516	5.465	5.298	5.65	5.682	4.973
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	645	653	674	0	625	713
Service Time	3.296	3.246	3.372	3.65	3.472	2.763
HCM Lane V/C Ratio	0.174	0.308	0.401	0	0.13	0.139
HCM Control Delay	9.5	10.7	11.9	8.7	9.3	8.6
HCM Lane LOS	A	B	B	N	A	A
HCM 95th-tile Q	0.6	1.3	1.9	0	0.4	0.5

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	535	8	10	11	3	187
Future Vol, veh/h	535	8	10	11	3	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	637	10	12	13	4	223

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	41	2	4	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	37	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	960	1072	1617	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	953	1072	1617	-	-	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	3.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1617	-	953	1072	-	-
HCM Lane V/C Ratio	0.007	-	0.668	0.009	-	-
HCM Control Delay (s)	7.2	0	16	8.4	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	5.3	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	684	94	155	444	62	183	700	252	71	446	210
Future Volume (veh/h)	305	684	94	155	444	62	183	700	252	71	446	210
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	311	698	91	157	453	15	187	714	208	72	455	187
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	366	990	129	210	809	355	239	1246	552	114	689	281
Arrive On Green	0.21	0.32	0.30	0.12	0.23	0.23	0.14	0.36	0.36	0.07	0.29	0.28
Sat Flow, veh/h	1774	3128	407	1774	3539	1554	1723	3438	1524	1723	2376	968
Grp Volume(v), veh/h	311	395	394	157	453	15	187	714	208	72	328	314
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1554	1723	1719	1524	1723	1719	1625
Q Serve(g_s), s	19.8	23.0	23.1	10.0	13.3	0.9	12.3	19.6	11.8	4.8	19.7	20.0
Cycle Q Clear(g_c), s	19.8	23.0	23.1	10.0	13.3	0.9	12.3	19.6	11.8	4.8	19.7	20.0
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	366	560	559	210	809	355	239	1246	552	114	498	471
V/C Ratio(X)	0.85	0.70	0.71	0.75	0.56	0.04	0.78	0.57	0.38	0.63	0.66	0.67
Avail Cap(c_a), veh/h	703	701	700	703	1403	616	683	1363	604	683	681	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	35.3	35.5	50.0	40.0	35.2	48.8	30.1	27.6	53.4	36.6	37.1
Incr Delay (d2), s/veh	5.6	2.4	2.4	5.2	0.6	0.0	5.5	0.5	0.4	5.6	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	11.7	11.7	5.2	6.5	0.4	6.2	9.4	5.0	2.5	9.5	9.2
LnGrp Delay(d),s/veh	50.4	37.6	37.9	55.2	40.6	35.3	54.3	30.6	28.0	58.9	38.0	38.7
LnGrp LOS	D	D	D	E	D	D	D	C	C	E	D	D
Approach Vol, veh/h		1100			625			1109			714	
Approach Delay, s/veh		41.3			44.2			34.1			40.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	41.1	20.3	38.0	28.2	30.8	11.8	46.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	12.0	25.1	14.3	22.0	21.8	15.3	6.8	21.6
Green Ext Time (p_c), s	0.4	8.0	0.5	10.5	0.9	9.3	0.2	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	1366	847	25	34	285
Future Volume (vph)	471	1366	847	25	34	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3423		1770	1583
Flt Permitted	0.15	1.00	1.00		0.95	1.00
Satd. Flow (perm)	267	3438	3423		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	496	1438	892	26	36	300
RTOR Reduction (vph)	0	0	3	0	0	229
Lane Group Flow (vph)	496	1438	915	0	36	71
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	51.4	56.0	29.8		20.0	20.0
Effective Green, g (s)	52.6	56.6	30.4		20.2	20.2
Actuated g/C Ratio	0.62	0.67	0.36		0.24	0.24
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	545	2294	1227		421	377
v/s Ratio Prot	c0.24	0.42	0.27		0.02	
v/s Ratio Perm	c0.33					c0.05
v/c Ratio	0.91	0.63	0.75		0.09	0.19
Uniform Delay, d1	20.6	8.1	23.8		25.1	25.8
Progression Factor	0.86	0.55	1.00		1.00	1.00
Incremental Delay, d2	15.9	0.4	2.5		0.0	0.1
Delay (s)	33.5	4.8	26.3		25.1	25.9
Level of Service	C	A	C		C	C
Approach Delay (s)		12.2	26.3		25.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	12.2
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	300	10	645	308	510	22	482	994	571	458	36
Future Volume (veh/h)	42	300	10	645	308	510	22	482	994	571	458	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	43	309	8	665	318	0	23	497	832	589	472	34
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	82	590	15	757	1208	540	69	955	1361	698	1454	104
Arrive On Green	0.05	0.17	0.16	0.23	0.35	0.00	0.04	0.28	0.28	0.21	0.45	0.43
Sat Flow, veh/h	1774	3525	91	3343	3438	1538	1723	3438	2692	3343	3254	234
Grp Volume(v), veh/h	43	155	162	665	318	0	23	497	832	589	249	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1847	1672	1719	1538	1723	1719	1346	1672	1719	1768
Q Serve(g_s), s	3.3	11.0	11.1	26.5	9.1	0.0	1.8	16.9	30.6	23.4	12.9	13.0
Cycle Q Clear(g_c), s	3.3	11.0	11.1	26.5	9.1	0.0	1.8	16.9	30.6	23.4	12.9	13.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	82	296	309	757	1208	540	69	955	1361	698	768	790
V/C Ratio(X)	0.53	0.52	0.52	0.88	0.26	0.00	0.33	0.52	0.61	0.84	0.32	0.33
Avail Cap(c_a), veh/h	392	685	715	775	1344	601	312	1046	1432	750	768	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	52.5	52.5	51.6	32.0	0.0	64.5	42.1	24.6	52.5	24.7	24.8
Incr Delay (d2), s/veh	2.0	3.0	2.9	12.0	0.2	0.0	1.0	0.4	0.7	9.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.6	5.9	13.5	4.4	0.0	0.9	8.1	11.5	11.7	6.2	6.4
LnGrp Delay(d),s/veh	66.4	55.5	55.5	63.6	32.3	0.0	65.6	42.5	25.3	61.9	24.9	25.1
LnGrp LOS	E	E	E	E	C		E	D	C	E	C	C
Approach Vol, veh/h		360			983			1352			1095	
Approach Delay, s/veh		56.8			53.4			32.3			44.8	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	27.6	9.5	65.7	10.3	52.5	32.9	42.4
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	28.5	13.1	3.8	15.0	5.3	11.1	25.4	32.6
Green Ext Time (p_c), s	0.7	8.5	0.0	12.8	0.0	8.6	1.5	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	19	258	28	334	33	1218	424	296	619	26
Future Volume (veh/h)	0	0	19	258	28	334	33	1218	424	296	619	26
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				293	0	59	35	1282	0	312	652	25
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				564	0	248	441	1521	646	380	2416	93
Arrive On Green				0.16	0.00	0.16	0.41	0.41	0.00	0.21	0.70	0.70
Sat Flow, veh/h				3548	0	1556	758	3725	1583	1774	3475	133
Grp Volume(v), veh/h				293	0	59	35	1282	0	312	332	345
Grp Sat Flow(s),veh/h/ln				1774	0	1556	758	1863	1583	1774	1770	1839
Q Serve(g_s), s				4.2	0.0	1.8	1.6	17.0	0.0	9.2	3.9	3.9
Cycle Q Clear(g_c), s				4.2	0.0	1.8	1.6	17.0	0.0	9.2	3.9	3.9
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h				564	0	248	441	1521	646	380	1230	1278
V/C Ratio(X)				0.52	0.00	0.24	0.08	0.84	0.00	0.82	0.27	0.27
Avail Cap(c_a), veh/h				2328	0	1021	491	1765	750	517	1230	1278
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				21.1	0.0	20.2	10.1	14.6	0.0	20.6	3.1	3.1
Incr Delay (d2), s/veh				0.3	0.0	0.2	0.0	3.0	0.0	8.9	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.8	0.3	9.4	0.0	5.4	1.9	1.9
LnGrp Delay(d),s/veh				21.4	0.0	20.3	10.1	17.7	0.0	29.4	3.2	3.2
LnGrp LOS				C		C	B	B		C	A	A
Approach Vol, veh/h					352			1317			989	
Approach Delay, s/veh					21.2			17.5			11.5	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.7	26.4				42.1		12.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	11.2	19.0				5.9		6.2
Green Ext Time (p_c), s	0.6	3.2				9.6		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	821	0	0	776	451	456
Future Volume (vph)	821	0	0	776	451	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	933	0	0	882	512	518
RTOR Reduction (vph)	0	0	0	63	0	284
Lane Group Flow (vph)	933	0	0	819	513	234
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	17.1			20.5	20.5	20.5
Effective Green, g (s)	18.1			21.5	21.5	21.5
Actuated g/C Ratio	0.38			0.45	0.45	0.45
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1897			1258	1550	1258
v/s Ratio Prot	c0.19			c0.29	0.15	0.08
v/s Ratio Perm						
v/c Ratio	0.49			0.65	0.33	0.19
Uniform Delay, d1	11.2			10.1	8.4	7.8
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			1.2	0.1	0.1
Delay (s)	11.4			11.4	8.5	7.9
Level of Service	B			B	A	A
Approach Delay (s)		11.4	11.4		8.2	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	443	592	5	57	656	262	34	295	214	227	210	465
Future Volume (veh/h)	443	592	5	57	656	262	34	295	214	227	210	465
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	476	637	5	61	705	0	37	317	160	244	226	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	555	1652	13	85	1194	534	66	474	234	296	608	0
Arrive On Green	0.16	0.46	0.45	0.05	0.35	0.00	0.04	0.21	0.20	0.17	0.34	0.00
Sat Flow, veh/h	3442	3599	28	1723	3438	1538	1774	2296	1134	1723	1810	0
Grp Volume(v), veh/h	476	313	329	61	705	0	37	243	234	244	226	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1858	1723	1719	1538	1774	1770	1661	1723	1810	0
Q Serve(g_s), s	19.1	16.5	16.5	4.9	23.8	0.0	2.9	17.9	18.5	19.3	13.4	0.0
Cycle Q Clear(g_c), s	19.1	16.5	16.5	4.9	23.8	0.0	2.9	17.9	18.5	19.3	13.4	0.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.68	1.00		0.00
Lane Grp Cap(c), veh/h	555	812	853	85	1194	534	66	365	343	296	608	0
V/C Ratio(X)	0.86	0.39	0.39	0.71	0.59	0.00	0.56	0.66	0.68	0.82	0.37	0.00
Avail Cap(c_a), veh/h	1009	1020	1071	252	1477	661	269	761	714	383	906	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.8	25.2	25.2	66.3	37.9	0.0	67.0	51.7	52.2	56.6	35.6	0.0
Incr Delay (d2), s/veh	1.5	1.1	1.0	4.1	1.7	0.0	2.8	7.3	8.4	8.5	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	8.2	8.7	2.5	11.5	0.0	1.5	9.5	9.3	9.9	6.9	0.0
LnGrp Delay(d),s/veh	59.3	26.3	26.2	70.4	39.6	0.0	69.8	59.0	60.6	65.1	37.0	0.0
LnGrp LOS	E	C	C	E	D		E	E	E	E	D	
Approach Vol, veh/h		1118			766			514			470	
Approach Delay, s/veh		40.3			42.1			60.5			51.6	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	69.0	9.3	52.3	26.8	53.2	28.3	33.2
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 26	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	6.9	18.5	4.9	15.4	21.1	25.8	21.3	20.5
Green Ext Time (p_c), s	0.0	32.2	0.0	2.4	0.3	22.5	1.5	7.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	854	0	0	570	198	133	911	66	0	0	0
Future Volume (veh/h)	396	854	0	0	570	198	133	911	66	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	408	880	0	0	588	182	137	939	33			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	492	2134	0	0	1133	350	586	1169	507			
Arrive On Green	0.29	1.00	0.00	0.00	0.43	0.42	0.33	0.33	0.33			
Sat Flow, veh/h	3442	3632	0	0	2748	820	1774	3539	1535			
Grp Volume(v), veh/h	408	880	0	0	392	378	137	939	33			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1704	1774	1770	1535			
Q Serve(g_s), s	13.3	0.0	0.0	0.0	19.5	19.7	6.7	29.0	1.8			
Cycle Q Clear(g_c), s	13.3	0.0	0.0	0.0	19.5	19.7	6.7	29.0	1.8			
Prop In Lane	1.00		0.00	0.00		0.48	1.00		1.00			
Lane Grp Cap(c), veh/h	492	2134	0	0	755	727	586	1169	507			
V/C Ratio(X)	0.83	0.41	0.00	0.00	0.52	0.52	0.23	0.80	0.07			
Avail Cap(c_a), veh/h	924	2134	0	0	755	727	786	1569	681			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.51	0.51	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	41.5	0.0	0.0	0.0	25.3	25.5	29.2	36.6	27.5			
Incr Delay (d2), s/veh	2.3	0.3	0.0	0.0	2.5	2.7	0.2	2.5	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	0.1	0.0	0.0	10.1	9.8	3.4	14.6	0.8			
LnGrp Delay(d),s/veh	43.8	0.3	0.0	0.0	27.9	28.2	29.4	39.1	27.6			
LnGrp LOS	D	A			C	C	C	D	C			
Approach Vol, veh/h		1288			770			1109				
Approach Delay, s/veh		14.1			28.0			37.6				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		76.4			21.2	55.2		43.6
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		57.9			* 32	21.7		53.0
Max Q Clear Time (g_c+I1), s		2.0			15.3	21.7		31.0
Green Ext Time (p_c), s		20.1			1.6	0.0		8.4

Intersection Summary		
HCM 2010 Ctrl Delay		25.7
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1068	24	124	566	0	0	0	0	134	926	341
Future Volume (veh/h)	0	1068	24	124	566	0	0	0	0	134	926	341
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1124	0	131	596	0				141	975	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1568	0	158	2000	0				161	1169	583
Arrive On Green	0.00	0.44	0.00	0.18	1.00	0.00				0.37	0.37	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				436	3175	1583
Grp Volume(v), veh/h	0	1124	0	131	596	0				595	521	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1841	1770	1583
Q Serve(g_s), s	0.0	31.1	0.0	8.5	0.0	0.0				36.2	31.6	0.0
Cycle Q Clear(g_c), s	0.0	31.1	0.0	8.5	0.0	0.0				36.2	31.6	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.24		1.00
Lane Grp Cap(c), veh/h	0	1568	0	158	2000	0				678	652	583
V/C Ratio(X)	0.00	0.72	0.00	0.83	0.30	0.00				0.88	0.80	0.00
Avail Cap(c_a), veh/h	0	1568	0	180	2000	0				755	726	649
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.81	0.81	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	27.3	0.0	48.5	0.0	0.0				35.4	33.9	0.0
Incr Delay (d2), s/veh	0.0	2.8	0.0	21.2	0.3	0.0				11.0	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.8	0.0	5.1	0.1	0.0				20.4	16.6	0.0
LnGrp Delay(d),s/veh	0.0	30.1	0.0	69.7	0.3	0.0				46.4	39.9	0.0
LnGrp LOS		C		E	A					D	D	
Approach Vol, veh/h		1124			727						1116	
Approach Delay, s/veh		30.1			12.8						43.4	
Approach LOS		C			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.7	57.2		48.2		71.8		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 12	45.7		* 49		61.9		
Max Q Clear Time (g_c+I1), s	10.5	33.1		38.2		2.0		
Green Ext Time (p_c), s	0.1	9.3		5.7		23.4		

Intersection Summary		
HCM 2010 Ctrl Delay		30.9
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	365	195	574	417	87	240	662	486	117	684	159
Future Volume (veh/h)	325	365	195	574	417	87	240	662	486	117	684	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	353	397	48	624	453	80	261	720	217	127	743	158
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	437	592	265	682	716	126	295	1325	592	170	879	187
Arrive On Green	0.13	0.17	0.17	0.20	0.25	0.23	0.17	0.37	0.37	0.10	0.30	0.29
Sat Flow, veh/h	3343	3438	1538	3343	2918	512	1774	3539	1582	1774	2895	616
Grp Volume(v), veh/h	353	397	48	624	266	267	261	720	217	127	454	447
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1711	1774	1770	1582	1774	1770	1741
Q Serve(g_s), s	10.7	11.2	2.8	19.0	14.3	14.6	15.0	16.6	10.3	7.3	25.0	25.0
Cycle Q Clear(g_c), s	10.7	11.2	2.8	19.0	14.3	14.6	15.0	16.6	10.3	7.3	25.0	25.0
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	437	592	265	682	422	420	295	1325	592	170	537	529
V/C Ratio(X)	0.81	0.67	0.18	0.92	0.63	0.64	0.88	0.54	0.37	0.75	0.84	0.85
Avail Cap(c_a), veh/h	810	1068	478	682	468	465	362	1371	613	225	550	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	40.3	36.8	40.5	35.0	35.3	42.4	25.5	23.6	45.8	33.9	34.1
Incr Delay (d2), s/veh	2.7	0.5	0.1	16.8	1.5	1.6	17.1	0.4	0.4	5.9	11.4	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	5.4	1.2	10.3	7.0	7.0	8.7	8.2	4.6	3.8	13.9	13.8
LnGrp Delay(d),s/veh	46.6	40.8	36.9	57.3	36.5	36.9	59.5	26.0	24.0	51.8	45.3	45.7
LnGrp LOS	D	D	D	E	D	D	E	C	C	D	D	D
Approach Vol, veh/h		798			1157			1198			1028	
Approach Delay, s/veh		43.1			47.8			32.9			46.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	42.9	25.2	21.9	21.3	35.6	17.6	29.5
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	31.0	* 21	31.0	* 25	27.0
Max Q Clear Time (g_c+I1), s	9.3	18.6	21.0	13.2	17.0	27.0	12.7	16.6
Green Ext Time (p_c), s	0.0	11.7	0.0	3.2	0.2	3.2	0.7	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	431	70	133	515	74	67	452	113	144	725	109
Future Volume (veh/h)	165	431	70	133	515	74	67	452	113	144	725	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	183	479	66	148	572	72	74	502	52	160	806	108
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	242	754	103	198	684	86	181	1539	685	265	2080	277
Arrive On Green	0.14	0.25	0.23	0.11	0.22	0.21	0.05	0.43	0.43	0.08	0.46	0.44
Sat Flow, veh/h	1723	3035	416	1723	3068	385	3442	3539	1575	3442	4532	603
Grp Volume(v), veh/h	183	270	275	148	320	324	74	502	52	160	602	312
Grp Sat Flow(s),veh/h/ln	1723	1719	1732	1723	1719	1734	1721	1770	1575	1721	1695	1745
Q Serve(g_s), s	13.1	18.0	18.2	10.6	22.7	22.9	2.7	12.0	2.5	5.8	14.9	15.2
Cycle Q Clear(g_c), s	13.1	18.0	18.2	10.6	22.7	22.9	2.7	12.0	2.5	5.8	14.9	15.2
Prop In Lane	1.00		0.24	1.00		0.22	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	242	427	430	198	383	387	181	1539	685	265	1556	801
V/C Ratio(X)	0.76	0.63	0.64	0.75	0.83	0.84	0.41	0.33	0.08	0.60	0.39	0.39
Avail Cap(c_a), veh/h	323	591	595	269	537	542	191	1539	685	296	1556	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	42.9	43.2	54.8	47.5	47.8	58.7	23.8	21.1	57.2	22.8	23.1
Incr Delay (d2), s/veh	4.5	0.6	0.6	4.4	5.6	5.8	0.5	0.6	0.2	1.6	0.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	8.6	8.8	5.3	11.4	11.6	1.3	6.0	1.1	2.8	7.2	7.7
LnGrp Delay(d),s/veh	57.4	43.5	43.8	59.3	53.1	53.6	59.2	24.4	21.4	58.8	23.5	24.5
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		728			792			628			1074	
Approach Delay, s/veh		47.1			54.4			28.2			29.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	59.7	18.7	35.8	10.7	62.8	22.0	32.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	34.9	17.9	41.9	5.0	38.8	21.9	37.9
Max Q Clear Time (g_c+I1), s	7.8	14.0	12.6	20.2	4.7	17.2	15.1	24.9
Green Ext Time (p_c), s	0.0	3.6	0.0	1.1	0.0	3.6	0.8	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	525	87	703	655	304	45	810	538	335	980	61
Future Volume (veh/h)	132	525	87	703	655	304	45	810	538	335	980	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	157	625	0	837	780	0	54	964	0	399	1167	68
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	196	753	337	927	1327	594	85	1269	839	486	1685	98
Arrive On Green	0.11	0.22	0.00	0.28	0.39	0.00	0.05	0.25	0.00	0.14	0.34	0.33
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1583	3442	4916	286
Grp Volume(v), veh/h	157	625	0	837	780	0	54	964	0	399	805	430
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1583	1721	1695	1812
Q Serve(g_s), s	13.0	25.3	0.0	35.2	26.3	0.0	4.4	25.6	0.0	16.4	29.8	29.9
Cycle Q Clear(g_c), s	13.0	25.3	0.0	35.2	26.3	0.0	4.4	25.6	0.0	16.4	29.8	29.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	196	753	337	927	1327	594	85	1269	839	486	1162	621
V/C Ratio(X)	0.80	0.83	0.00	0.90	0.59	0.00	0.63	0.76	0.00	0.82	0.69	0.69
Avail Cap(c_a), veh/h	284	801	359	1054	1327	594	85	1342	862	519	1243	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	54.4	0.0	50.8	35.5	0.0	68.2	50.7	0.0	60.9	41.3	41.5
Incr Delay (d2), s/veh	6.3	6.8	0.0	9.3	0.6	0.0	11.2	2.3	0.0	8.8	1.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	12.8	0.0	17.5	12.6	0.0	2.4	12.2	0.0	8.4	14.2	15.4
LnGrp Delay(d),s/veh	69.3	61.1	0.0	60.1	36.1	0.0	79.4	53.0	0.0	69.7	42.7	44.1
LnGrp LOS	E	E		E	D		E	D		E	D	D
Approach Vol, veh/h		782			1617			1018			1634	
Approach Delay, s/veh		62.8			48.6			54.4			49.7	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	40.4	44.4	36.4	11.0	54.0	20.6	60.3
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	20.0	36.0	44.0	* 32	5.0	51.0	22.5	53.5
Max Q Clear Time (g_c+I1), s	18.4	27.6	37.2	27.3	6.4	31.9	15.0	28.3
Green Ext Time (p_c), s	0.2	6.3	1.2	2.6	0.0	11.6	0.1	9.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.3
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	632	252	69	432	306	11
Future Volume (veh/h)	632	252	69	432	306	11
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1900	1810	1810	1863	1863
Adj Flow Rate, veh/h	821	311	90	561	397	4
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	859	326	123	1247	394	352
Arrive On Green	0.69	0.69	0.69	0.69	0.22	0.22
Sat Flow, veh/h	1247	473	481	1810	1774	1583
Grp Volume(v), veh/h	0	1132	90	561	397	4
Grp Sat Flow(s),veh/h/ln	0	1720	481	1810	1774	1583
Q Serve(g_s), s	0.0	53.9	8.1	12.6	20.0	0.2
Cycle Q Clear(g_c), s	0.0	53.9	62.0	12.6	20.0	0.2
Prop In Lane		0.27	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1185	123	1247	394	352
V/C Ratio(X)	0.00	0.96	0.73	0.45	1.01	0.01
Avail Cap(c_a), veh/h	0	1185	123	1247	394	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.7	43.1	6.3	35.0	27.3
Incr Delay (d2), s/veh	0.0	16.6	19.6	0.3	47.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	30.3	2.9	6.3	14.9	0.1
LnGrp Delay(d),s/veh	0.0	29.3	62.7	6.6	82.1	27.3
LnGrp LOS		C	E	A	F	C
Approach Vol, veh/h	1132			651	401	
Approach Delay, s/veh	29.3			14.3	81.6	
Approach LOS	C			B	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		66.0		24.0		66.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		62.0		20.0		62.0		
Max Q Clear Time (g_c+I1), s		64.0		22.0		55.9		
Green Ext Time (p_c), s		0.0		0.0		5.1		

Intersection Summary		
HCM 2010 Ctrl Delay		34.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	5	91	12	14	26	53	937	5	18	1414	359
Future Volume (veh/h)	340	5	91	12	14	26	53	937	5	18	1414	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	395	0	45	14	16	9	61	1077	6	21	1625	0
Adj No. of Lanes	2	0	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	709	0	307	144	155	73	127	2244	13	82	2113	0
Arrive On Green	0.20	0.00	0.20	0.20	0.20	0.17	0.07	0.62	0.59	0.05	0.60	0.00
Sat Flow, veh/h	2715	0	1566	451	792	373	1774	3609	20	1774	3632	0
Grp Volume(v), veh/h	395	0	45	39	0	0	61	528	555	21	1625	0
Grp Sat Flow(s),veh/h/ln	1358	0	1566	1616	0	0	1774	1770	1859	1774	1770	0
Q Serve(g_s), s	10.0	0.0	2.1	0.0	0.0	0.0	2.9	14.2	14.2	1.0	30.3	0.0
Cycle Q Clear(g_c), s	11.6	0.0	2.1	1.6	0.0	0.0	2.9	14.2	14.2	1.0	30.3	0.0
Prop In Lane	1.00		1.00	0.36		0.23	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	709	0	307	372	0	0	127	1101	1156	82	2113	0
V/C Ratio(X)	0.56	0.00	0.15	0.10	0.00	0.00	0.48	0.48	0.48	0.25	0.77	0.00
Avail Cap(c_a), veh/h	1343	0	673	740	0	0	136	1448	1521	132	2888	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.1	0.0	29.4	29.4	0.0	0.0	39.5	9.0	9.0	40.7	13.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.0	1.1	0.1	0.1	0.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.9	0.8	0.0	0.0	1.5	6.9	7.3	0.5	14.8	0.0
LnGrp Delay(d),s/veh	33.3	0.0	29.5	29.5	0.0	0.0	40.6	9.1	9.1	41.3	13.8	0.0
LnGrp LOS	C		C	C			D	A	A	D	B	
Approach Vol, veh/h		440			39			1144			1646	
Approach Delay, s/veh		32.9			29.5			10.8			14.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	59.0		21.3	10.3	56.8		21.3
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	4.1	69.9		36.0	4.3	69.7		36.0
Max Q Clear Time (g_c+I1), s	3.0	16.2		13.6	4.9	32.3		3.6
Green Ext Time (p_c), s	0.0	20.6		1.0	0.0	18.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	135	85	357	323	18	67	333	344	58	515	292
Future Volume (veh/h)	179	135	85	357	323	18	67	333	344	58	515	292
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	213	161	13	425	385	6	80	396	131	69	613	204
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	277	508	41	494	975	434	122	1041	457	121	1039	462
Arrive On Green	0.16	0.15	0.13	0.28	0.28	0.28	0.07	0.30	0.30	0.07	0.30	0.30
Sat Flow, veh/h	1774	3314	265	1774	3539	1576	1723	3438	1511	1723	3438	1530
Grp Volume(v), veh/h	213	85	89	425	385	6	80	396	131	69	613	204
Grp Sat Flow(s),veh/h/ln	1774	1770	1810	1774	1770	1576	1723	1719	1511	1723	1719	1530
Q Serve(g_s), s	9.4	3.5	3.6	18.6	7.2	0.2	3.7	7.4	5.4	3.2	12.4	8.8
Cycle Q Clear(g_c), s	9.4	3.5	3.6	18.6	7.2	0.2	3.7	7.4	5.4	3.2	12.4	8.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	271	277	494	975	434	122	1041	457	121	1039	462
V/C Ratio(X)	0.77	0.31	0.32	0.86	0.39	0.01	0.66	0.38	0.29	0.57	0.59	0.44
Avail Cap(c_a), veh/h	520	681	696	802	1924	857	190	1323	581	147	1239	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	30.8	31.0	28.0	24.1	21.6	37.1	22.5	21.8	36.8	24.3	23.0
Incr Delay (d2), s/veh	4.5	0.7	0.7	5.4	0.3	0.0	2.2	0.2	0.3	1.6	1.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	1.8	1.8	9.8	3.6	0.1	1.8	3.6	2.3	1.6	6.0	3.9
LnGrp Delay(d),s/veh	37.6	31.5	31.6	33.5	24.4	21.6	39.3	22.7	22.1	38.4	25.4	24.4
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	C	C
Approach Vol, veh/h		387			816			607			886	
Approach Delay, s/veh		34.9			29.1			24.8			26.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	28.8	26.8	16.5	9.8	28.7	16.8	26.6
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	6.0	30.0	36.0	30.0	8.0	28.0	23.0	43.0
Max Q Clear Time (g_c+I1), s	5.2	9.4	20.6	5.6	5.7	14.4	11.4	9.2
Green Ext Time (p_c), s	0.0	11.5	1.2	3.5	0.0	8.7	0.4	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	709	119	153	521	175	143	919	199	264	839	152
Future Volume (veh/h)	224	709	119	153	521	175	143	919	199	264	839	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	229	723	110	156	532	151	146	938	87	269	856	137
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	277	834	127	207	630	178	251	1087	485	582	1781	283
Arrive On Green	0.16	0.28	0.26	0.12	0.24	0.22	0.07	0.31	0.31	0.17	0.40	0.39
Sat Flow, veh/h	1723	2988	454	1723	2645	748	3442	3539	1579	3442	4416	703
Grp Volume(v), veh/h	229	416	417	156	345	338	146	938	87	269	656	337
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1674	1721	1770	1579	1721	1695	1729
Q Serve(g_s), s	16.5	29.4	29.5	11.2	24.5	24.7	5.3	32.0	5.2	9.0	18.3	18.6
Cycle Q Clear(g_c), s	16.5	29.4	29.5	11.2	24.5	24.7	5.3	32.0	5.2	9.0	18.3	18.6
Prop In Lane	1.00		0.26	1.00		0.45	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	277	479	481	207	410	399	251	1087	485	582	1367	697
V/C Ratio(X)	0.83	0.87	0.87	0.75	0.84	0.85	0.58	0.86	0.18	0.46	0.48	0.48
Avail Cap(c_a), veh/h	291	591	593	211	512	498	272	1087	485	582	1367	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	43.9	44.2	54.5	46.5	47.0	57.5	41.8	32.5	47.9	28.3	28.7
Incr Delay (d2), s/veh	15.7	9.6	9.6	12.4	8.4	9.1	1.5	9.1	0.8	0.2	1.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	15.3	15.3	6.0	12.5	12.5	2.5	17.0	2.4	4.3	8.8	9.3
LnGrp Delay(d),s/veh	67.7	53.5	53.8	66.9	54.9	56.1	58.9	50.9	33.3	48.2	29.5	31.1
LnGrp LOS	E	D	D	E	D	E	E	D	C	D	C	C
Approach Vol, veh/h		1062			839			1171			1262	
Approach Delay, s/veh		56.7			57.6			50.6			33.9	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.6	43.3	19.4	39.7	13.3	55.6	24.6	34.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	10.9	37.2	13.6	41.9	8.0	40.1	19.5	36.0
Max Q Clear Time (g_c+I1), s	11.0	34.0	13.2	31.5	7.3	20.6	18.5	26.7
Green Ext Time (p_c), s	0.0	1.1	0.1	1.5	0.0	2.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	48.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	862	72	614	647	447	88	859	769	406	688	63
Future Volume (veh/h)	100	862	72	614	647	447	88	859	769	406	688	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	105	907	0	646	681	0	93	904	0	427	724	59
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	144	1017	455	746	1509	675	139	1117	707	493	1364	110
Arrive On Green	0.08	0.30	0.00	0.22	0.44	0.00	0.08	0.22	0.00	0.14	0.28	0.27
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1583	3442	4790	388
Grp Volume(v), veh/h	105	907	0	646	681	0	93	904	0	427	511	272
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1583	1721	1695	1787
Q Serve(g_s), s	8.3	35.2	0.0	26.0	19.3	0.0	7.1	23.6	0.0	16.9	17.7	18.0
Cycle Q Clear(g_c), s	8.3	35.2	0.0	26.0	19.3	0.0	7.1	23.6	0.0	16.9	17.7	18.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	144	1017	455	746	1509	675	139	1117	707	493	965	509
V/C Ratio(X)	0.73	0.89	0.00	0.87	0.45	0.00	0.67	0.81	0.00	0.87	0.53	0.53
Avail Cap(c_a), veh/h	221	1034	463	1078	1702	761	191	1220	739	493	965	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.4	47.0	0.0	52.2	27.4	0.0	62.6	51.7	0.0	58.5	42.1	42.4
Incr Delay (d2), s/veh	2.6	9.7	0.0	3.9	0.2	0.0	2.1	3.7	0.0	14.4	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	18.1	0.0	12.4	9.2	0.0	3.6	11.4	0.0	9.0	8.4	9.0
LnGrp Delay(d),s/veh	65.1	56.7	0.0	56.1	27.6	0.0	64.7	55.4	0.0	72.9	42.5	43.2
LnGrp LOS	E	E		E	C		E	E		E	D	D
Approach Vol, veh/h		1012			1327			997			1210	
Approach Delay, s/veh		57.6			41.4			56.3			53.4	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	34.7	35.2	45.8	14.9	43.8	15.7	65.3
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	18.0	31.0	43.0	* 40	13.0	36.0	16.4	66.6
Max Q Clear Time (g_c+I1), s	18.9	25.6	28.0	37.2	9.1	20.0	10.3	21.3
Green Ext Time (p_c), s	0.0	2.6	1.2	2.1	0.0	8.0	0.1	12.5

Intersection Summary	
HCM 2010 Ctrl Delay	51.5
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	499	298	94	439	376	22
Future Volume (veh/h)	499	298	94	439	376	22
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1900	1810	1810	1863	1863
Adj Flow Rate, veh/h	525	288	99	462	396	7
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	691	379	292	1141	453	405
Arrive On Green	0.63	0.63	0.63	0.63	0.26	0.26
Sat Flow, veh/h	1097	602	650	1810	1774	1583
Grp Volume(v), veh/h	0	813	99	462	396	7
Grp Sat Flow(s),veh/h/ln	0	1699	650	1810	1774	1583
Q Serve(g_s), s	0.0	23.8	8.9	8.9	15.0	0.2
Cycle Q Clear(g_c), s	0.0	23.8	32.7	8.9	15.0	0.2
Prop In Lane		0.35	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1071	292	1141	453	405
V/C Ratio(X)	0.00	0.76	0.34	0.41	0.87	0.02
Avail Cap(c_a), veh/h	0	1333	392	1419	683	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.2	20.8	6.4	25.0	19.5
Incr Delay (d2), s/veh	0.0	2.0	0.7	0.2	8.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.4	1.7	4.4	8.3	0.1
LnGrp Delay(d),s/veh	0.0	11.2	21.5	6.7	33.2	19.5
LnGrp LOS		B	C	A	C	B
Approach Vol, veh/h	813			561	403	
Approach Delay, s/veh	11.2			9.3	32.9	
Approach LOS	B			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		48.2		21.9		48.2		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		55.0		27.0		55.0		
Max Q Clear Time (g_c+I1), s		34.7		17.0		25.8		
Green Ext Time (p_c), s		9.5		0.9		11.2		

Intersection Summary		
HCM 2010 Ctrl Delay		15.5
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	13	68	5	15	12	169	1443	8	10	909	415
Future Volume (veh/h)	328	13	68	5	15	12	169	1443	8	10	909	415
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	0.99		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	367	0	23	5	16	4	184	1568	9	11	988	0
Adj No. of Lanes	2	0	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	743	0	311	96	253	55	277	2149	12	79	1712	0
Arrive On Green	0.20	0.00	0.20	0.20	0.20	0.17	0.16	0.60	0.56	0.04	0.48	0.00
Sat Flow, veh/h	2720	0	1564	190	1271	278	1774	3608	21	1774	3632	0
Grp Volume(v), veh/h	367	0	23	25	0	0	184	769	808	11	988	0
Grp Sat Flow(s),veh/h/ln	1360	0	1564	1740	0	0	1774	1770	1859	1774	1770	0
Q Serve(g_s), s	8.2	0.0	0.9	0.0	0.0	0.0	7.3	23.2	23.2	0.4	14.9	0.0
Cycle Q Clear(g_c), s	9.0	0.0	0.9	0.8	0.0	0.0	7.3	23.2	23.2	0.4	14.9	0.0
Prop In Lane	1.00		1.00	0.20		0.16	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	743	0	311	404	0	0	277	1054	1107	79	1712	0
V/C Ratio(X)	0.49	0.00	0.07	0.06	0.00	0.00	0.66	0.73	0.73	0.14	0.58	0.00
Avail Cap(c_a), veh/h	1697	0	860	996	0	0	381	1649	1732	155	2847	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.4	0.0	24.3	24.4	0.0	0.0	29.6	10.8	10.8	34.3	13.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	1.0	0.4	0.4	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.4	0.4	0.0	0.0	3.7	11.2	11.8	0.2	7.3	0.0
LnGrp Delay(d),s/veh	27.6	0.0	24.3	24.4	0.0	0.0	30.6	11.2	11.2	34.6	13.9	0.0
LnGrp LOS	C		C	C			C	B	B	C	B	
Approach Vol, veh/h		390			25			1761			999	
Approach Delay, s/veh		27.4			24.4			13.2			14.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	48.4		18.9	15.7	40.1		18.9
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	4.0	67.0		39.0	13.5	57.5		39.0
Max Q Clear Time (g_c+I1), s	2.4	25.2		11.0	9.3	16.9		2.8
Green Ext Time (p_c), s	0.0	16.7		0.8	0.1	16.5		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	290	64	239	232	17	144	808	624	31	421	261
Future Volume (veh/h)	300	290	64	239	232	17	144	808	624	31	421	261
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	312	302	50	249	242	3	150	842	271	32	439	112
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	378	583	95	314	552	247	204	1332	584	86	1098	486
Arrive On Green	0.21	0.19	0.17	0.18	0.16	0.16	0.12	0.39	0.39	0.05	0.32	0.32
Sat Flow, veh/h	1774	3040	497	1774	3539	1583	1723	3438	1506	1723	3438	1524
Grp Volume(v), veh/h	312	174	178	249	242	3	150	842	271	32	439	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1768	1774	1770	1583	1723	1719	1506	1723	1719	1524
Q Serve(g_s), s	13.9	7.3	7.5	11.1	5.1	0.1	6.9	16.4	11.1	1.5	8.2	4.5
Cycle Q Clear(g_c), s	13.9	7.3	7.5	11.1	5.1	0.1	6.9	16.4	11.1	1.5	8.2	4.5
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	378	340	339	314	552	247	204	1332	584	86	1098	486
V/C Ratio(X)	0.83	0.51	0.52	0.79	0.44	0.01	0.74	0.63	0.46	0.37	0.40	0.23
Avail Cap(c_a), veh/h	622	696	695	601	1349	603	354	1643	720	146	1227	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	29.9	30.2	32.5	31.6	29.5	35.2	20.5	18.9	38.0	22.0	20.7
Incr Delay (d2), s/veh	4.6	1.2	1.3	4.5	0.5	0.0	2.0	0.5	0.6	1.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	3.6	3.8	5.9	2.5	0.1	3.4	7.8	4.7	0.7	4.0	1.9
LnGrp Delay(d),s/veh	35.7	31.1	31.5	37.0	32.1	29.5	37.2	21.1	19.5	39.0	22.5	21.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		664			494			1263			583	
Approach Delay, s/veh		33.4			34.6			22.6			23.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	36.0	18.6	19.9	13.8	30.4	21.6	16.9
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	6.0	38.0	27.0	31.0	16.0	28.0	28.0	30.0
Max Q Clear Time (g_c+I1), s	3.5	18.4	13.1	9.5	8.9	10.2	15.9	7.1
Green Ext Time (p_c), s	0.0	12.1	0.6	3.5	0.1	11.3	0.7	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	53	56	141	25	0	0	0	0	150	2	13
Future Vol, veh/h	0	53	56	141	25	0	0	0	0	150	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	75	188	33	0	0	0	0	200	3	17

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	71	0	0				480	480	33
Stage 1	-	-	-	-	-	-				409	409	-
Stage 2	-	-	-	-	-	-				71	71	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1529	-	0				545	485	1041
Stage 1	0	-	-	-	-	0				671	596	-
Stage 2	0	-	-	-	-	0				952	836	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1529	-	-				478	0	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-				478	0	-
Stage 1	-	-	-	-	-	-				588	0	-
Stage 2	-	-	-	-	-	-				952	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.5	17
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1529	-	478	1041
HCM Lane V/C Ratio	-	-	0.123	-	0.418	0.019
HCM Control Delay (s)	-	-	7.7	-	17.8	8.5
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	-	2	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	163	0	0	83	264	85	1	56	0	0	0
Future Vol, veh/h	41	163	0	0	83	264	85	1	56	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	212	0	0	108	343	110	1	73	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	108	0	-	-	-	0	426	426	212
Stage 1	-	-	-	-	-	-	318	318	-
Stage 2	-	-	-	-	-	-	108	108	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	0	0	-	-	585	520	828
Stage 1	-	-	0	0	-	-	738	654	-
Stage 2	-	-	0	0	-	-	916	806	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1483	-	-	-	-	-	564	0	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	564	0	-
Stage 1	-	-	-	-	-	-	712	0	-
Stage 2	-	-	-	-	-	-	916	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.5	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	564	828	1483	-	-	-
HCM Lane V/C Ratio	0.196	0.089	0.036	-	-	-
HCM Control Delay (s)	12.9	9.8	7.5	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	255	0	0	147	362	2	1	109	0	0	0
Future Vol, veh/h	4	255	0	0	147	362	2	1	109	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	287	0	0	165	407	2	1	122	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.4	12.5	10.2
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	67%	0%	100%	0%	0%	0%	0%
Vol Thru, %	33%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	109	4	128	128	147	362
LT Vol	2	0	4	0	0	0	0
Through Vol	1	0	0	128	128	147	0
RT Vol	0	109	0	0	0	0	362
Lane Flow Rate	3	122	4	143	143	165	407
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.007	0.203	0.008	0.242	0.173	0.257	0.553
Departure Headway (Hd)	6.992	5.953	6.589	6.085	4.335	5.599	4.894
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	603	543	590	825	646	740
Service Time	4.734	3.694	4.326	3.821	2.071	3.299	2.594
HCM Lane V/C Ratio	0.006	0.202	0.007	0.242	0.173	0.255	0.55
HCM Control Delay	9.8	10.2	9.4	10.8	8	10.2	13.5
HCM Lane LOS	A	B	A	B	A	B	B
HCM 95th-tile Q	0	0.8	0	0.9	0.6	1	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	333	0	0	0	443	43	0	0	76	66
Future Volume (veh/h)	34	0	333	0	0	0	443	43	0	0	76	66
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	38	0	39				492	48	0	0	84	13
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	82	0	74				595	1226	0	0	326	276
Arrive On Green	0.05	0.00	0.05				0.34	0.66	0.00	0.00	0.17	0.17
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1579
Grp Volume(v), veh/h	38	0	39				492	48	0	0	84	13
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1579
Q Serve(g_s), s	0.6	0.0	0.7				6.9	0.2	0.0	0.0	1.1	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.7				6.9	0.2	0.0	0.0	1.1	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	82	0	74				595	1226	0	0	326	276
V/C Ratio(X)	0.46	0.00	0.53				0.83	0.04	0.00	0.00	0.26	0.05
Avail Cap(c_a), veh/h	1573	0	1404				1324	4149	0	0	4149	3517
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	12.6				8.3	1.6	0.0	0.0	9.7	9.3
Incr Delay (d2), s/veh	1.5	0.0	2.2				1.1	0.0	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.6				3.5	0.1	0.0	0.0	0.6	0.1
LnGrp Delay(d),s/veh	14.1	0.0	14.8				9.4	1.7	0.0	0.0	10.1	9.4
LnGrp LOS	B		B				A	A			B	A
Approach Vol, veh/h		77						540			97	
Approach Delay, s/veh		14.4						8.7			10.0	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.8		5.3	13.1	8.7		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.2		2.7	8.9	3.1		
Green Ext Time (p_c), s		1.2		0.0	0.2	1.2		

Intersection Summary		
HCM 2010 Ctrl Delay		9.5
HCM 2010 LOS		A

Notes

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	265	6	0	1	8	2	8	37	1	4	29	187
Future Vol, veh/h	265	6	0	1	8	2	8	37	1	4	29	187
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	340	8	0	1	10	3	10	47	1	5	37	240
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.4	8.3	8.8	9.8
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	98%	9%	2%
Vol Thru, %	80%	2%	73%	13%
Vol Right, %	2%	0%	18%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	271	11	220
LT Vol	8	265	1	4
Through Vol	37	6	8	29
RT Vol	1	0	2	187
Lane Flow Rate	59	347	14	282
Geometry Grp	1	1	1	1
Degree of Util (X)	0.085	0.475	0.02	0.347
Departure Headway (Hd)	5.219	4.919	5.081	4.431
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	682	730	697	809
Service Time	3.287	2.979	3.167	2.477
HCM Lane V/C Ratio	0.087	0.475	0.02	0.349
HCM Control Delay	8.8	12.4	8.3	9.8
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.6	0.1	1.6

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	136	18	136	111	7	20	2	175	3	1	2
Future Vol, veh/h	5	136	18	136	111	7	20	2	175	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	170	23	170	139	9	25	3	219	4	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	193	0	0	679	682	181	787	688	143
Stage 1	-	-	-	-	-	-	194	194	-	483	483	-
Stage 2	-	-	-	-	-	-	485	488	-	304	205	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	-	1380	-	-	366	372	862	309	369	905
Stage 1	-	-	-	-	-	-	808	740	-	565	553	-
Stage 2	-	-	-	-	-	-	563	550	-	705	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1434	-	-	1380	-	-	325	321	862	205	318	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	325	321	-	205	318	-
Stage 1	-	-	-	-	-	-	804	736	-	562	479	-
Stage 2	-	-	-	-	-	-	485	476	-	522	728	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.3	12.5	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	728	1434	-	-	1380	-	-	560
HCM Lane V/C Ratio	0.338	0.004	-	-	0.123	-	-	0.007
HCM Control Delay (s)	12.5	7.5	0	-	8	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0	-	-	0.4	-	-	0

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	0	186	43	0	171
Future Vol, veh/h	39	0	186	43	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	0	258	60	0	238

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	526	288	0	0	318	0
Stage 1	288	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	512	751	-	-	1242	-
Stage 1	761	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	512	751	-	-	1242	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	512	1242	-
HCM Lane V/C Ratio	-	-	0.106	-	-
HCM Control Delay (s)	-	-	12.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	137	165	147	240	340	181	112	133	215	116	76
Future Volume (veh/h)	24	137	165	147	240	340	181	112	133	215	116	76
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	29	163	48	175	286	129	215	133	29	256	138	17
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	654	292	433	763	341	584	628	134	475	645	289
Arrive On Green	0.08	0.18	0.18	0.13	0.22	0.22	0.17	0.22	0.20	0.14	0.18	0.18
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	2905	618	3442	3539	1583
Grp Volume(v), veh/h	29	163	48	175	286	129	215	80	82	256	138	17
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1754	1721	1770	1583
Q Serve(g_s), s	0.4	1.9	1.2	2.2	3.3	3.3	2.6	1.8	1.9	3.3	1.6	0.4
Cycle Q Clear(g_c), s	0.4	1.9	1.2	2.2	3.3	3.3	2.6	1.8	1.9	3.3	1.6	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	269	654	292	433	763	341	584	382	379	475	645	289
V/C Ratio(X)	0.11	0.25	0.16	0.40	0.37	0.38	0.37	0.21	0.22	0.54	0.21	0.06
Avail Cap(c_a), veh/h	1551	4547	2034	1551	4488	2008	1551	2255	2235	1536	4502	2014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	16.6	16.4	19.2	16.0	16.0	17.5	15.4	15.5	19.2	16.6	16.1
Incr Delay (d2), s/veh	0.1	0.2	0.3	0.2	0.2	0.4	0.1	0.4	0.5	0.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.9	0.6	1.1	1.6	1.5	1.3	0.9	0.9	1.6	0.8	0.2
LnGrp Delay(d),s/veh	20.5	16.9	16.7	19.4	16.2	16.4	17.7	15.8	16.0	19.5	16.9	16.3
LnGrp LOS	C	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		240			590			377			411	
Approach Delay, s/veh		17.3			17.2			16.9			18.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	12.8	12.1	12.8	7.7	15.1	10.6	14.3				
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8				
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60				
Max Q Clear Time (g_c+I1), s	4.2	3.9	4.6	3.6	2.4	5.3	5.3	3.9				
Green Ext Time (p_c), s	0.1	3.0	0.1	3.1	0.0	3.0	0.2	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	447	49	273	548	99	64	110	244	62	98	17
Future Volume (veh/h)	12	447	49	273	548	99	64	110	244	62	98	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.94		0.89	0.94		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	581	30	355	712	125	83	143	70	81	127	18
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	656	540	370	851	149	176	281	429	141	203	25
Arrive On Green	0.01	0.35	0.35	0.21	0.55	0.54	0.31	0.31	0.31	0.31	0.31	0.30
Sat Flow, veh/h	1774	1863	1534	1774	1544	271	404	920	1402	285	652	81
Grp Volume(v), veh/h	16	581	30	355	0	837	226	0	70	226	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1534	1774	0	1815	1324	0	1402	1019	0	0
Q Serve(g_s), s	0.8	27.5	1.2	18.5	0.0	36.0	0.0	0.0	3.4	9.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	27.5	1.2	18.5	0.0	36.0	13.2	0.0	3.4	22.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.15	0.37		1.00	0.36		0.08
Lane Grp Cap(c), veh/h	16	656	540	370	0	1001	458	0	429	369	0	0
V/C Ratio(X)	0.98	0.89	0.06	0.96	0.00	0.84	0.49	0.00	0.16	0.61	0.00	0.00
Avail Cap(c_a), veh/h	370	808	665	370	0	1001	458	0	429	431	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	46.4	28.5	20.0	36.7	0.0	17.5	26.6	0.0	23.7	31.1	0.0	0.0
Incr Delay (d2), s/veh	58.1	10.4	0.1	36.2	0.0	6.4	0.3	0.0	0.1	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	15.9	0.5	12.8	0.0	19.7	4.9	0.0	1.3	5.5	0.0	0.0
LnGrp Delay(d),s/veh	104.4	38.9	20.1	72.8	0.0	24.0	26.9	0.0	23.8	32.1	0.0	0.0
LnGrp LOS	F	D	C	E		C	C		C	C		
Approach Vol, veh/h		627			1192			296			226	
Approach Delay, s/veh		39.7			38.5			26.1			32.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	37.0		33.1	4.9	55.6		33.1
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.0	40.0		32.1	20.0	40.0		* 20
Max Q Clear Time (g_c+I1), s	20.5	29.5		24.2	2.8	38.0		15.2
Green Ext Time (p_c), s	0.0	2.9		0.4	0.0	1.7		0.7

Intersection Summary

HCM 2010 Ctrl Delay 36.7

HCM 2010 LOS D

Notes

Intersection	
Intersection Delay, s/veh	19
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	52	3	263	35	55	3	159	292	64	210	4
Future Vol, veh/h	19	52	3	263	35	55	3	159	292	64	210	4
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	64	4	325	43	68	4	196	360	79	259	5
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	13.7	23.7	18.5	15.2
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	26%	100%	0%	38%	0%
Vol Thru, %	98%	0%	70%	0%	39%	62%	96%
Vol Right, %	0%	100%	4%	0%	61%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	292	74	263	90	169	109
LT Vol	3	0	19	263	0	64	0
Through Vol	159	0	52	0	35	105	105
RT Vol	0	292	3	0	55	0	4
Lane Flow Rate	200	360	91	325	111	209	135
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.401	0.65	0.212	0.711	0.214	0.446	0.279
Departure Headway (Hd)	7.218	6.49	8.368	7.888	6.939	7.696	7.474
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	555	428	458	517	467	480
Service Time	4.963	4.235	6.436	5.634	4.685	5.447	5.226
HCM Lane V/C Ratio	0.402	0.649	0.213	0.71	0.215	0.448	0.281
HCM Control Delay	14.7	20.6	13.7	27.9	11.6	16.5	13.1
HCM Lane LOS	B	C	B	D	B	C	B
HCM 95th-tile Q	1.9	4.7	0.8	5.5	0.8	2.3	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	347	187	48	496	9	167	330	43	11	462	252
Future Volume (veh/h)	263	347	187	48	496	9	167	330	43	11	462	252
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	302	377	74	52	539	9	192	379	39	12	531	110
Adj No. of Lanes	1	0	1	0	2	0	1	2	0	1	1	1
Peak Hour Factor	0.87	0.92	0.87	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	0	299	0	587	10	227	1518	155	11	645	548
Arrive On Green	0.19	0.20	0.19	0.16	0.16	0.16	0.13	0.47	0.47	0.01	0.35	0.35
Sat Flow, veh/h	1774	0	1567	0	3562	59	1774	3242	332	1774	1863	1583
Grp Volume(v), veh/h	302	0	74	0	268	280	192	206	212	12	531	110
Grp Sat Flow(s),veh/h/ln	1774	0	1567	0	1770	1852	1774	1770	1804	1774	1863	1583
Q Serve(g_s), s	16.1	0.0	3.9	0.0	14.5	14.5	10.3	6.8	6.9	0.6	25.3	4.7
Cycle Q Clear(g_c), s	16.1	0.0	3.9	0.0	14.5	14.5	10.3	6.8	6.9	0.6	25.3	4.7
Prop In Lane	1.00		1.00	0.00		0.03	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	339	0	299	0	292	305	227	829	845	11	645	548
V/C Ratio(X)	0.89	0.00	0.25	0.00	0.92	0.92	0.84	0.25	0.25	1.08	0.82	0.20
Avail Cap(c_a), veh/h	539	0	476	0	292	305	329	953	972	73	735	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	33.4	0.0	39.9	39.9	41.4	15.5	15.6	48.3	29.0	22.3
Incr Delay (d2), s/veh	11.1	0.0	0.4	0.0	32.2	31.4	8.9	0.5	0.5	100.6	6.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	1.7	0.0	9.7	10.1	5.6	3.4	3.5	0.6	14.2	2.1
LnGrp Delay(d),s/veh	49.4	0.0	33.8	0.0	72.1	71.3	50.3	16.0	16.1	152.0	35.9	22.5
LnGrp LOS	D		C		E	E	D	B	B	F	D	C
Approach Vol, veh/h		376			548			610			653	
Approach Delay, s/veh		46.3			71.7			26.8			35.8	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	49.5		20.0	16.4	37.6		23.0
Change Period (Y+Rc), s	3.5	4.3		4.0	* 4.2	4.3		4.0
Max Green Setting (Gmax), s	4.5	52.0		16.0	* 18	38.0		30.0
Max Q Clear Time (g_c+I1), s	2.6	8.9		16.5	12.3	27.3		18.1
Green Ext Time (p_c), s	0.0	12.1		0.0	0.0	6.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	44.1
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	51	256	328	220	173	36
Future Vol, veh/h	51	256	328	220	173	36
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	332	426	286	225	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1364	226	226	0	-	0
Stage 1	226	-	-	-	-	-
Stage 2	1138	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	163	813	1342	-	-	0
Stage 1	812	-	-	-	-	0
Stage 2	306	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	111	812	1342	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18	5.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1342	-	668	-
HCM Lane V/C Ratio	0.317	-	0.597	-
HCM Control Delay (s)	8.9	-	18	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	1.4	-	4	-

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	235	103	49	317	11	20	96	36	8	42	10
Future Vol, veh/h	11	235	103	49	317	11	20	96	36	8	42	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	255	112	53	345	12	22	104	39	9	46	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	336	255	28	335	241	72	57	0	0	143	0	0
Stage 1	68	68	-	167	167	-	-	-	-	-	-	-
Stage 2	268	187	-	168	74	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	594	648	1041	595	659	975	1546	-	-	1437	-	-
Stage 1	934	838	-	818	759	-	-	-	-	-	-	-
Stage 2	714	744	-	817	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	334	634	1041	359	645	975	1546	-	-	1437	-	-
Mov Cap-2 Maneuver	334	634	-	359	645	-	-	-	-	-	-	-
Stage 1	919	833	-	805	747	-	-	-	-	-	-	-
Stage 2	374	732	-	503	828	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	14.6	1	1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1546	-	-	589	776	543	659	1437	-	-
HCM Lane V/C Ratio	0.014	-	-	0.237	0.309	0.415	0.28	0.006	-	-
HCM Control Delay (s)	7.4	0	-	13	11.7	16.3	12.6	7.5	0	-
HCM Lane LOS	A	A	-	B	B	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	1.3	2	1.1	0	-	-

Intersection	
Int Delay, s/veh	80.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	28	173	75	32	7	70	524	147	10	696	11
Future Vol, veh/h	9	28	173	75	32	7	70	524	147	10	696	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	92	82	92	92	92	82	82	92	92	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	30	211	82	35	8	85	639	160	11	849	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1385	1847	431	1351	1774	399	862	0	0	799	0	0
Stage 1	877	877	-	890	890	-	-	-	-	-	-	-
Stage 2	508	970	-	461	884	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	103	74	573	109	82	601	776	-	-	819	-	-
Stage 1	310	364	-	304	359	-	-	-	-	-	-	-
Stage 2	516	330	-	550	362	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	57	573	~ 34	64	601	776	-	-	819	-	-
Mov Cap-2 Maneuver	49	57	-	~ 34	64	-	-	-	-	-	-	-
Stage 1	247	355	-	242	286	-	-	-	-	-	-	-
Stage 2	357	263	-	309	353	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	144.3	$ 1083	1.6	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	776	-	-	224	42	819	-	-
HCM Lane V/C Ratio	0.11	-	-	1.127	2.95	0.013	-	-
HCM Control Delay (s)	10.2	0.8	-	144.3	$ 1083	9.5	0.1	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	11.7	13.6	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	212	82	0	520	972	0	0	0	431	2	136
Future Volume (veh/h)	0	212	82	0	520	972	0	0	0	431	2	136
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	233	0	0	571	0				475	0	49
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2040	0	0	1420	635				1089	0	486
Arrive On Green	0.00	0.41	0.00	0.00	0.41	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	233	0	0	571	0				475	0	49
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	0.8	0.0	0.0	3.3	0.0				3.1	0.0	0.6
Cycle Q Clear(g_c), s	0.0	0.8	0.0	0.0	3.3	0.0				3.1	0.0	0.6
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2040	0	0	1420	635				1089	0	486
V/C Ratio(X)	0.00	0.11	0.00	0.00	0.40	0.00				0.44	0.00	0.10
Avail Cap(c_a), veh/h	0	10557	0	0	7347	3287				3853	0	1720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.2	0.0	0.0	5.9	0.0				7.9	0.0	7.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	1.5	0.0				1.5	0.0	0.3
LnGrp Delay(d),s/veh	0.0	5.2	0.0	0.0	6.0	0.0				8.0	0.0	7.1
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		233			571						524	
Approach Delay, s/veh		5.2			6.0						7.9	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		15.8		12.8		15.8		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		2.8		5.1		5.3		
Green Ext Time (p_c), s		3.5		1.0		3.5		

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	583	42	0	1374	468	124	0	620	0	0	0
Future Volume (vph)	0	583	42	0	1374	468	124	0	620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frpb, ped/bikes		1.00			0.99			1.00	1.00			
Flpb, ped/bikes		1.00			1.00			1.00	1.00			
Frt		0.99			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4882			4717			1770	2787			
Flt Permitted		1.00			1.00			0.95	1.00			
Satd. Flow (perm)		4882			4717			1770	2787			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	641	46	0	1510	514	136	0	681	0	0	0
RTOR Reduction (vph)	0	6	0	0	74	0	0	0	55	0	0	0
Lane Group Flow (vph)	0	681	0	0	1950	0	0	136	626	0	0	0
Confl. Peds. (#/hr)			3			3						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases												
Actuated Green, G (s)		21.8			34.4			14.9	27.5			
Effective Green, g (s)		24.6			37.2			17.7	30.3			
Actuated g/C Ratio		0.39			0.59			0.28	0.48			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1909			2789			498	1342			
v/s Ratio Prot		0.14			c0.41			0.08	c0.22			
v/s Ratio Perm												
v/c Ratio		0.36			0.70			0.27	0.47			
Uniform Delay, d1		13.6			9.0			17.6	10.9			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		0.0			0.6			0.1	0.1			
Delay (s)		13.6			9.6			17.7	11.0			
Level of Service		B			A			B	B			
Approach Delay (s)		13.6			9.6			12.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	754	183	20	1128	208	220	164	15	191	207	419
Future Volume (veh/h)	225	754	183	20	1128	208	220	164	15	191	207	419
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	829	93	22	1240	207	242	180	0	210	227	263
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	329	1454	651	57	1509	252	827	1013	453	239	626	278
Arrive On Green	0.10	0.42	0.42	0.03	0.35	0.34	0.24	0.29	0.00	0.13	0.18	0.18
Sat Flow, veh/h	3343	3438	1538	1723	4263	712	3442	3539	1583	1774	3539	1573
Grp Volume(v), veh/h	247	829	93	22	958	489	242	180	0	210	227	263
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1682	1721	1770	1583	1774	1770	1573
Q Serve(g_s), s	9.4	23.8	2.1	1.6	34.5	34.5	7.5	5.0	0.0	15.1	7.3	21.5
Cycle Q Clear(g_c), s	9.4	23.8	2.1	1.6	34.5	34.5	7.5	5.0	0.0	15.1	7.3	21.5
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1454	651	57	1165	595	827	1013	453	239	626	278
V/C Ratio(X)	0.75	0.57	0.14	0.39	0.82	0.82	0.29	0.18	0.00	0.88	0.36	0.95
Avail Cap(c_a), veh/h	411	1454	651	199	1343	686	827	1013	453	239	626	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	28.5	4.3	61.6	38.3	38.6	40.4	34.9	0.0	55.2	47.1	52.9
Incr Delay (d2), s/veh	5.4	0.5	0.1	4.3	3.8	7.1	0.2	0.4	0.0	29.0	1.6	41.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	11.4	0.9	0.8	16.3	17.2	3.6	2.5	0.0	9.3	3.7	12.6
LnGrp Delay(d),s/veh	62.4	29.0	4.4	65.8	42.0	45.6	40.6	35.3	0.0	84.2	48.7	94.4
LnGrp LOS	E	C	A	E	D	D	D	D		F	D	F
Approach Vol, veh/h		1169			1469			422			700	
Approach Delay, s/veh		34.1			43.6			38.3			76.5	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	41.2	8.3	59.0	35.7	27.0	17.3	50.0
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	16.5	26.0	14.0	52.5	21.0	* 22	15.0	* 52
Max Q Clear Time (g_c+I1), s	17.1	7.0	3.6	25.8	9.5	23.5	11.4	36.5
Green Ext Time (p_c), s	0.0	1.8	0.0	7.1	1.5	0.0	0.4	8.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.2
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	8	8	474	14	18	12	412	520	14	323	10
Future Volume (veh/h)	14	8	8	474	14	18	12	412	520	14	323	10
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	9	1	544	0	0	13	463	0	16	363	9
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	26	64	839	0	375	51	1375	615	55	1993	49
Arrive On Green	0.04	0.04	0.04	0.24	0.00	0.00	0.03	0.39	0.00	0.03	0.39	0.36
Sat Flow, veh/h	1155	650	1575	3548	0	1583	1774	3539	1583	1774	5104	126
Grp Volume(v), veh/h	25	0	1	544	0	0	13	463	0	16	241	131
Grp Sat Flow(s),veh/h/ln	1805	0	1575	1774	0	1583	1774	1770	1583	1774	1695	1840
Q Serve(g_s), s	0.7	0.0	0.0	7.3	0.0	0.0	0.4	4.9	0.0	0.5	2.5	2.5
Cycle Q Clear(g_c), s	0.7	0.0	0.0	7.3	0.0	0.0	0.4	4.9	0.0	0.5	2.5	2.5
Prop In Lane	0.64		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	73	0	64	839	0	375	51	1375	615	55	1324	718
V/C Ratio(X)	0.34	0.00	0.02	0.65	0.00	0.00	0.25	0.34	0.00	0.29	0.18	0.18
Avail Cap(c_a), veh/h	1061	0	926	2759	0	1231	1043	3122	1397	1043	2990	1623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	24.3	18.1	0.0	0.0	25.0	11.3	0.0	25.0	10.5	10.6
Incr Delay (d2), s/veh	2.7	0.0	0.1	0.8	0.0	0.0	2.6	0.3	0.0	2.9	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	3.7	0.0	0.0	0.2	2.4	0.0	0.3	1.2	1.3
LnGrp Delay(d),s/veh	27.3	0.0	24.4	19.0	0.0	0.0	27.6	11.7	0.0	27.9	10.7	10.8
LnGrp LOS	C		C	B			C	B		C	B	B
Approach Vol, veh/h		26			544			476			388	
Approach Delay, s/veh		27.2			19.0			12.1			11.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	24.5		16.5	5.5	24.6		6.1
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.5	6.9		9.3	2.4	4.5		2.7
Green Ext Time (p_c), s	0.0	12.1		2.0	0.0	12.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	825	39	201	1012	365	55	372	146	406	323	304
Future Volume (veh/h)	110	825	39	201	1012	365	55	372	146	406	323	304
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	927	41	226	1137	156	62	418	43	456	363	105
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	477	1226	54	327	1585	492	489	898	400	568	980	436
Arrive On Green	0.14	0.37	0.34	0.10	0.32	0.32	0.14	0.25	0.25	0.17	0.28	0.28
Sat Flow, veh/h	3343	3353	148	3343	4940	1535	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	124	475	493	226	1137	156	62	418	43	456	363	105
Grp Sat Flow(s),veh/h/ln	1672	1719	1783	1672	1647	1535	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.3	31.5	31.5	8.5	26.4	6.1	2.0	13.0	2.7	16.6	10.7	6.7
Cycle Q Clear(g_c), s	4.3	31.5	31.5	8.5	26.4	6.1	2.0	13.0	2.7	16.6	10.7	6.7
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	477	629	652	327	1585	492	489	898	400	568	980	436
V/C Ratio(X)	0.26	0.76	0.76	0.69	0.72	0.32	0.13	0.47	0.11	0.80	0.37	0.24
Avail Cap(c_a), veh/h	477	629	652	327	1585	492	529	898	400	609	980	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	36.1	36.3	56.8	39.0	12.5	48.7	41.0	37.2	52.2	37.9	36.4
Incr Delay (d2), s/veh	0.1	8.3	8.0	5.2	2.8	1.7	0.0	1.7	0.5	6.5	1.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	16.4	16.9	4.2	12.4	2.8	1.0	6.5	1.2	8.4	5.4	3.1
LnGrp Delay(d),s/veh	49.7	44.4	44.2	61.9	41.8	14.1	48.8	42.8	37.7	58.7	38.9	37.7
LnGrp LOS	D	D	D	E	D	B	D	D	D	E	D	D
Approach Vol, veh/h		1092			1519			523			924	
Approach Delay, s/veh		44.9			41.9			43.1			48.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	45.0	25.5	37.0	16.0	51.5	22.5	40.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	14.2	38.9	20.2	30.9	9.9	43.2	17.9	33.2
Max Q Clear Time (g_c+I1), s	6.3	28.4	18.6	15.0	10.5	33.5	4.0	12.7
Green Ext Time (p_c), s	1.4	2.4	0.1	0.8	0.0	1.5	0.8	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	198	0.0	0.345	11.3	LOS B	1.8	45.0	0.78	0.81	26.6
8	T1	241	0.0	0.459	10.7	LOS B	3.1	78.2	0.82	0.91	23.1
18	R2	120	0.0	0.459	10.7	LOS B	3.1	78.2	0.82	0.91	34.0
Approach		558	0.0	0.459	10.9	LOS B	3.1	78.2	0.80	0.87	26.9
East: WB Boronda Rd											
1	L2	164	1.2	0.667	14.6	LOS B	7.5	188.7	0.82	1.06	27.3
6	T1	1294	1.2	0.667	12.8	LOS B	8.2	207.6	0.81	0.99	31.0
16	R2	168	6.3	0.139	4.1	LOS A	0.8	22.0	0.58	0.42	33.4
Approach		1625	1.7	0.667	12.1	LOS B	8.2	207.6	0.79	0.94	30.9
North: SB McKinnon St											
7	L2	207	0.0	0.250	7.0	LOS A	1.6	39.5	0.86	0.84	32.7
4	T1	143	1.8	0.277	10.8	LOS B	1.4	35.7	0.82	0.82	27.8
14	R2	245	1.1	0.277	7.1	LOS A	1.7	44.1	0.84	0.82	31.1
Approach		595	0.9	0.277	8.0	LOS A	1.7	44.1	0.85	0.83	31.3
West: EB Boronda Rd											
5	L2	334	0.0	0.503	9.1	LOS A	3.3	82.9	0.57	0.57	30.2
2	T1	912	0.0	0.503	8.0	LOS A	3.3	82.9	0.55	0.50	33.9
12	R2	204	0.0	0.136	3.4	LOS A	0.7	16.5	0.36	0.22	30.2
Approach		1451	0.0	0.503	7.6	LOS A	3.3	82.9	0.53	0.48	32.8
All Vehicles		4229	0.8	0.667	9.8	LOS A	8.2	207.6	0.71	0.76	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	181	0.0	0.196	5.8	LOS A	1.2	29.8	0.81	0.75	34.6
8	T1	136	0.0	0.226	8.9	LOS A	1.2	29.0	0.79	0.79	33.9
18	R2	211	0.0	0.205	5.4	LOS A	1.2	28.9	0.74	0.69	35.7
Approach		527	0.0	0.226	6.5	LOS A	1.2	29.8	0.78	0.74	34.9
East: WB Baronda Rd											
1	L2	210	0.0	0.927	34.3	LOS D	27.8	699.0	1.00	1.71	27.6
6	T1	1608	0.9	0.927	32.7	LOS D	29.7	747.3	1.00	1.69	29.5
16	R2	139	0.0	0.927	31.5	LOS D	29.7	747.3	1.00	1.68	27.2
Approach		1957	0.7	0.927	32.8	LOS D	29.7	747.3	1.00	1.69	29.2
North: SB El Dorado Dr (Future)											
7	L2	174	0.0	0.332	11.9	LOS B	2.5	63.0	1.00	1.00	31.9
4	T1	152	0.0	0.479	23.7	LOS C	3.1	77.5	0.94	1.05	28.4
14	R2	107	0.0	0.164	7.4	LOS A	1.1	27.9	0.94	0.88	34.8
Approach		433	0.0	0.479	15.0	LOS B	3.1	77.5	0.96	0.98	31.4
West: EB Boronda Rd											
5u	U	69	0.0	0.678	14.9	LOS B	8.2	206.4	0.78	0.97	34.3
5	L2	100	0.0	0.678	14.9	LOS B	8.2	206.4	0.78	0.97	32.4
2	T1	1095	2.0	0.678	14.1	LOS B	8.5	215.5	0.77	0.94	34.1
12	R2	101	0.0	0.678	13.4	LOS B	8.5	215.5	0.77	0.92	33.1
Approach		1365	1.6	0.678	14.2	LOS B	8.5	215.5	0.77	0.94	34.0
All Vehicles		4283	0.8	0.927	21.8	LOS C	29.7	747.3	0.90	1.27	31.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	233	0.0	0.396	12.0	LOS B	1.7	43.3	0.75	0.80	32.3
8	T1	780	1.6	0.576	15.2	LOS C	3.7	94.0	0.80	0.92	29.3
18	R2	426	0.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		1439	0.9	0.576	10.2	LOS B	3.7	94.0	0.56	0.63	32.4
East: WB Boronda Rd											
1	L2	301	0.0	0.672	17.2	LOS C	5.7	143.7	0.80	1.01	28.5
6	T1	1380	0.6	0.672	15.8	LOS C	6.4	161.8	0.80	1.01	35.2
16	R2	338	1.6	0.329	6.9	LOS A	1.6	41.5	0.64	0.62	36.1
Approach		2019	0.7	0.672	14.5	LOS B	6.4	161.8	0.78	0.94	34.6
North: SB Natividad Rd											
7	L2	374	0.0	0.718	26.1	LOS D	5.6	139.6	0.89	1.13	27.6
4	T1	1091	0.0	0.906	42.9	LOS E	14.0	350.2	0.97	1.53	19.8
14	R2	128	0.0	0.161	6.2	LOS A	0.8	19.6	0.74	0.74	38.0
Approach		1593	0.0	0.906	36.0	LOS E	14.0	350.2	0.93	1.37	23.2
West: EB Boronda Rd											
5u	U	1	0.0	0.694	24.8	LOS C	5.2	130.3	0.88	1.10	32.3
5	L2	174	0.0	0.694	24.8	LOS C	5.2	130.3	0.88	1.10	30.9
2	T1	1018	0.3	0.694	22.4	LOS C	6.2	155.7	0.90	1.12	33.0
12	R2	179	0.0	0.227	7.0	LOS A	1.2	30.0	0.76	0.76	36.0
Approach		1372	0.2	0.694	20.7	LOS C	6.2	155.7	0.88	1.07	32.9
All Vehicles		6422	0.5	0.906	20.2	LOS C	14.0	350.2	0.79	1.00	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	528	0.4	0.293	7.1	LOS A	1.8	44.1	0.76	0.73	31.5
8	T1	119	0.0	0.245	7.6	LOS A	1.2	31.2	0.74	0.74	33.0
18	R2	63	0.0	0.245	7.6	LOS A	1.2	31.2	0.74	0.74	32.7
Approach		710	0.3	0.293	7.2	LOS A	1.8	44.1	0.75	0.73	31.8
East: WB Boronda Rd											
1	L2	19	0.0	0.616	12.7	LOS B	5.2	130.9	0.68	0.86	31.6
6	T1	1288	0.3	0.616	11.8	LOS B	5.5	139.0	0.68	0.84	33.3
16	R2	189	0.0	0.134	3.6	LOS A	0.6	13.9	0.28	0.16	35.6
Approach		1496	0.3	0.616	10.7	LOS B	5.5	139.0	0.63	0.76	33.5
North: SB Independence Blvd (Future)											
7	L2	145	0.0	0.519	13.4	LOS B	3.7	91.6	0.87	0.99	31.4
4	T1	211	0.0	0.519	13.4	LOS B	3.7	91.6	0.87	0.99	29.1
14	R2	129	0.0	0.187	7.3	LOS A	1.0	24.1	0.79	0.79	33.6
Approach		485	0.0	0.519	11.8	LOS B	3.7	91.6	0.85	0.93	31.1
West: EB Boronda Rd											
5u	U	1	0.0	0.500	9.5	LOS A	3.7	92.9	0.66	0.53	34.5
5	L2	87	0.0	0.500	9.5	LOS A	3.7	92.9	0.66	0.53	33.3
2	T1	1051	0.8	0.500	8.7	LOS A	4.0	99.5	0.65	0.50	34.3
12	R2	566	0.3	0.339	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1704	0.6	0.500	5.9	LOS A	4.0	99.5	0.43	0.34	34.9
All Vehicles		4396	0.4	0.616	8.4	LOS A	5.5	139.0	0.60	0.61	33.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	817	145	30	1048	120	177	17	42	142	23	103
Future Volume (veh/h)	152	817	145	30	1048	120	177	17	42	142	23	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	165	918	148	34	1178	48	199	18	38	154	25	87
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	2	2	2	2	2	2	2
Cap, veh/h	184	1324	213	44	1268	583	229	21	44	175	28	99
Arrive On Green	0.10	0.45	0.45	0.03	0.37	0.37	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1774	2966	478	1723	3438	1581	1365	123	261	992	161	561
Grp Volume(v), veh/h	165	532	534	34	1178	48	255	0	0	266	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1725	1723	1719	1581	1749	0	0	1714	0	0
Q Serve(g_s), s	8.0	21.6	21.6	1.7	28.6	1.7	12.4	0.0	0.0	13.2	0.0	0.0
Cycle Q Clear(g_c), s	8.0	21.6	21.6	1.7	28.6	1.7	12.4	0.0	0.0	13.2	0.0	0.0
Prop In Lane	1.00		0.28	1.00		1.00	0.78		0.15	0.58		0.33
Lane Grp Cap(c), veh/h	184	767	770	44	1268	583	294	0	0	302	0	0
V/C Ratio(X)	0.90	0.69	0.69	0.77	0.93	0.08	0.87	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	184	767	770	79	1305	600	322	0	0	315	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.5	19.3	19.3	42.1	26.4	17.9	35.2	0.0	0.0	34.9	0.0	0.0
Incr Delay (d2), s/veh	39.2	2.7	2.7	23.4	11.6	0.1	20.4	0.0	0.0	23.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	10.8	10.8	1.1	15.5	0.8	7.6	0.0	0.0	8.2	0.0	0.0
LnGrp Delay(d),s/veh	77.7	22.0	22.0	65.5	38.0	17.9	55.6	0.0	0.0	58.3	0.0	0.0
LnGrp LOS	E	C	C	E	D	B	E			E		
Approach Vol, veh/h		1231			1260			255			266	
Approach Delay, s/veh		29.5			37.9			55.6			58.3	
Approach LOS		C			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	42.8		19.3	13.0	36.0		18.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	9.0	33.0		16.0
Max Q Clear Time (g_c+I1), s	3.7	23.6		15.2	10.0	30.6		14.4
Green Ext Time (p_c), s	0.0	11.1		0.1	0.0	1.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	5	4	101	119	8
Future Vol, veh/h	11	5	4	101	119	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	5	4	110	129	9
Number of Lanes	1	1	0	2	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8	7.8	7.8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	11%	0%	100%	0%	0%	0%
Vol Thru, %	89%	100%	0%	0%	100%	83%
Vol Right, %	0%	0%	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	67	11	5	79	48
LT Vol	4	0	11	0	0	0
Through Vol	34	67	0	0	79	40
RT Vol	0	0	0	5	0	8
Lane Flow Rate	41	73	12	5	86	52
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.053	0.094	0.019	0.007	0.111	0.065
Departure Headway (Hd)	4.687	4.633	5.622	4.419	4.621	4.503
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	760	769	641	815	773	792
Service Time	2.438	2.385	3.322	2.119	2.368	2.25
HCM Lane V/C Ratio	0.054	0.095	0.019	0.006	0.111	0.066
HCM Control Delay	7.7	7.9	8.4	7.2	7.9	7.6
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0	0.4	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	326	114	248	306	219	36	529	259	173	627	135
Future Volume (veh/h)	142	326	114	248	306	219	36	529	259	173	627	135
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	163	375	21	285	352	60	41	608	245	199	721	70
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	790	330	334	541	451	353	1347	531	304	1347	405
Arrive On Green	0.12	0.22	0.22	0.19	0.29	0.29	0.20	0.38	0.36	0.09	0.26	0.26
Sat Flow, veh/h	1774	3539	1477	1774	1863	1552	1774	3588	1414	3442	5085	1530
Grp Volume(v), veh/h	163	375	21	285	352	60	41	574	279	199	721	70
Grp Sat Flow(s),veh/h/ln	1774	1770	1477	1774	1863	1552	1774	1695	1612	1721	1695	1530
Q Serve(g_s), s	11.4	11.8	0.9	19.9	21.2	3.7	2.4	16.3	17.0	7.2	15.5	3.2
Cycle Q Clear(g_c), s	11.4	11.8	0.9	19.9	21.2	3.7	2.4	16.3	17.0	7.2	15.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		1.00
Lane Grp Cap(c), veh/h	214	790	330	334	541	451	353	1273	605	304	1347	405
V/C Ratio(X)	0.76	0.47	0.06	0.85	0.65	0.13	0.12	0.45	0.46	0.66	0.54	0.17
Avail Cap(c_a), veh/h	255	998	417	457	738	615	353	1273	605	371	1347	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	43.2	15.1	50.3	39.7	33.5	42.1	30.1	31.0	56.5	40.3	18.1
Incr Delay (d2), s/veh	8.3	0.2	0.0	8.6	0.5	0.0	0.1	1.2	2.5	1.6	1.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	5.8	0.4	10.5	10.9	1.6	1.2	7.9	8.0	3.5	7.5	1.5
LnGrp Delay(d),s/veh	62.8	43.4	15.2	58.8	40.2	33.6	42.1	31.2	33.5	58.1	41.8	19.0
LnGrp LOS	E	D	B	E	D	C	D	C	C	E	D	B
Approach Vol, veh/h		559			697			894			990	
Approach Delay, s/veh		48.0			47.2			32.4			43.5	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	52.0	28.1	32.6	29.4	37.9	19.5	41.2
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6
Max Q Clear Time (g_c+I1), s	9.2	19.0	21.9	13.8	4.4	17.5	13.4	23.2
Green Ext Time (p_c), s	0.0	1.6	0.1	1.6	0.7	1.8	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	0	323	0	0	0	308	967	0	6	1480	222
Future Volume (veh/h)	235	0	323	0	0	0	308	967	0	6	1480	222
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	290	0	63				380	1194	0	7	1827	258
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.81	0.81	0.81				0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	451	0	208				462	3509	0	19	1979	277
Arrive On Green	0.13	0.00	0.13				0.26	0.69	0.00	0.01	0.44	0.42
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4496	629
Grp Volume(v), veh/h	290	0	63				380	1194	0	7	1373	712
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1734
Q Serve(g_s), s	5.7	0.0	2.6				14.4	6.8	0.0	0.3	27.2	27.9
Cycle Q Clear(g_c), s	5.7	0.0	2.6				14.4	6.8	0.0	0.3	27.2	27.9
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.36
Lane Grp Cap(c), veh/h	451	0	208				462	3509	0	19	1492	764
V/C Ratio(X)	0.64	0.00	0.30				0.82	0.34	0.00	0.36	0.92	0.93
Avail Cap(c_a), veh/h	1469	0	676				745	3509	0	497	1495	765
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	28.1				24.9	4.5	0.0	35.1	18.8	19.3
Incr Delay (d2), s/veh	1.5	0.0	0.8				7.8	0.1	0.0	4.2	9.6	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.4				8.1	3.1	0.0	0.2	14.6	17.1
LnGrp Delay(d),s/veh	31.0	0.0	28.9				32.6	4.5	0.0	39.3	28.4	37.3
LnGrp LOS	C		C				C	A		D	C	D
Approach Vol, veh/h		353						1574			2092	
Approach Delay, s/veh		30.6						11.3			31.5	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	4.8	53.3		13.4	22.6	35.5		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.3	8.8		7.7	16.4	29.9		
Green Ext Time (p_c), s	0.0	19.1		1.2	2.2	0.1		

Intersection Summary		
HCM 2010 Ctrl Delay		23.5
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	589	87	6	1131	52	156	73	12	58	91	589
Future Volume (veh/h)	285	589	87	6	1131	52	156	73	12	58	91	589
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	303	627	87	6	1203	53	166	78	7	62	97	326
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	1713	237	64	1291	57	316	498	45	407	552	458
Arrive On Green	0.21	0.55	0.52	0.04	0.37	0.35	0.30	0.30	0.28	0.30	0.30	0.30
Sat Flow, veh/h	1774	3123	433	1774	3452	152	948	1681	151	1281	1863	1545
Grp Volume(v), veh/h	303	355	359	6	616	640	166	0	85	62	97	326
Grp Sat Flow(s),veh/h/ln	1774	1770	1786	1774	1770	1835	948	0	1831	1281	1863	1545
Q Serve(g_s), s	16.4	11.4	11.6	0.3	33.7	33.8	15.9	0.0	3.5	3.8	3.9	19.0
Cycle Q Clear(g_c), s	16.4	11.4	11.6	0.3	33.7	33.8	19.8	0.0	3.5	7.2	3.9	19.0
Prop In Lane	1.00		0.24	1.00		0.08	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	374	971	980	64	662	686	316	0	543	407	552	458
V/C Ratio(X)	0.81	0.37	0.37	0.09	0.93	0.93	0.53	0.00	0.16	0.15	0.18	0.71
Avail Cap(c_a), veh/h	399	971	980	399	662	686	398	0	701	518	713	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	12.9	13.1	47.0	30.3	30.5	33.7	0.0	26.2	28.8	26.3	31.6
Incr Delay (d2), s/veh	11.3	0.2	0.2	0.6	20.0	19.7	1.4	0.0	0.1	0.2	0.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	5.6	5.7	0.2	20.1	20.8	4.3	0.0	1.8	1.4	2.0	8.4
LnGrp Delay(d),s/veh	49.2	13.1	13.3	47.6	50.4	50.2	35.0	0.0	26.4	29.0	26.5	34.4
LnGrp LOS	D	B	B	D	D	D	D		C	C	C	C
Approach Vol, veh/h		1017			1262			251			485	
Approach Delay, s/veh		23.9			50.3			32.1			32.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	59.3		33.9	25.2	41.7		33.9
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	2.3	13.6		21.0	18.4	35.8		21.8
Green Ext Time (p_c), s	0.0	12.6		3.0	0.2	0.0		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	139	101	324	187	99	63	688	221	122	650	112
Future Volume (veh/h)	155	139	101	324	187	99	63	688	221	122	650	112
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	172	154	15	360	208	54	70	764	224	136	722	45
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	249	394	38	448	706	179	123	926	271	166	1301	581
Arrive On Green	0.14	0.12	0.14	0.25	0.25	0.23	0.07	0.35	0.33	0.10	0.38	0.38
Sat Flow, veh/h	1774	3263	314	1774	2797	710	1723	2624	769	1723	3438	1536
Grp Volume(v), veh/h	172	83	86	360	130	132	70	501	487	136	722	45
Grp Sat Flow(s),veh/h/ln	1774	1770	1807	1774	1770	1737	1723	1719	1674	1723	1719	1536
Q Serve(g_s), s	9.4	4.4	4.5	19.3	6.0	6.3	4.0	27.0	27.1	7.9	16.8	1.9
Cycle Q Clear(g_c), s	9.4	4.4	4.5	19.3	6.0	6.3	4.0	27.0	27.1	7.9	16.8	1.9
Prop In Lane	1.00		0.17	1.00		0.41	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	249	214	219	448	447	439	123	607	591	166	1301	581
V/C Ratio(X)	0.69	0.39	0.39	0.80	0.29	0.30	0.57	0.83	0.83	0.82	0.56	0.08
Avail Cap(c_a), veh/h	402	366	374	647	645	633	272	644	627	272	1301	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	41.1	41.0	35.6	30.6	31.1	45.6	30.0	30.4	45.0	24.8	20.2
Incr Delay (d2), s/veh	3.4	1.1	1.2	4.8	0.4	0.4	4.1	8.3	8.5	9.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	2.2	2.3	10.0	3.0	3.1	2.0	14.2	13.9	4.2	8.0	0.8
LnGrp Delay(d),s/veh	44.9	42.3	42.2	40.4	31.0	31.4	49.8	38.2	38.9	54.5	25.4	20.3
LnGrp LOS	D	D	D	D	C	C	D	D	D	D	C	C
Approach Vol, veh/h		341			622			1058			903	
Approach Delay, s/veh		43.6			36.5			39.3			29.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	42.4		29.6	13.8	39.8		18.3
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	6.0	18.8		21.3	9.9	29.1		11.4
Green Ext Time (p_c), s	0.1	10.0		2.3	0.2	4.7		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	849	255	0	1160	268	0	0	0	224	0	360
Future Volume (veh/h)	0	849	255	0	1160	268	0	0	0	224	0	360
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	894	0	0	1221	0				236	0	359
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1897	849	0	1897	0				1000	0	460
Arrive On Green	0.00	0.55	0.00	0.00	0.55	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	894	0	0	1221	0				236	0	359
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	8.0	0.0	0.0	12.5	0.0				2.7	0.0	10.6
Cycle Q Clear(g_c), s	0.0	8.0	0.0	0.0	12.5	0.0				2.7	0.0	10.6
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1897	849	0	1897	0				1000	0	460
V/C Ratio(X)	0.00	0.47	0.00	0.00	0.64	0.00				0.24	0.00	0.78
Avail Cap(c_a), veh/h	0	2782	1244	0	2782	0				2751	0	1265
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	0.0	0.0	7.9	0.0				13.7	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0				0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	5.8	0.0				1.3	0.0	4.9
LnGrp Delay(d),s/veh	0.0	7.0	0.0	0.0	8.0	0.0				13.8	0.0	18.7
LnGrp LOS		A			A					B		B
Approach Vol, veh/h		894			1221						595	
Approach Delay, s/veh		7.0			8.0						16.8	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		32.0		18.8		32.0		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		40.0		40.0		40.0		
Max Q Clear Time (g_c+I1), s		10.0		12.6		14.5		
Green Ext Time (p_c), s		13.3		1.6		12.4		

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	816	280	0	1169	259	244	0	123	0	0	0
Future Volume (vph)	0	816	280	0	1169	259	244	0	123	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3330		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3330		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	887	304	0	1271	282	265	0	134	0	0	0
RTOR Reduction (vph)	0	0	100	0	21	0	0	0	107	0	0	0
Lane Group Flow (vph)	0	887	204	0	1532	0	132	133	27	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		45.8	45.8		45.8		13.5	13.5	13.5			
Effective Green, g (s)		46.4	45.8		46.4		13.7	13.7	13.7			
Actuated g/C Ratio		0.68	0.67		0.68		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2342	1034		2268		338	338	318			
v/s Ratio Prot		0.26			c0.46		0.08	c0.08				
v/s Ratio Perm			0.13						0.02			
v/c Ratio		0.38	0.20		0.68		0.39	0.39	0.08			
Uniform Delay, d1		4.7	4.2		6.4		23.6	23.6	22.1			
Progression Factor		1.00	1.00		0.52		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		0.7		0.3	0.3	0.0			
Delay (s)		4.8	4.3		4.0		23.9	23.9	22.1			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		4.6			4.0			23.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	13.4
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	431	70	133	515	74	67	580	113	144	797	122
Future Volume (veh/h)	177	431	70	133	515	74	67	580	113	144	797	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	197	479	66	148	572	72	74	644	52	160	886	123
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	248	781	107	188	684	86	181	1527	679	265	2054	284
Arrive On Green	0.14	0.26	0.24	0.11	0.22	0.21	0.05	0.43	0.43	0.08	0.46	0.44
Sat Flow, veh/h	1723	3035	416	1723	3068	385	3442	3539	1575	3442	4508	623
Grp Volume(v), veh/h	197	270	275	148	320	324	74	644	52	160	665	344
Grp Sat Flow(s),veh/h/ln	1723	1719	1732	1723	1719	1734	1721	1770	1575	1721	1695	1741
Q Serve(g_s), s	14.1	17.7	18.0	10.7	22.7	22.9	2.7	16.2	2.5	5.8	17.0	17.3
Cycle Q Clear(g_c), s	14.1	17.7	18.0	10.7	22.7	22.9	2.7	16.2	2.5	5.8	17.0	17.3
Prop In Lane	1.00		0.24	1.00		0.22	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	248	442	446	188	383	387	181	1527	679	265	1545	793
V/C Ratio(X)	0.80	0.61	0.62	0.79	0.83	0.84	0.41	0.42	0.08	0.60	0.43	0.43
Avail Cap(c_a), veh/h	256	604	609	188	537	542	296	1527	679	323	1545	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	41.9	42.2	55.5	47.5	47.8	58.7	25.3	21.4	57.2	23.6	23.9
Incr Delay (d2), s/veh	14.2	0.5	0.5	17.8	5.6	5.8	0.5	0.9	0.2	0.8	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	8.5	8.6	6.0	11.4	11.6	1.3	8.1	1.1	2.8	8.1	8.6
LnGrp Delay(d),s/veh	67.2	42.4	42.7	73.4	53.1	53.6	59.2	26.2	21.6	58.0	24.5	25.6
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		742			792			770			1169	
Approach Delay, s/veh		49.1			57.1			29.0			29.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	59.2	18.0	36.9	10.7	62.3	22.4	32.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	38.9	11.9	42.9	8.9	39.9	16.9	37.9
Max Q Clear Time (g_c+I1), s	7.8	18.2	12.7	20.0	4.7	19.3	16.1	24.9
Green Ext Time (p_c), s	0.0	4.4	0.0	1.1	0.0	4.4	0.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	525	87	703	655	311	45	1151	538	343	1403	61
Future Volume (veh/h)	132	525	87	703	655	311	45	1151	538	343	1403	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	157	625	0	837	780	0	54	1370	608	408	1670	71
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	196	748	334	665	1052	471	93	1153	1463	499	1446	61
Arrive On Green	0.11	0.22	0.00	0.20	0.31	0.00	0.05	0.33	0.33	0.14	0.42	0.40
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2761	3442	3460	146
Grp Volume(v), veh/h	157	625	0	837	780	0	54	1370	608	408	850	891
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1381	1721	1770	1837
Q Serve(g_s), s	13.0	25.4	0.0	29.0	29.7	0.0	4.3	47.5	19.4	16.8	61.0	61.0
Cycle Q Clear(g_c), s	13.0	25.4	0.0	29.0	29.7	0.0	4.3	47.5	19.4	16.8	61.0	61.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	196	748	334	665	1052	471	93	1153	1463	499	740	768
V/C Ratio(X)	0.80	0.84	0.00	1.26	0.74	0.00	0.58	1.19	0.42	0.82	1.15	1.16
Avail Cap(c_a), veh/h	313	919	411	665	1052	471	268	1153	1463	590	740	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	54.6	0.0	58.4	45.4	0.0	67.5	49.2	20.8	60.5	42.4	42.5
Incr Delay (d2), s/veh	3.0	5.3	0.0	128.5	2.7	0.0	2.1	93.7	0.1	6.5	82.6	86.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	12.6	0.0	25.2	14.5	0.0	2.2	38.1	7.4	8.4	46.6	49.1
LnGrp Delay(d),s/veh	66.0	59.9	0.0	186.9	48.1	0.0	69.6	142.9	21.0	67.0	125.0	128.6
LnGrp LOS	E	E		F	D		E	F	C	E	F	F
Approach Vol, veh/h		782			1617			2032			2149	
Approach Delay, s/veh		61.1			119.9			104.4			115.5	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	51.5	33.0	36.2	11.7	65.0	20.6	48.6
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	23.0	45.0	27.0	* 37	20.0	46.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	18.8	49.5	31.0	27.4	6.3	63.0	15.0	31.7
Green Ext Time (p_c), s	0.4	0.0	0.0	2.4	0.0	0.0	0.1	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	106.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	821	533	597	255	401	1319
Future Volume (veh/h)	821	533	597	255	401	1319
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	912	592	663	0	446	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1143	2469	1123	503	629	289
Arrive On Green	0.34	0.72	0.33	0.00	0.18	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	912	592	663	0	446	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	19.9	4.7	13.0	0.0	9.8	0.0
Cycle Q Clear(g_c), s	19.9	4.7	13.0	0.0	9.8	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1143	2469	1123	503	629	289
V/C Ratio(X)	0.80	0.24	0.59	0.00	0.71	0.00
Avail Cap(c_a), veh/h	1946	3960	1788	800	1343	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.1	3.9	22.7	0.0	31.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.5	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	2.2	6.2	0.0	4.8	0.0
LnGrp Delay(d),s/veh	25.4	3.9	23.2	0.0	32.5	0.0
LnGrp LOS	C	A	C		C	
Approach Vol, veh/h		1504	663		446	
Approach Delay, s/veh		16.9	23.2		32.5	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.0		18.8	31.6	30.4		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		6.7		11.8	21.9	15.0		
Green Ext Time (p_c), s		11.7		1.4	3.7	9.4		

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	757.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	692	352	69	477	404	11
Future Vol, veh/h	692	352	69	477	404	11
Conflicting Peds, #/hr	0	15	15	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	899	457	90	619	525	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1371	0	1941	1142
Stage 1	-	-	-	-	1142	-
Stage 2	-	-	-	-	799	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	491	-	~ 72	244
Stage 1	-	-	-	-	~ 304	-
Stage 2	-	-	-	-	~ 443	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	491	-	~ 58	241
Mov Cap-2 Maneuver	-	-	-	-	~ 58	-
Stage 1	-	-	-	-	~ 300	-
Stage 2	-	-	-	-	~ 362	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	$ 3657.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	58	241	-	-	491	-
HCM Lane V/C Ratio	9.046	0.059	-	-	0.183	-
HCM Control Delay (s)	$ 3756.3	20.9	-	-	14	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	61.5	0.2	-	-	0.7	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	164	0	49	0	0	0	48	40	0	1	33	182
Future Vol, veh/h	164	0	49	0	0	0	48	40	0	1	33	182
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	0	58	0	0	0	57	48	0	1	39	217

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	312	312	148	341	420	48	256	0	0	48	0	0
Stage 1	150	150	-	162	162	-	-	-	-	-	-	-
Stage 2	162	162	-	179	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	641	603	899	613	525	1021	1309	-	-	1559	-	-
Stage 1	853	773	-	840	764	-	-	-	-	-	-	-
Stage 2	840	764	-	823	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	618	575	899	553	501	1021	1309	-	-	1559	-	-
Mov Cap-2 Maneuver	618	575	-	553	501	-	-	-	-	-	-	-
Stage 1	815	772	-	802	730	-	-	-	-	-	-	-
Stage 2	802	730	-	769	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	0	4.3	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1309	-	-	666	-	1559	-	-
HCM Lane V/C Ratio	0.044	-	-	0.381	-	0.001	-	-
HCM Control Delay (s)	7.9	0	-	13.7	0	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	33	144	754	59	37	200	691	483	57	963	11
Future Volume (veh/h)	12	33	144	754	59	37	200	691	483	57	963	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	15	40	13	920	72	13	244	843	268	70	1174	12
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	139	114	995	538	456	436	1577	686	117	1378	14
Arrive On Green	0.07	0.07	0.07	0.29	0.29	0.29	0.25	0.45	0.45	0.07	0.27	0.25
Sat Flow, veh/h	1774	1863	1526	3442	1863	1578	1774	3539	1540	1774	5188	53
Grp Volume(v), veh/h	15	40	13	920	72	13	244	843	268	70	767	419
Grp Sat Flow(s),veh/h/ln	1774	1863	1526	1721	1863	1578	1774	1770	1540	1774	1695	1851
Q Serve(g_s), s	1.0	2.6	1.0	33.2	3.7	0.8	15.4	22.2	15.0	4.9	27.5	27.5
Cycle Q Clear(g_c), s	1.0	2.6	1.0	33.2	3.7	0.8	15.4	22.2	15.0	4.9	27.5	27.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	132	139	114	995	538	456	436	1577	686	117	901	492
V/C Ratio(X)	0.11	0.29	0.11	0.92	0.13	0.03	0.56	0.53	0.39	0.60	0.85	0.85
Avail Cap(c_a), veh/h	402	422	346	995	538	456	436	1577	686	152	901	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	56.0	55.3	44.1	33.6	32.6	42.2	25.8	23.8	58.1	44.6	44.6
Incr Delay (d2), s/veh	0.1	0.4	0.2	13.7	0.0	0.0	1.0	1.3	1.7	1.8	10.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	0.4	17.6	1.9	0.3	7.6	11.1	6.6	2.5	14.1	16.4
LnGrp Delay(d),s/veh	55.4	56.4	55.5	57.8	33.7	32.6	43.2	27.1	25.5	59.9	54.6	61.5
LnGrp LOS	E	E	E	E	C	C	D	C	C	E	D	E
Approach Vol, veh/h		68			1005			1355			1256	
Approach Delay, s/veh		56.0			55.7			29.7			57.2	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	61.0		13.5	35.5	38.0		41.0
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	9.9	31.9		34.9
Max Q Clear Time (g_c+I1), s	6.9	24.2		4.6	17.4	29.5		35.2
Green Ext Time (p_c), s	0.0	1.9		0.1	0.0	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	5	91	12	14	26	53	1278	5	18	1837	359
Future Volume (veh/h)	340	5	91	12	14	26	53	1278	5	18	1837	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	391	6	36	14	16	10	61	1469	6	21	2111	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	4	562	47	48	16	121	1754	7	74	1624	0
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.34	0.07	0.49	0.46	0.04	0.46	0.00
Sat Flow, veh/h	654	10	1574	0	134	45	1774	3615	15	1774	3632	0
Grp Volume(v), veh/h	397	0	36	40	0	0	61	719	756	21	2111	0
Grp Sat Flow(s),veh/h/ln	664	0	1574	179	0	0	1774	1770	1860	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.6	0.0	0.0	0.0	3.4	36.5	36.5	1.2	47.5	0.0
Cycle Q Clear(g_c), s	37.0	0.0	1.6	37.0	0.0	0.0	3.4	36.5	36.5	1.2	47.5	0.0
Prop In Lane	0.98		1.00	0.35		0.25	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	562	111	0	0	121	858	902	74	1624	0
V/C Ratio(X)	1.30	0.00	0.06	0.36	0.00	0.00	0.51	0.84	0.84	0.28	1.30	0.00
Avail Cap(c_a), veh/h	306	0	562	111	0	0	557	858	902	557	1624	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.4	0.0	21.9	27.3	0.0	0.0	46.6	23.1	23.1	48.1	28.0	0.0
Incr Delay (d2), s/veh	155.0	0.0	0.0	0.7	0.0	0.0	1.2	6.9	6.6	0.8	139.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	0.0	0.7	0.8	0.0	0.0	1.7	19.4	20.4	0.6	54.5	0.0
LnGrp Delay(d),s/veh	192.5	0.0	21.9	28.1	0.0	0.0	47.8	30.0	29.8	48.9	167.8	0.0
LnGrp LOS	F		C	C			D	C	C	D	F	
Approach Vol, veh/h		433			40			1536			2132	
Approach Delay, s/veh		178.3			28.1			30.6			166.6	
Approach LOS		F			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	54.2		41.0	11.0	51.5		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	3.2	38.5		39.0	5.4	49.5		39.0
Green Ext Time (p_c), s	0.0	6.0		0.0	0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	307	131	16	560	223	113	367	30	177	392	317
Future Volume (veh/h)	170	307	131	16	560	223	113	367	30	177	392	317
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	185	334	114	17	609	67	123	399	11	192	426	193
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	281	996	333	21	1156	497	159	1042	466	288	549	465
Arrive On Green	0.08	0.40	0.39	0.01	0.33	0.33	0.09	0.29	0.29	0.09	0.30	0.30
Sat Flow, veh/h	3343	2498	834	1774	3539	1521	1774	3539	1582	3343	1810	1535
Grp Volume(v), veh/h	185	227	221	17	609	67	123	399	11	192	426	193
Grp Sat Flow(s),veh/h/ln	1672	1719	1614	1774	1770	1521	1774	1770	1582	1672	1810	1535
Q Serve(g_s), s	4.4	7.5	7.8	0.8	11.4	2.5	5.5	7.3	0.4	4.5	17.5	8.2
Cycle Q Clear(g_c), s	4.4	7.5	7.8	0.8	11.4	2.5	5.5	7.3	0.4	4.5	17.5	8.2
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	686	644	21	1156	497	159	1042	466	288	549	465
V/C Ratio(X)	0.66	0.33	0.34	0.81	0.53	0.13	0.77	0.38	0.02	0.67	0.78	0.41
Avail Cap(c_a), veh/h	1231	686	644	653	1586	682	653	1304	583	1231	689	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	17.0	17.1	40.2	22.3	19.3	36.2	22.8	20.4	36.1	25.9	22.6
Incr Delay (d2), s/veh	2.6	0.3	0.3	50.9	0.4	0.1	7.7	0.2	0.0	2.6	4.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.6	3.5	0.7	5.6	1.1	3.0	3.6	0.2	2.2	9.3	3.5
LnGrp Delay(d),s/veh	38.8	17.2	17.5	91.1	22.7	19.4	43.9	23.1	20.4	38.7	30.3	23.2
LnGrp LOS	D	B	B	F	C	B	D	C	C	D	C	C
Approach Vol, veh/h		633			693			533			811	
Approach Delay, s/veh		23.6			24.1			27.8			30.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	36.5	11.3	28.7	10.8	30.6	11.0	29.0
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	31.0	30.0	30.0	30.0	36.0	30.0	* 30
Max Q Clear Time (g_c+I1), s	2.8	9.8	7.5	19.5	6.4	13.4	6.5	9.3
Green Ext Time (p_c), s	0.0	7.2	0.3	4.1	0.6	6.7	0.6	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	15.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	342	165	180	53	56	531
Future Vol, veh/h	342	165	180	53	56	531
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	412	199	217	64	67	640

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	281	0	-	0	1272	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	1023	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1282	-	-	-	182	782
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	342	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1282	-	-	-	124	782
Mov Cap-2 Maneuver	-	-	-	-	124	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	232	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	30.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1282	-	-	-	124	782
HCM Lane V/C Ratio	0.321	-	-	-	0.544	0.818
HCM Control Delay (s)	9.1	-	-	-	64.2	26.7
HCM Lane LOS	A	-	-	-	F	D
HCM 95th %tile Q(veh)	1.4	-	-	-	2.6	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	176	18	98	292	11	37	410	106	8	537	214
Future Volume (veh/h)	116	176	18	98	292	11	37	410	106	8	537	214
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	129	196	4	109	324	10	41	456	52	9	597	122
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	206	413	351	182	727	22	139	794	660	74	726	610
Arrive On Green	0.12	0.23	0.23	0.11	0.21	0.19	0.08	0.43	0.43	0.04	0.39	0.39
Sat Flow, veh/h	1723	1810	1538	1723	3400	105	1774	1863	1549	1774	1863	1564
Grp Volume(v), veh/h	129	196	4	109	163	171	41	456	52	9	597	122
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1785	1774	1863	1549	1774	1863	1564
Q Serve(g_s), s	5.7	7.6	0.2	4.9	6.7	6.7	1.8	15.0	1.6	0.4	23.2	4.2
Cycle Q Clear(g_c), s	5.7	7.6	0.2	4.9	6.7	6.7	1.8	15.0	1.6	0.4	23.2	4.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	413	351	182	367	382	139	794	660	74	726	610
V/C Ratio(X)	0.63	0.48	0.01	0.60	0.44	0.45	0.30	0.57	0.08	0.12	0.82	0.20
Avail Cap(c_a), veh/h	494	945	803	323	727	755	273	794	660	266	788	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	26.9	24.1	34.4	27.5	27.6	35.1	17.6	13.7	37.2	22.1	16.3
Incr Delay (d2), s/veh	3.1	0.8	0.0	3.2	0.8	0.8	1.2	1.0	0.1	0.7	6.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.9	0.1	2.5	3.2	3.4	0.9	7.8	0.7	0.2	13.1	1.8
LnGrp Delay(d),s/veh	36.9	27.8	24.1	37.6	28.4	28.4	36.2	18.6	13.8	37.9	28.6	16.4
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		329			443			549			728	
Approach Delay, s/veh		31.3			30.7			19.4			26.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	22.4	10.3	35.4	13.6	21.2	7.4	38.4
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0
Max Q Clear Time (g_c+I1), s	6.9	9.6	3.8	25.2	7.7	8.7	2.4	17.0
Green Ext Time (p_c), s	0.1	3.2	0.0	3.6	0.2	3.0	0.0	6.5

Intersection Summary		
HCM 2010 Ctrl Delay		26.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	397	138	168	582	50	198	202	166	72	226	18
Future Volume (veh/h)	6	397	138	168	582	50	198	202	166	72	226	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	441	122	187	647	52	220	224	65	80	251	18
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	29	942	258	243	1538	123	361	681	558	379	627	45
Arrive On Green	0.02	0.36	0.33	0.14	0.48	0.46	0.37	0.37	0.37	0.37	0.37	0.35
Sat Flow, veh/h	1723	2649	726	1723	3204	257	1083	1863	1526	1063	1713	123
Grp Volume(v), veh/h	7	285	278	187	347	352	220	224	65	80	0	269
Grp Sat Flow(s),veh/h/ln	1723	1719	1655	1723	1719	1743	1083	1863	1526	1063	0	1835
Q Serve(g_s), s	0.4	11.2	11.5	9.1	11.5	11.6	16.5	7.6	2.5	5.1	0.0	9.5
Cycle Q Clear(g_c), s	0.4	11.2	11.5	9.1	11.5	11.6	26.1	7.6	2.5	12.7	0.0	9.5
Prop In Lane	1.00		0.44	1.00		0.15	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	29	611	589	243	825	836	361	681	558	379	0	671
V/C Ratio(X)	0.24	0.47	0.47	0.77	0.42	0.42	0.61	0.33	0.12	0.21	0.00	0.40
Avail Cap(c_a), veh/h	612	827	796	414	827	838	473	874	717	379	0	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	21.7	22.2	36.1	14.8	14.9	30.3	20.0	18.3	24.5	0.0	20.6
Incr Delay (d2), s/veh	4.2	1.2	1.3	5.1	0.7	0.7	1.7	0.3	0.1	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.5	5.4	4.7	5.6	5.7	5.1	3.9	1.1	1.5	0.0	4.9
LnGrp Delay(d),s/veh	46.6	22.9	23.4	41.2	15.5	15.6	31.9	20.2	18.4	24.8	0.0	21.0
LnGrp LOS	D	C	C	D	B	B	C	C	B	C		C
Approach Vol, veh/h		570			886			509			349	
Approach Delay, s/veh		23.5			21.0			25.1			21.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.3	35.1		35.9	5.5	45.9		35.9
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	11.1	13.5		14.7	2.4	13.6		28.1
Green Ext Time (p_c), s	0.3	15.6		4.0	0.0	15.5		2.9

Intersection Summary		
HCM 2010 Ctrl Delay		22.6
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	452	16	82	723	125	32	91	100	103	88	65
Future Volume (veh/h)	11	452	16	82	723	125	32	91	100	103	88	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	508	17	92	812	83	36	102	14	116	99	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	1370	46	153	1586	695	351	369	294	216	227	193
Arrive On Green	0.03	0.39	0.37	0.09	0.45	0.45	0.20	0.20	0.20	0.12	0.12	0.00
Sat Flow, veh/h	1774	3493	117	1774	3539	1552	1774	1863	1485	1774	1863	1583
Grp Volume(v), veh/h	12	257	268	92	812	83	36	102	14	116	99	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1840	1774	1770	1552	1774	1863	1485	1774	1863	1583
Q Serve(g_s), s	0.5	8.2	8.2	4.0	13.0	2.5	1.3	3.7	0.6	4.9	3.9	0.0
Cycle Q Clear(g_c), s	0.5	8.2	8.2	4.0	13.0	2.5	1.3	3.7	0.6	4.9	3.9	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	694	722	153	1586	695	351	369	294	216	227	193
V/C Ratio(X)	0.22	0.37	0.37	0.60	0.51	0.12	0.10	0.28	0.05	0.54	0.44	0.00
Avail Cap(c_a), veh/h	704	936	974	704	1872	821	704	739	589	480	504	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	17.2	17.2	34.9	15.7	12.8	26.1	27.0	25.8	32.8	32.3	0.0
Incr Delay (d2), s/veh	2.0	0.7	0.7	3.7	0.5	0.2	0.1	0.4	0.1	2.1	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.1	4.3	2.1	6.4	1.1	0.7	1.9	0.3	2.5	2.1	0.0
LnGrp Delay(d),s/veh	39.6	17.9	17.9	38.7	16.2	12.9	26.2	27.4	25.8	34.8	33.6	0.0
LnGrp LOS	D	B	B	D	B	B	C	C	C	C	C	
Approach Vol, veh/h		537			987			152			215	
Approach Delay, s/veh		18.4			18.1			27.0			34.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	35.1		13.7	6.4	39.6		19.7
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	6.0	10.2		6.9	2.5	15.0		5.7
Green Ext Time (p_c), s	0.2	18.9		0.7	0.0	16.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	98	33	208	136	18	57	262	171	16	496	303
Future Volume (veh/h)	164	98	33	208	136	18	57	262	171	16	496	303
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	191	114	5	242	158	0	66	305	119	19	577	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	675	29	303	427	363	341	826	316	110	1120	0
Arrive On Green	0.14	0.20	0.20	0.17	0.23	0.00	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	3452	150	1774	1863	1583	831	2502	956	42	3475	0
Grp Volume(v), veh/h	191	58	61	242	158	0	66	214	210	318	278	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1832	1774	1863	1583	831	1770	1688	1823	1610	0
Q Serve(g_s), s	4.1	1.1	1.1	5.2	2.8	0.0	2.8	3.6	3.8	0.0	5.5	0.0
Cycle Q Clear(g_c), s	4.1	1.1	1.1	5.2	2.8	0.0	8.3	3.6	3.8	5.5	5.5	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.57	0.06		0.00
Lane Grp Cap(c), veh/h	243	346	358	303	427	363	341	585	558	698	532	0
V/C Ratio(X)	0.79	0.17	0.17	0.80	0.37	0.00	0.19	0.37	0.38	0.46	0.52	0.00
Avail Cap(c_a), veh/h	897	1342	1389	1345	1553	1320	717	1386	1322	1497	1262	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.5	13.2	13.2	15.7	12.8	0.0	14.1	10.1	10.1	10.7	10.7	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	1.8	0.2	0.0	0.1	0.1	0.2	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.5	0.5	2.6	1.5	0.0	0.6	1.8	1.8	2.8	2.4	0.0
LnGrp Delay(d),s/veh	18.6	13.3	13.3	17.6	13.0	0.0	14.2	10.2	10.3	10.9	11.0	0.0
LnGrp LOS	B	B	B	B	B		B	B	B	B	B	
Approach Vol, veh/h		310			400			490			596	
Approach Delay, s/veh		16.6			15.8			10.8			10.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.8	11.7		17.1	9.4	13.1		17.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	7.2	3.1		7.5	6.1	4.8		10.3
Green Ext Time (p_c), s	0.1	0.5		2.3	0.1	0.5		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	135	85	357	323	18	67	340	344	58	523	292
Future Volume (veh/h)	179	135	85	357	323	18	67	340	344	58	523	292
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	213	161	20	425	385	4	80	405	152	69	623	199
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	258	639	78	258	714	318	124	1262	556	127	1269	565
Arrive On Green	0.15	0.20	0.18	0.15	0.20	0.20	0.07	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	1774	3169	388	1774	3539	1574	1723	3438	1515	1723	3438	1532
Grp Volume(v), veh/h	213	89	92	425	385	4	80	405	152	69	623	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1787	1774	1770	1574	1723	1719	1515	1723	1719	1532
Q Serve(g_s), s	8.8	3.2	3.3	11.0	7.4	0.2	3.4	6.4	5.3	2.9	10.6	7.1
Cycle Q Clear(g_c), s	8.8	3.2	3.3	11.0	7.4	0.2	3.4	6.4	5.3	2.9	10.6	7.1
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	357	361	258	714	318	124	1262	556	127	1269	565
V/C Ratio(X)	0.83	0.25	0.26	1.65	0.54	0.01	0.64	0.32	0.27	0.54	0.49	0.35
Avail Cap(c_a), veh/h	258	901	910	258	1803	802	365	1887	832	365	1887	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	25.4	25.5	32.3	27.0	24.1	34.1	17.2	16.8	33.8	18.4	17.3
Incr Delay (d2), s/veh	19.2	0.4	0.4	307.6	0.6	0.0	2.1	0.1	0.3	1.3	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	1.6	1.7	27.4	3.6	0.1	1.7	3.1	2.3	1.4	5.1	3.1
LnGrp Delay(d),s/veh	50.6	25.7	25.9	339.9	27.7	24.2	36.2	17.3	17.1	35.1	19.0	18.1
LnGrp LOS	D	C	C	F	C	C	D	B	B	D	B	B
Approach Vol, veh/h		394			814			637			891	
Approach Delay, s/veh		39.2			190.7			19.6			20.0	
Approach LOS		D			F			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	31.8	15.0	19.2	9.4	31.9	15.0	19.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	5.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	4.9	8.4	13.0	5.3	5.4	12.6	10.8	9.4
Green Ext Time (p_c), s	0.0	14.9	0.0	3.8	0.1	13.8	0.0	3.7

Intersection Summary		
HCM 2010 Ctrl Delay		73.5
HCM 2010 LOS		E

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	0	10	2	15	25	10	170	0	0	176	148
Future Vol, veh/h	86	0	10	2	15	25	10	170	0	0	176	148
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	137	0	16	3	24	40	16	270	0	0	279	235
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.2	9.5	10.5	11.5
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	90%	5%	0%	0%
Vol Thru, %	85%	100%	0%	36%	100%	0%
Vol Right, %	0%	0%	10%	60%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	113	96	42	176	148
LT Vol	10	0	86	2	0	0
Through Vol	57	113	0	15	176	0
RT Vol	0	0	10	25	0	148
Lane Flow Rate	106	180	152	67	279	235
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.173	0.291	0.256	0.107	0.437	0.322
Departure Headway (Hd)	5.899	5.823	6.052	5.755	5.637	4.93
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	608	617	594	622	640	731
Service Time	3.629	3.553	4.086	3.794	3.363	2.655
HCM Lane V/C Ratio	0.174	0.292	0.256	0.108	0.436	0.321
HCM Control Delay	9.9	10.9	11.2	9.5	12.7	10
HCM Lane LOS	A	B	B	A	B	A
HCM 95th-tile Q	0.6	1.2	1	0.4	2.2	1.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	171	13	2	12	22	426
Future Vol, veh/h	171	13	2	12	22	426
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	228	17	3	16	29	568

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	50	15	29	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	948	1052	1583	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	946	1052	1583	-	-	-
Mov Cap-2 Maneuver	946	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1583	-	946	1052	-	-
HCM Lane V/C Ratio	0.002	-	0.241	0.016	-	-
HCM Control Delay (s)	7.3	0	10	8.5	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.9	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	263	54	214	448	49	72	411	117	37	671	197
Future Volume (veh/h)	160	263	54	214	448	49	72	411	117	37	671	197
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	186	306	54	249	521	12	84	478	94	43	780	219
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	247	633	110	311	874	376	133	1416	628	80	1010	283
Arrive On Green	0.14	0.21	0.20	0.18	0.25	0.25	0.08	0.41	0.41	0.05	0.38	0.37
Sat Flow, veh/h	1774	3004	523	1774	3539	1524	1723	3438	1525	1723	2650	744
Grp Volume(v), veh/h	186	179	181	249	521	12	84	478	94	43	506	493
Grp Sat Flow(s),veh/h/ln	1774	1770	1757	1774	1770	1524	1723	1719	1525	1723	1719	1675
Q Serve(g_s), s	10.4	9.1	9.4	13.8	13.4	0.6	4.9	9.8	4.0	2.5	26.6	26.6
Cycle Q Clear(g_c), s	10.4	9.1	9.4	13.8	13.4	0.6	4.9	9.8	4.0	2.5	26.6	26.6
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	247	373	370	311	874	376	133	1416	628	80	655	638
V/C Ratio(X)	0.75	0.48	0.49	0.80	0.60	0.03	0.63	0.34	0.15	0.54	0.77	0.77
Avail Cap(c_a), veh/h	802	800	794	802	1600	689	779	1554	689	779	777	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	35.6	35.9	40.7	34.2	29.4	46.0	20.7	19.0	48.0	27.9	28.2
Incr Delay (d2), s/veh	4.6	1.0	1.0	4.7	0.7	0.0	4.9	0.1	0.1	5.6	4.1	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	4.6	4.7	7.2	6.6	0.3	2.5	4.7	1.7	1.3	13.2	13.0
LnGrp Delay(d),s/veh	47.2	36.6	36.9	45.4	34.9	29.4	50.9	20.8	19.1	53.5	32.0	32.4
LnGrp LOS	D	D	D	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		546			782			656			1042	
Approach Delay, s/veh		40.3			38.1			24.4			33.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	25.7	11.9	43.2	18.3	29.4	8.8	46.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	15.8	11.4	6.9	28.6	12.4	15.4	4.5	11.8
Green Ext Time (p_c), s	0.7	6.3	0.2	9.0	0.5	6.2	0.1	12.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.8
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	767	945	16	25	495
Future Volume (vph)	174	767	945	16	25	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3430		1770	1583
Flt Permitted	0.16	1.00	1.00		0.95	1.00
Satd. Flow (perm)	291	3438	3430		1770	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	198	872	1074	18	28	562
RTOR Reduction (vph)	0	0	1	0	0	343
Lane Group Flow (vph)	198	872	1091	0	28	220
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	41.2	45.8	32.1		13.5	13.5
Effective Green, g (s)	42.4	46.4	32.7		13.7	13.7
Actuated g/C Ratio	0.62	0.68	0.48		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	384	2342	1647		356	318
v/s Ratio Prot	c0.07	0.25	c0.32		0.02	
v/s Ratio Perm	0.25					c0.14
v/c Ratio	0.52	0.37	0.66		0.08	0.69
Uniform Delay, d1	7.5	4.6	13.5		22.1	25.2
Progression Factor	0.91	0.39	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.1	1.0		0.0	5.2
Delay (s)	7.3	1.9	14.5		22.1	30.4
Level of Service	A	A	B		C	C
Approach Delay (s)		2.9	14.5		30.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	12.2
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	214	16	826	1	262	13	278	789	138	242	16
Future Volume (veh/h)	20	214	16	826	1	262	13	278	789	138	242	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	22	235	14	908	1	0	14	305	536	152	266	15
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	82	476	28	1130	1505	673	74	789	1536	333	946	53
Arrive On Green	0.05	0.14	0.12	0.34	0.44	0.00	0.04	0.23	0.23	0.10	0.29	0.26
Sat Flow, veh/h	1774	3396	201	3343	3438	1538	1723	3438	2707	3343	3310	186
Grp Volume(v), veh/h	22	122	127	908	1	0	14	305	536	152	138	143
Grp Sat Flow(s),veh/h/ln	1774	1770	1827	1672	1719	1538	1723	1719	1354	1672	1719	1777
Q Serve(g_s), s	1.0	5.4	5.5	21.1	0.0	0.0	0.7	6.4	9.1	3.7	5.3	5.4
Cycle Q Clear(g_c), s	1.0	5.4	5.5	21.1	0.0	0.0	0.7	6.4	9.1	3.7	5.3	5.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	82	248	256	1130	1505	673	74	789	1536	333	491	508
V/C Ratio(X)	0.27	0.49	0.50	0.80	0.00	0.00	0.19	0.39	0.35	0.46	0.28	0.28
Avail Cap(c_a), veh/h	632	1106	1142	1250	2170	971	504	1688	2243	1211	964	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	34.0	34.1	25.8	13.5	0.0	39.5	27.9	10.0	36.3	23.7	23.8
Incr Delay (d2), s/veh	0.6	3.2	3.2	4.4	0.0	0.0	0.4	0.3	0.1	2.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.9	3.0	10.4	0.0	0.0	0.3	3.1	3.4	1.8	2.6	2.7
LnGrp Delay(d),s/veh	40.1	37.2	37.2	30.1	13.5	0.0	39.9	28.2	10.1	38.4	24.0	24.1
LnGrp LOS	D	D	D	C	B		D	C	B	D	C	C
Approach Vol, veh/h		271			909			855			433	
Approach Delay, s/veh		37.4			30.1			17.1			29.1	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.9	16.5	7.7	28.5	7.9	41.5	12.5	23.6
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	23.1	7.5	2.7	7.4	3.0	2.0	5.7	11.1
Green Ext Time (p_c), s	3.8	3.0	0.0	6.8	0.0	3.0	1.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	5	463	24	170	20	1043	224	219	1470	14
Future Volume (veh/h)	0	0	5	463	24	170	20	1043	224	219	1470	14
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				564	0	49	22	1227	0	258	1729	14
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.85	0.92	0.85	0.92	0.85	0.85	0.85	0.85	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				827	0	364	203	1409	599	321	2262	18
Arrive On Green				0.23	0.00	0.23	0.38	0.38	0.00	0.18	0.63	0.63
Sat Flow, veh/h				3548	0	1563	276	3725	1583	1774	3598	29
Grp Volume(v), veh/h				564	0	49	22	1227	0	258	850	893
Grp Sat Flow(s),veh/h/ln				1774	0	1563	276	1863	1583	1774	1770	1858
Q Serve(g_s), s				8.4	0.0	1.4	3.6	17.6	0.0	8.0	19.8	19.9
Cycle Q Clear(g_c), s				8.4	0.0	1.4	9.0	17.6	0.0	8.0	19.8	19.9
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h				827	0	364	203	1409	599	321	1112	1168
V/C Ratio(X)				0.68	0.00	0.13	0.11	0.87	0.00	0.80	0.76	0.77
Avail Cap(c_a), veh/h				2211	0	974	223	1677	713	491	1112	1168
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				20.2	0.0	17.5	16.1	16.7	0.0	22.7	7.7	7.7
Incr Delay (d2), s/veh				0.4	0.0	0.1	0.1	4.1	0.0	7.2	2.9	2.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.1	0.0	0.6	0.3	9.8	0.0	4.6	10.3	10.8
LnGrp Delay(d),s/veh				20.6	0.0	17.6	16.2	20.7	0.0	29.9	10.5	10.5
LnGrp LOS				C		B	B	C		C	B	B
Approach Vol, veh/h					613			1249			2001	
Approach Delay, s/veh					20.3			20.7			13.0	
Approach LOS					C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.5	25.8				40.3		17.5
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	10.0	19.6				21.9		10.4
Green Ext Time (p_c), s	0.6	2.2				2.9		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	664	0	0	641	933	1008
Future Volume (vph)	664	0	0	641	933	1008
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	820	0	0	791	1152	1244
RTOR Reduction (vph)	0	0	0	81	0	613
Lane Group Flow (vph)	820	0	0	710	1152	631
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	16.2			24.9	24.9	25.9
Effective Green, g (s)	17.2			25.9	25.9	25.9
Actuated g/C Ratio	0.34			0.51	0.51	0.51
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1679			1412	1740	1412
v/s Ratio Prot	c0.16			0.25	c0.34	0.23
v/s Ratio Perm						
v/c Ratio	0.49			0.50	0.66	0.45
Uniform Delay, d1	13.5			8.3	9.4	8.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.3	1.0	0.2
Delay (s)	13.7			8.6	10.3	8.3
Level of Service	B			A	B	A
Approach Delay (s)		13.7	8.6		9.2	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	487	506	12	101	521	200	24	230	48	170	336	623
Future Volume (veh/h)	487	506	12	101	521	200	24	230	48	170	336	623
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	560	582	13	116	599	0	28	264	45	195	386	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	655	1618	36	150	1217	545	59	451	76	292	505	0
Arrive On Green	0.19	0.46	0.45	0.09	0.35	0.00	0.03	0.15	0.14	0.17	0.28	0.00
Sat Flow, veh/h	3442	3539	79	1723	3438	1538	1774	3032	510	1723	1810	0
Grp Volume(v), veh/h	560	291	304	116	599	0	28	153	156	195	386	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1849	1723	1719	1538	1774	1770	1773	1723	1810	0
Q Serve(g_s), s	18.3	12.4	12.5	7.7	15.9	0.0	1.8	9.4	9.6	12.3	22.8	0.0
Cycle Q Clear(g_c), s	18.3	12.4	12.5	7.7	15.9	0.0	1.8	9.4	9.6	12.3	22.8	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h	655	809	845	150	1217	545	59	263	264	292	505	0
V/C Ratio(X)	0.86	0.36	0.36	0.77	0.49	0.00	0.47	0.58	0.59	0.67	0.76	0.00
Avail Cap(c_a), veh/h	1226	1240	1295	306	1795	803	327	925	927	466	1102	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	20.5	20.6	52.0	29.4	0.0	55.3	46.2	46.4	45.3	38.5	0.0
Incr Delay (d2), s/veh	1.3	1.0	0.9	3.1	1.1	0.0	2.2	7.2	7.5	1.0	8.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	6.3	6.6	3.8	7.7	0.0	0.9	5.1	5.2	6.0	12.6	0.0
LnGrp Delay(d),s/veh	46.9	21.5	21.5	55.1	30.5	0.0	57.5	53.3	53.9	46.3	46.9	0.0
LnGrp LOS	D	C	C	E	C		E	D	D	D	D	
Approach Vol, veh/h		1155			715			337			581	
Approach Delay, s/veh		33.8			34.5			54.0			46.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	57.2	7.9	37.2	26.2	45.2	23.7	21.3
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 20	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	9.7	14.5	3.8	24.8	20.3	17.9	14.3	11.6
Green Ext Time (p_c), s	0.0	27.8	0.0	5.3	0.3	22.6	3.9	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	680	0	0	983	68	62	752	101	0	0	0
Future Volume (veh/h)	198	680	0	0	983	68	62	752	101	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	239	819	0	0	1184	77	75	906	65			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	338	2133	0	0	1551	101	547	1092	478			
Arrive On Green	0.20	1.00	0.00	0.00	0.46	0.45	0.31	0.31	0.31			
Sat Flow, veh/h	3442	3632	0	0	3467	219	1774	3539	1550			
Grp Volume(v), veh/h	239	819	0	0	620	641	75	906	65			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1823	1774	1770	1550			
Q Serve(g_s), s	5.8	0.0	0.0	0.0	26.2	26.3	2.7	21.4	2.7			
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.0	26.2	26.3	2.7	21.4	2.7			
Prop In Lane	1.00		0.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	338	2133	0	0	814	838	547	1092	478			
V/C Ratio(X)	0.71	0.38	0.00	0.00	0.76	0.76	0.14	0.83	0.14			
Avail Cap(c_a), veh/h	887	2133	0	0	814	838	615	1227	537			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	34.9	0.0	0.0	0.0	20.2	20.3	22.5	28.9	22.5			
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	6.7	6.5	0.1	4.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.0	14.3	14.7	1.4	11.1	1.2			
LnGrp Delay(d),s/veh	35.2	0.0	0.0	0.0	26.9	26.8	22.6	33.6	22.6			
LnGrp LOS	D	A			C	C	C	C	C			
Approach Vol, veh/h		1058			1261			1046				
Approach Delay, s/veh		8.0			26.9			32.1				
Approach LOS		A			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		58.2			12.8	45.4		31.8
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		49.9			* 23	22.7		31.0
Max Q Clear Time (g_c+I1), s		2.0			7.8	28.3		23.4
Green Ext Time (p_c), s		27.0			0.8	0.0		4.2

Intersection Summary		
HCM 2010 Ctrl Delay		22.6
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	699	63	279	759	0	0	0	0	172	1451	402
Future Volume (veh/h)	0	699	63	279	759	0	0	0	0	172	1451	402
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	874	0	349	949	0				215	1814	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80				0.80	0.80	0.80
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	928	0	181	1447	0				183	1632	795
Arrive On Green	0.00	0.26	0.00	0.20	0.82	0.00				0.50	0.50	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				364	3250	1583
Grp Volume(v), veh/h	0	874	0	349	949	0				1088	941	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1845	1770	1583
Q Serve(g_s), s	0.0	21.8	0.0	9.2	9.5	0.0				45.2	45.2	0.0
Cycle Q Clear(g_c), s	0.0	21.8	0.0	9.2	9.5	0.0				45.2	45.2	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.20		1.00
Lane Grp Cap(c), veh/h	0	928	0	181	1447	0				926	889	795
V/C Ratio(X)	0.00	0.94	0.00	1.92	0.66	0.00				1.17	1.06	0.00
Avail Cap(c_a), veh/h	0	928	0	181	1447	0				926	889	795
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.41	0.41	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	32.5	0.0	35.8	5.7	0.0				22.4	22.4	0.0
Incr Delay (d2), s/veh	0.0	18.4	0.0	424.4	1.0	0.0				90.0	46.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.9	0.0	25.8	4.4	0.0				45.8	33.3	0.0
LnGrp Delay(d),s/veh	0.0	50.9	0.0	460.2	6.7	0.0				112.4	69.3	0.0
LnGrp LOS		D		F	A					F	F	
Approach Vol, veh/h		874			1298						2029	
Approach Delay, s/veh		50.9			128.6						92.4	
Approach LOS		D			F						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.2	27.6		49.2		40.8		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 9	22.7		* 45		35.9		
Max Q Clear Time (g_c+I1), s	11.2	23.8		47.2		11.5		
Green Ext Time (p_c), s	0.0	0.0		0.0		15.8		

Intersection Summary		
HCM 2010 Ctrl Delay		95.0
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	451	231	502	318	87	208	802	581	100	553	116
Future Volume (veh/h)	190	451	231	502	318	87	208	802	581	100	553	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	221	524	116	584	370	82	242	933	385	116	643	121
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	323	719	321	646	858	188	276	1245	557	166	862	162
Arrive On Green	0.10	0.21	0.21	0.19	0.31	0.29	0.16	0.35	0.35	0.09	0.29	0.28
Sat Flow, veh/h	3343	3438	1536	3343	2805	615	1774	3539	1583	1774	2974	559
Grp Volume(v), veh/h	221	524	116	584	225	227	242	933	385	116	382	382
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1672	1719	1701	1774	1770	1583	1774	1770	1763
Q Serve(g_s), s	6.7	15.0	6.8	18.0	11.0	11.3	14.0	24.4	21.9	6.7	20.6	20.7
Cycle Q Clear(g_c), s	6.7	15.0	6.8	18.0	11.0	11.3	14.0	24.4	21.9	6.7	20.6	20.7
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	323	719	321	646	526	520	276	1245	557	166	513	511
V/C Ratio(X)	0.68	0.73	0.36	0.90	0.43	0.44	0.88	0.75	0.69	0.70	0.75	0.75
Avail Cap(c_a), veh/h	800	1218	544	673	544	538	357	1354	606	222	543	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	38.8	35.6	41.5	29.2	29.5	43.5	30.0	29.2	46.3	33.9	34.1
Incr Delay (d2), s/veh	1.9	0.5	0.3	14.8	0.2	0.2	14.8	2.2	3.0	2.9	5.3	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.2	2.9	9.6	5.3	5.3	8.0	12.3	10.0	3.4	10.8	10.8
LnGrp Delay(d),s/veh	47.9	39.4	35.9	56.3	29.4	29.7	58.3	32.2	32.3	49.2	39.1	39.4
LnGrp LOS	D	D	D	E	C	C	E	C	C	D	D	D
Approach Vol, veh/h		861			1036			1560			880	
Approach Delay, s/veh		41.1			44.6			36.3			40.6	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	41.1	24.4	26.0	20.4	34.5	14.2	36.2
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	36.0	* 21	31.0	* 25	32.0
Max Q Clear Time (g_c+I1), s	8.7	26.4	20.0	17.0	16.0	22.7	8.7	13.3
Green Ext Time (p_c), s	0.0	9.1	0.2	3.6	0.2	6.5	0.5	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	40.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	28	173	75	32	7	70	524	147	10	696	11
Future Volume (veh/h)	9	28	173	75	32	7	70	524	147	10	696	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	30	211	82	35	8	85	639	160	11	849	13
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.82	0.92	0.82	0.92	0.92	0.92	0.82	0.82	0.92	0.92	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	56	324	357	133	23	206	1324	319	100	1927	29
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	29	234	1351	858	557	97	173	2379	573	11	3463	53
Grp Volume(v), veh/h	252	0	0	125	0	0	439	0	445	457	0	416
Grp Sat Flow(s),veh/h/ln	1614	0	0	1512	0	0	1531	0	1594	1843	0	1685
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	5.7
Cycle Q Clear(g_c), s	5.5	0.0	0.0	2.3	0.0	0.0	5.4	0.0	6.7	5.6	0.0	5.7
Prop In Lane	0.04		0.84	0.66		0.06	0.19		0.36	0.02		0.03
Lane Grp Cap(c), veh/h	482	0	0	514	0	0	962	0	887	1119	0	938
V/C Ratio(X)	0.52	0.00	0.00	0.24	0.00	0.00	0.46	0.00	0.50	0.41	0.00	0.44
Avail Cap(c_a), veh/h	955	0	0	898	0	0	1452	0	1462	1765	0	1545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	0.0	12.2	0.0	0.0	5.0	0.0	5.4	5.1	0.0	5.1
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.4	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	1.1	0.0	0.0	2.8	0.0	3.0	2.9	0.0	2.6
LnGrp Delay(d),s/veh	14.3	0.0	0.0	12.4	0.0	0.0	5.4	0.0	5.8	5.3	0.0	5.5
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		252			125			884			873	
Approach Delay, s/veh		14.3			12.4			5.6			5.4	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.8		13.4		25.8		13.4
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		36.0		21.0		36.0		21.0
Max Q Clear Time (g_c+I1), s		8.7		7.5		7.7		4.3
Green Ext Time (p_c), s		13.1		2.1		13.3		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	754	183	20	1128	208	220	164	15	191	207	419
Future Volume (veh/h)	225	754	183	20	1128	208	220	164	15	191	207	419
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	829	93	22	1240	207	242	180	0	210	227	263
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	329	1454	651	57	1509	252	827	1013	453	239	626	278
Arrive On Green	0.10	0.42	0.42	0.03	0.35	0.34	0.24	0.29	0.00	0.13	0.18	0.18
Sat Flow, veh/h	3343	3438	1538	1723	4263	712	3442	3539	1583	1774	3539	1573
Grp Volume(v), veh/h	247	829	93	22	958	489	242	180	0	210	227	263
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1682	1721	1770	1583	1774	1770	1573
Q Serve(g_s), s	9.4	23.8	2.1	1.6	34.5	34.5	7.5	5.0	0.0	15.1	7.3	21.5
Cycle Q Clear(g_c), s	9.4	23.8	2.1	1.6	34.5	34.5	7.5	5.0	0.0	15.1	7.3	21.5
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1454	651	57	1165	595	827	1013	453	239	626	278
V/C Ratio(X)	0.75	0.57	0.14	0.39	0.82	0.82	0.29	0.18	0.00	0.88	0.36	0.95
Avail Cap(c_a), veh/h	411	1454	651	199	1343	686	827	1013	453	239	626	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	28.5	4.3	61.6	38.3	38.6	40.4	34.9	0.0	55.2	47.1	52.9
Incr Delay (d2), s/veh	5.4	0.5	0.1	4.3	3.8	7.1	0.2	0.4	0.0	29.0	1.6	41.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	11.4	0.9	0.8	16.3	17.2	3.6	2.5	0.0	9.3	3.7	12.6
LnGrp Delay(d),s/veh	62.4	29.0	4.4	65.8	42.0	45.6	40.6	35.3	0.0	84.2	48.7	94.4
LnGrp LOS	E	C	A	E	D	D	D	D		F	D	F
Approach Vol, veh/h		1169			1469			422			700	
Approach Delay, s/veh		34.1			43.6			38.3			76.5	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	41.2	8.3	59.0	35.7	27.0	17.3	50.0
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	16.5	26.0	14.0	52.5	21.0	* 22	15.0	* 52
Max Q Clear Time (g_c+I1), s	17.1	7.0	3.6	25.8	9.5	23.5	11.4	36.5
Green Ext Time (p_c), s	0.0	1.8	0.0	7.1	1.5	0.0	0.4	8.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	825	39	201	1012	365	55	372	146	406	323	304
Future Volume (veh/h)	110	825	39	201	1012	365	55	372	146	406	323	304
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	124	927	41	226	1137	156	62	418	43	456	363	105
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	477	1226	54	327	1585	492	489	898	400	568	980	436
Arrive On Green	0.14	0.37	0.34	0.10	0.32	0.32	0.14	0.25	0.25	0.17	0.28	0.28
Sat Flow, veh/h	3343	3353	148	3343	4940	1535	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	124	475	493	226	1137	156	62	418	43	456	363	105
Grp Sat Flow(s),veh/h/ln	1672	1719	1783	1672	1647	1535	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.3	31.5	31.5	8.5	26.4	10.0	2.0	13.0	2.7	16.6	10.7	6.7
Cycle Q Clear(g_c), s	4.3	31.5	31.5	8.5	26.4	10.0	2.0	13.0	2.7	16.6	10.7	6.7
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	477	629	652	327	1585	492	489	898	400	568	980	436
V/C Ratio(X)	0.26	0.76	0.76	0.69	0.72	0.32	0.13	0.47	0.11	0.80	0.37	0.24
Avail Cap(c_a), veh/h	477	629	652	327	1585	492	529	898	400	609	980	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	36.1	36.3	56.8	39.0	33.4	48.7	41.0	37.2	52.2	37.9	36.4
Incr Delay (d2), s/veh	0.1	8.3	8.0	5.2	2.8	1.7	0.0	1.7	0.5	6.5	1.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	16.4	16.9	4.2	12.4	4.5	1.0	6.5	1.2	8.4	5.4	3.1
LnGrp Delay(d),s/veh	49.7	44.4	44.2	61.9	41.8	35.1	48.8	42.8	37.7	58.7	38.9	37.7
LnGrp LOS	D	D	D	E	D	D	D	D	D	E	D	D
Approach Vol, veh/h		1092			1519			523			924	
Approach Delay, s/veh		44.9			44.1			43.1			48.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	45.0	25.5	37.0	16.0	51.5	22.5	40.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	14.2	38.9	20.2	30.9	9.9	43.2	17.9	33.2
Max Q Clear Time (g_c+I1), s	6.3	28.4	18.6	15.0	10.5	33.5	4.0	12.7
Green Ext Time (p_c), s	1.4	2.4	0.1	0.8	0.0	1.5	0.8	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	139	101	324	187	99	63	688	221	122	650	112
Future Volume (veh/h)	155	139	101	324	187	99	63	688	221	122	650	112
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	172	151	16	329	236	103	70	764	197	133	722	38
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.92	0.90	0.92	0.92	0.92	0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	251	226	224	439	305	133	123	961	248	163	1301	581
Arrive On Green	0.14	0.12	0.14	0.25	0.25	0.23	0.07	0.36	0.33	0.09	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1231	537	1723	2707	698	1723	3438	1536
Grp Volume(v), veh/h	172	151	16	329	0	339	70	485	476	133	722	38
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1768	1723	1719	1686	1723	1719	1536
Q Serve(g_s), s	9.2	7.7	0.9	17.0	0.0	17.8	3.9	25.2	25.3	7.5	16.4	1.6
Cycle Q Clear(g_c), s	9.2	7.7	0.9	17.0	0.0	17.8	3.9	25.2	25.3	7.5	16.4	1.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	251	226	224	439	0	438	123	610	599	163	1301	581
V/C Ratio(X)	0.69	0.67	0.07	0.75	0.00	0.77	0.57	0.79	0.79	0.81	0.56	0.07
Avail Cap(c_a), veh/h	411	394	366	661	0	658	277	657	645	277	1315	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	41.7	37.0	34.5	0.0	35.1	44.6	28.8	29.2	44.1	24.3	19.7
Incr Delay (d2), s/veh	3.3	3.4	0.1	2.6	0.0	3.3	4.1	6.3	6.4	9.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.2	0.4	8.6	0.0	9.1	2.0	12.9	12.9	4.0	7.8	0.7
LnGrp Delay(d),s/veh	43.9	45.1	37.1	37.1	0.0	38.4	48.7	35.1	35.6	53.4	24.8	19.7
LnGrp LOS	D	D	D	D		D	D	D	D	D	C	B
Approach Vol, veh/h		339			668			1031			893	
Approach Delay, s/veh		44.1			37.7			36.3			28.9	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	41.6		28.6	13.4	39.3		18.1
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	5.9	18.4		19.8	9.5	27.3		11.2
Green Ext Time (p_c), s	0.1	9.9		2.8	0.2	6.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	431	70	133	515	74	67	580	113	144	797	122
Future Volume (veh/h)	177	431	70	133	515	74	67	580	113	144	797	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	197	479	66	148	572	72	74	644	52	160	886	123
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	248	781	107	188	684	86	181	1527	679	265	2054	284
Arrive On Green	0.14	0.26	0.24	0.11	0.22	0.21	0.05	0.43	0.43	0.08	0.46	0.44
Sat Flow, veh/h	1723	3035	416	1723	3068	385	3442	3539	1575	3442	4508	623
Grp Volume(v), veh/h	197	270	275	148	320	324	74	644	52	160	665	344
Grp Sat Flow(s),veh/h/ln	1723	1719	1732	1723	1719	1734	1721	1770	1575	1721	1695	1741
Q Serve(g_s), s	14.1	17.7	18.0	10.7	22.7	22.9	2.7	16.2	2.5	5.8	17.0	17.3
Cycle Q Clear(g_c), s	14.1	17.7	18.0	10.7	22.7	22.9	2.7	16.2	2.5	5.8	17.0	17.3
Prop In Lane	1.00		0.24	1.00		0.22	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	248	442	446	188	383	387	181	1527	679	265	1545	793
V/C Ratio(X)	0.80	0.61	0.62	0.79	0.83	0.84	0.41	0.42	0.08	0.60	0.43	0.43
Avail Cap(c_a), veh/h	256	604	609	188	537	542	296	1527	679	323	1545	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	41.9	42.2	55.5	47.5	47.8	58.7	25.3	21.4	57.2	23.6	23.9
Incr Delay (d2), s/veh	14.2	0.5	0.5	17.8	5.6	5.8	0.5	0.9	0.2	0.8	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	8.5	8.6	6.0	11.4	11.6	1.3	8.1	1.1	2.8	8.1	8.6
LnGrp Delay(d),s/veh	67.2	42.4	42.7	73.4	53.1	53.6	59.2	26.2	21.6	58.0	24.5	25.6
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		742			792			770			1169	
Approach Delay, s/veh		49.1			57.1			29.0			29.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	59.2	18.0	36.9	10.7	62.3	22.4	32.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	38.9	11.9	42.9	8.9	39.9	16.9	37.9
Max Q Clear Time (g_c+I1), s	7.8	18.2	12.7	20.0	4.7	19.3	16.1	24.9
Green Ext Time (p_c), s	0.0	4.4	0.0	1.1	0.0	4.4	0.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	525	87	703	655	311	45	1151	538	343	1403	61
Future Volume (veh/h)	132	525	87	703	655	311	45	1151	538	343	1403	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	157	625	0	837	780	0	54	1370	580	408	1670	69
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	201	754	337	848	1239	554	97	1411	844	409	1712	71
Arrive On Green	0.12	0.22	0.00	0.25	0.36	0.00	0.05	0.28	0.28	0.12	0.34	0.32
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1573	3442	5009	207
Grp Volume(v), veh/h	157	625	0	837	780	0	54	1370	580	408	1130	609
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1573	1721	1695	1826
Q Serve(g_s), s	11.2	21.9	0.0	31.5	23.7	0.0	3.7	33.6	34.3	15.0	41.5	41.6
Cycle Q Clear(g_c), s	11.2	21.9	0.0	31.5	23.7	0.0	3.7	33.6	34.3	15.0	41.5	41.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	201	754	337	848	1239	554	97	1411	844	409	1159	624
V/C Ratio(X)	0.78	0.83	0.00	0.99	0.63	0.00	0.56	0.97	0.69	1.00	0.98	0.98
Avail Cap(c_a), veh/h	287	872	390	848	1239	554	112	1411	844	409	1159	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	47.0	0.0	46.9	33.4	0.0	58.2	45.1	21.6	55.6	41.0	41.2
Incr Delay (d2), s/veh	5.1	5.6	0.0	27.6	0.9	0.0	1.9	17.5	2.2	43.7	20.6	29.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	11.0	0.0	17.8	11.4	0.0	1.9	18.0	15.3	9.6	22.8	26.2
LnGrp Delay(d),s/veh	59.2	52.6	0.0	74.5	34.3	0.0	60.0	62.5	23.8	99.3	61.6	71.0
LnGrp LOS	E	D		E	C		E	E	C	F	E	E
Approach Vol, veh/h		782			1617			2004			2147	
Approach Delay, s/veh		54.0			55.1			51.3			71.4	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	39.0	36.0	32.2	10.9	47.1	18.7	49.5
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	13.0	32.5	30.0	* 30	6.0	39.5	19.5	40.5
Max Q Clear Time (g_c+I1), s	17.0	36.3	33.5	23.9	5.7	43.6	13.2	25.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.1	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.1
HCM 2010 LOS	E

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	692	352	69	477	404	11
Future Volume (veh/h)	692	352	69	477	404	11
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	899	234	90	619	525	4
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	925	774	114	1125	513	458
Arrive On Green	0.51	0.51	0.07	0.62	0.29	0.29
Sat Flow, veh/h	1810	1516	1723	1810	1774	1583
Grp Volume(v), veh/h	899	234	90	619	525	4
Grp Sat Flow(s),veh/h/ln	1810	1516	1723	1810	1774	1583
Q Serve(g_s), s	43.4	8.0	4.6	17.7	26.0	0.2
Cycle Q Clear(g_c), s	43.4	8.0	4.6	17.7	26.0	0.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	925	774	114	1125	513	458
V/C Ratio(X)	0.97	0.30	0.79	0.55	1.02	0.01
Avail Cap(c_a), veh/h	927	776	115	1128	513	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	12.7	41.3	9.8	31.9	22.7
Incr Delay (d2), s/veh	22.9	0.2	30.1	0.6	45.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.4	3.4	3.1	8.9	19.0	0.0
LnGrp Delay(d),s/veh	44.2	12.9	71.4	10.4	77.4	22.7
LnGrp LOS	D	B	E	B	F	C
Approach Vol, veh/h	1133			709	529	
Approach Delay, s/veh	37.8			18.1	77.0	
Approach LOS	D			B	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		59.8		30.0	9.9	49.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		56.0		26.0	6.0	46.0		
Max Q Clear Time (g_c+I1), s		19.7		28.0	6.6	45.4		
Green Ext Time (p_c), s		14.9		0.0	0.0	0.5		

Intersection Summary		
HCM 2010 Ctrl Delay		40.6
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	5	91	12	14	26	53	1278	5	18	1837	359
Future Volume (veh/h)	340	5	91	12	14	26	53	1278	5	18	1837	359
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	395	0	36	14	16	8	61	1469	6	21	2111	0
Adj No. of Lanes	2	0	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	0	278	127	139	60	113	2493	10	65	2346	0
Arrive On Green	0.18	0.00	0.18	0.18	0.18	0.16	0.06	0.69	0.67	0.04	0.66	0.00
Sat Flow, veh/h	2713	0	1565	492	780	339	1774	3615	15	1774	3632	0
Grp Volume(v), veh/h	395	0	36	38	0	0	61	719	756	21	2111	0
Grp Sat Flow(s),veh/h/ln	1356	0	1565	1611	0	0	1774	1770	1860	1774	1770	0
Q Serve(g_s), s	14.5	0.0	2.4	0.0	0.0	0.0	4.2	26.5	26.6	1.4	62.3	0.0
Cycle Q Clear(g_c), s	16.8	0.0	2.4	2.2	0.0	0.0	4.2	26.5	26.6	1.4	62.3	0.0
Prop In Lane	1.00		1.00	0.37		0.21	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	611	0	278	326	0	0	113	1220	1283	65	2346	0
V/C Ratio(X)	0.65	0.00	0.13	0.12	0.00	0.00	0.54	0.59	0.59	0.32	0.90	0.00
Avail Cap(c_a), veh/h	1019	0	513	563	0	0	156	1220	1283	156	2436	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	0.0	43.2	43.3	0.0	0.0	56.7	10.1	10.1	58.7	17.6	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.1	0.0	0.0	1.5	0.5	0.5	1.1	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	1.1	1.1	0.0	0.0	2.1	13.0	13.6	0.7	31.7	0.0
LnGrp Delay(d),s/veh	49.3	0.0	43.3	43.4	0.0	0.0	58.2	10.6	10.6	59.7	22.3	0.0
LnGrp LOS	D		D	D			E	B	B	E	C	
Approach Vol, veh/h		431			38			1536			2132	
Approach Delay, s/veh		48.8			43.4			12.5			22.7	
Approach LOS		D			D			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	90.2		26.2	11.9	86.8		26.2				
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s	8.5	83.5		39.0	8.5	83.5		39.0				
Max Q Clear Time (g_c+I1), s	3.4	28.6		18.8	6.2	64.3		4.2				
Green Ext Time (p_c), s	0.0	35.6		0.9	0.0	16.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			21.8									
HCM 2010 LOS			C									
Notes												

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	342	165	180	53	56	531
Future Volume (veh/h)	342	165	180	53	56	531
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1810	1810
Adj Flow Rate, veh/h	412	199	217	45	67	158
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	807	1081	869	180	262	234
Arrive On Green	0.58	0.58	0.58	0.58	0.15	0.15
Sat Flow, veh/h	1113	1863	1497	311	1723	1538
Grp Volume(v), veh/h	412	199	0	262	67	158
Grp Sat Flow(s),veh/h/ln	1113	1863	0	1808	1723	1538
Q Serve(g_s), s	8.6	1.5	0.0	2.1	1.0	2.9
Cycle Q Clear(g_c), s	10.8	1.5	0.0	2.1	1.0	2.9
Prop In Lane	1.00			0.17	1.00	1.00
Lane Grp Cap(c), veh/h	807	1081	0	1049	262	234
V/C Ratio(X)	0.51	0.18	0.00	0.25	0.26	0.67
Avail Cap(c_a), veh/h	1502	2244	0	2178	923	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.7	2.9	0.0	3.1	11.2	12.0
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.1	0.5	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.7	0.0	1.1	0.5	1.4
LnGrp Delay(d),s/veh	6.2	3.0	0.0	3.2	11.7	15.3
LnGrp LOS	A	A		A	B	B
Approach Vol, veh/h		611	262		225	
Approach Delay, s/veh		5.2	3.2		14.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				21.3		8.5		21.3
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				36.0		16.0		36.0
Max Q Clear Time (g_c+I1), s				12.8		4.9		4.1
Green Ext Time (p_c), s				4.7		0.5		5.0

Intersection Summary		
HCM 2010 Ctrl Delay		6.6
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	135	85	357	323	18	67	340	344	58	523	292
Future Volume (veh/h)	179	135	85	357	323	18	67	340	344	58	523	292
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	213	161	16	425	385	4	80	405	142	69	623	210
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	273	496	49	437	867	386	122	1188	523	118	1180	526
Arrive On Green	0.15	0.15	0.14	0.25	0.24	0.24	0.07	0.35	0.35	0.07	0.34	0.34
Sat Flow, veh/h	1774	3250	319	1774	3539	1576	1723	3438	1514	1723	3438	1531
Grp Volume(v), veh/h	213	87	90	425	385	4	80	405	142	69	623	210
Grp Sat Flow(s),veh/h/ln	1774	1770	1799	1774	1770	1576	1723	1719	1514	1723	1719	1531
Q Serve(g_s), s	9.9	3.7	3.8	20.3	7.9	0.2	3.9	7.5	5.8	3.3	12.4	8.9
Cycle Q Clear(g_c), s	9.9	3.7	3.8	20.3	7.9	0.2	3.9	7.5	5.8	3.3	12.4	8.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	270	275	437	867	386	122	1188	523	118	1180	526
V/C Ratio(X)	0.78	0.32	0.33	0.97	0.44	0.01	0.66	0.34	0.27	0.59	0.53	0.40
Avail Cap(c_a), veh/h	437	798	811	437	1597	711	323	1672	736	323	1672	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	32.2	32.4	31.9	27.3	24.4	38.7	20.7	20.2	38.6	22.5	21.3
Incr Delay (d2), s/veh	4.8	0.7	0.7	36.1	0.4	0.0	2.2	0.2	0.3	1.7	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	1.9	2.0	14.3	3.9	0.1	1.9	3.6	2.4	1.6	6.0	3.9
LnGrp Delay(d),s/veh	39.5	32.9	33.1	68.0	27.7	24.4	40.9	20.9	20.5	40.3	23.3	22.4
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	C	C
Approach Vol, veh/h		390			814			627			902	
Approach Delay, s/veh		36.6			48.7			23.3			24.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	33.5	25.0	17.0	10.0	33.3	17.1	24.9
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	20.0	37.0	15.0	40.0	20.0	37.0
Max Q Clear Time (g_c+I1), s	5.3	9.5	22.3	5.8	5.9	14.4	11.9	9.9
Green Ext Time (p_c), s	0.0	14.7	0.0	3.7	0.0	13.4	0.4	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	699	63	279	759	0	0	0	0	172	1451	402
Future Volume (veh/h)	0	699	63	279	759	0	0	0	0	172	1451	402
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	874	0	349	949	0				215	1814	0
Adj No. of Lanes	0	2	0	1	2	0				1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80				0.80	0.80	0.80
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	865	0	276	1573	0				828	1739	739
Arrive On Green	0.00	0.24	0.00	0.31	0.89	0.00				0.47	0.47	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				1774	3725	1583
Grp Volume(v), veh/h	0	874	0	349	949	0				215	1814	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1774	1863	1583
Q Serve(g_s), s	0.0	22.0	0.0	14.0	5.8	0.0				6.6	42.0	0.0
Cycle Q Clear(g_c), s	0.0	22.0	0.0	14.0	5.8	0.0				6.6	42.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	865	0	276	1573	0				828	1739	739
V/C Ratio(X)	0.00	1.01	0.00	1.26	0.60	0.00				0.26	1.04	0.00
Avail Cap(c_a), veh/h	0	865	0	276	1573	0				828	1739	739
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.41	0.41	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	34.0	0.0	31.0	3.1	0.0				14.6	24.0	0.0
Incr Delay (d2), s/veh	0.0	33.1	0.0	130.8	0.7	0.0				0.2	33.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.7	0.0	16.8	2.5	0.0				3.3	29.7	0.0
LnGrp Delay(d),s/veh	0.0	67.1	0.0	161.8	3.8	0.0				14.8	57.9	0.0
LnGrp LOS		F		F	A					B	F	
Approach Vol, veh/h		874			1298						2029	
Approach Delay, s/veh		67.1			46.3						53.3	
Approach LOS		E			D						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.0	26.0		46.0		44.0		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 14	21.1		* 42		39.1		
Max Q Clear Time (g_c+I1), s	16.0	24.0		44.0		7.8		
Green Ext Time (p_c), s	0.0	0.0		0.0		18.5		

Intersection Summary	
HCM 2010 Ctrl Delay	54.0
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	14.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	35	29	101	78	0	0	0	0	391	1	31
Future Vol, veh/h	0	35	29	101	78	0	0	0	0	391	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	31	106	82	0	0	0	0	412	1	33

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	37	0	0				332	332	82
Stage 1	-	-	-	-	-	-				295	295	-
Stage 2	-	-	-	-	-	-				37	37	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1574	-	0				663	588	978
Stage 1	0	-	-	-	-	0				755	669	-
Stage 2	0	-	-	-	-	0				985	864	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1574	-	-				618	0	978
Mov Cap-2 Maneuver	-	-	-	-	-	-				618	0	-
Stage 1	-	-	-	-	-	-				704	0	-
Stage 2	-	-	-	-	-	-				985	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.2	20.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1574	-	618	978
HCM Lane V/C Ratio	-	-	0.068	-	0.666	0.034
HCM Control Delay (s)	-	-	7.5	-	21.7	8.8
HCM Lane LOS	-	-	A	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	-	5	0.1

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	413	0	0	75	228	105	3	55	0	0	0
Future Vol, veh/h	15	413	0	0	75	228	105	3	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	435	0	0	79	240	111	3	58	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	79	0	-	-	-	0	545	545	435
Stage 1	-	-	-	-	-	-	466	466	-
Stage 2	-	-	-	-	-	-	79	79	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1519	-	0	0	-	-	499	446	621
Stage 1	-	-	0	0	-	-	632	562	-
Stage 2	-	-	0	0	-	-	944	829	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1519	-	-	-	-	-	494	0	621
Mov Cap-2 Maneuver	-	-	-	-	-	-	494	0	-
Stage 1	-	-	-	-	-	-	625	0	-
Stage 2	-	-	-	-	-	-	944	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	494	621	1519	-	-	-
HCM Lane V/C Ratio	0.224	0.098	0.01	-	-	-
HCM Control Delay (s)	14.4	11.4	7.4	-	-	-
HCM Lane LOS	B	B	A	-	-	-
HCM 95th %tile Q(veh)	0.8	0.3	0	-	-	-

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	450	0	0	211	312	3	1	189	0	0	0
Future Vol, veh/h	9	450	0	0	211	312	3	1	189	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	474	0	0	222	328	3	1	199	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.9	13.8	12.8
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	75%	0%	100%	0%	0%	0%	0%
Vol Thru, %	25%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	189	9	225	225	211	312
LT Vol	3	0	9	0	0	0	0
Through Vol	1	0	0	225	225	211	0
RT Vol	0	189	0	0	0	0	312
Lane Flow Rate	4	199	9	237	237	222	328
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.009	0.359	0.018	0.427	0.312	0.39	0.512
Departure Headway (Hd)	7.587	6.5	7.002	6.495	4.738	6.319	5.61
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	551	509	552	753	569	640
Service Time	5.365	4.277	4.768	4.261	2.503	4.08	3.371
HCM Lane V/C Ratio	0.009	0.361	0.018	0.429	0.315	0.39	0.512
HCM Control Delay	10.4	12.9	9.9	14.1	9.7	13.1	14.2
HCM Lane LOS	B	B	A	B	A	B	B
HCM 95th-tile Q	0	1.6	0.1	2.1	1.3	1.8	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	0	594	0	0	0	452	65	0	0	115	70
Future Volume (veh/h)	61	0	594	0	0	0	452	65	0	0	115	70
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	66	0	84				486	70	0	0	124	15
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	139	0	124				581	1222	0	0	364	309
Arrive On Green	0.08	0.00	0.08				0.33	0.66	0.00	0.00	0.20	0.20
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	66	0	84				486	70	0	0	124	15
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	1.1	0.0	1.6				7.6	0.4	0.0	0.0	1.7	0.2
Cycle Q Clear(g_c), s	1.1	0.0	1.6				7.6	0.4	0.0	0.0	1.7	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	139	0	124				581	1222	0	0	364	309
V/C Ratio(X)	0.47	0.00	0.68				0.84	0.06	0.00	0.00	0.34	0.05
Avail Cap(c_a), veh/h	1414	0	1262				1190	3731	0	0	3731	3172
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	13.5				9.4	1.9	0.0	0.0	10.4	9.8
Incr Delay (d2), s/veh	0.9	0.0	2.4				1.2	0.1	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4				3.8	0.2	0.0	0.0	0.9	0.1
LnGrp Delay(d),s/veh	14.2	0.0	15.9				10.6	1.9	0.0	0.0	11.0	9.9
LnGrp LOS	B		B				B	A			B	A
Approach Vol, veh/h		150						556			139	
Approach Delay, s/veh		15.2						9.5			10.9	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.7		6.4	13.9	9.9		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.4		3.6	9.6	3.7		
Green Ext Time (p_c), s		1.9		0.1	0.2	1.9		

Intersection Summary		
HCM 2010 Ctrl Delay		10.7
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	233	16	0	2	24	1	5	31	2	4	42	401
Future Vol, veh/h	233	16	0	2	24	1	5	31	2	4	42	401
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	284	20	0	2	29	1	6	38	2	5	51	489
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	9.2	9.1	16
HCM LOS	B	A	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	94%	7%	1%
Vol Thru, %	82%	6%	89%	9%
Vol Right, %	5%	0%	4%	90%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	249	27	447
LT Vol	5	233	2	4
Through Vol	31	16	24	42
RT Vol	2	0	1	401
Lane Flow Rate	46	304	33	545
Geometry Grp	1	1	1	1
Degree of Util (X)	0.073	0.472	0.054	0.666
Departure Headway (Hd)	5.637	5.598	5.892	4.395
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	636	647	610	812
Service Time	3.666	3.604	3.909	2.485
HCM Lane V/C Ratio	0.072	0.47	0.054	0.671
HCM Control Delay	9.1	13.5	9.2	16
HCM Lane LOS	A	B	A	C
HCM 95th-tile Q	0.2	2.5	0.2	5.2

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	105	26	321	158	0	9	1	162	3	16	13
Future Vol, veh/h	1	105	26	321	158	0	9	1	162	3	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	135	33	412	203	0	12	1	208	4	21	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	168	0	0	1198	1180	152	1285	1197	203
Stage 1	-	-	-	-	-	-	154	154	-	1026	1026	-
Stage 2	-	-	-	-	-	-	1044	1026	-	259	171	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1410	-	-	162	190	894	142	186	838
Stage 1	-	-	-	-	-	-	848	770	-	283	312	-
Stage 2	-	-	-	-	-	-	277	312	-	746	757	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1409	-	-	104	127	893	80	125	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	127	-	80	125	-
Stage 1	-	-	-	-	-	-	847	769	-	283	209	-
Stage 2	-	-	-	-	-	-	164	209	-	570	756	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.8	13.9	26.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	624	1369	-	-	1409	-	-	202
HCM Lane V/C Ratio	0.353	0.001	-	-	0.292	-	-	0.184
HCM Control Delay (s)	13.9	7.6	0	-	8.6	0	-	26.8
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	1.2	-	-	0.7

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	0	184	29	0	365
Future Vol, veh/h	49	0	184	29	0	365
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	0	222	35	0	440

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	679	239	0	0	257	0
Stage 1	239	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	417	800	-	-	1308	-
Stage 1	801	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	417	800	-	-	1308	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	417	1308	-
HCM Lane V/C Ratio	-	-	0.142	-	-
HCM Control Delay (s)	-	-	15.1	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	380	679	97	139	230	180	126	135	385	217	66
Future Volume (veh/h)	149	380	679	97	139	230	180	126	135	385	217	66
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	151	384	518	98	140	100	182	127	16	389	219	14
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	1476	660	263	1332	593	373	460	57	529	669	299
Arrive On Green	0.11	0.42	0.42	0.08	0.38	0.38	0.11	0.15	0.13	0.15	0.19	0.19
Sat Flow, veh/h	3442	3539	1582	3442	3539	1576	3442	3166	392	3442	3539	1583
Grp Volume(v), veh/h	151	384	518	98	140	100	182	70	73	389	219	14
Grp Sat Flow(s),veh/h/ln	1721	1770	1582	1721	1770	1576	1721	1770	1788	1721	1770	1583
Q Serve(g_s), s	3.2	5.5	21.9	2.1	2.0	3.3	3.8	2.7	2.8	8.3	4.1	0.6
Cycle Q Clear(g_c), s	3.2	5.5	21.9	2.1	2.0	3.3	3.8	2.7	2.8	8.3	4.1	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	367	1476	660	263	1332	593	373	257	260	529	669	299
V/C Ratio(X)	0.41	0.26	0.78	0.37	0.11	0.17	0.49	0.27	0.28	0.74	0.33	0.05
Avail Cap(c_a), veh/h	960	2815	1258	960	2778	1237	960	1396	1411	951	2787	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	14.7	19.5	33.8	15.6	16.0	32.3	29.3	29.4	31.1	27.0	25.6
Incr Delay (d2), s/veh	0.3	0.1	2.5	0.3	0.0	0.1	0.4	0.9	0.9	0.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.7	9.9	1.0	1.0	1.4	1.8	1.4	1.4	4.0	2.0	0.3
LnGrp Delay(d),s/veh	32.4	14.8	22.0	34.2	15.6	16.1	32.7	30.2	30.4	31.9	27.5	25.7
LnGrp LOS	C	B	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1053			338			325			622	
Approach Delay, s/veh		20.9			21.1			31.6			30.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	36.2	12.4	18.7	12.2	33.8	15.8	15.2
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	20.0	60.0	20.0	* 60	20.0	* 60	* 20	* 60
Max Q Clear Time (g_c+I1), s	4.1	23.9	5.8	6.1	5.2	5.3	10.3	4.8
Green Ext Time (p_c), s	0.0	7.0	0.1	3.9	0.1	7.2	0.2	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	729	105	239	449	34	52	17	287	12	4	2
Future Volume (veh/h)	13	729	105	239	449	34	52	17	287	12	4	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	14	784	87	257	483	36	56	18	31	13	4	0
Adj No. of Lanes	1	1	1	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	1018	864	294	1211	90	198	29	110	153	32	0
Arrive On Green	0.01	0.55	0.55	0.17	0.71	0.70	0.07	0.07	0.07	0.08	0.08	0.00
Sat Flow, veh/h	1774	1863	1580	1774	1712	128	1236	397	1529	539	402	0
Grp Volume(v), veh/h	14	784	87	257	0	519	74	0	31	17	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1580	1774	0	1840	1634	0	1529	941	0	0
Q Serve(g_s), s	0.3	19.1	1.5	8.2	0.0	6.7	0.0	0.0	1.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	19.1	1.5	8.2	0.0	6.7	2.4	0.0	1.1	2.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	0.76		1.00	0.76		0.00
Lane Grp Cap(c), veh/h	9	1018	864	294	0	1301	227	0	110	186	0	0
V/C Ratio(X)	1.49	0.77	0.10	0.87	0.00	0.40	0.33	0.00	0.28	0.09	0.00	0.00
Avail Cap(c_a), veh/h	596	1303	1106	596	0	1301	652	0	553	853	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.9	10.3	6.3	23.6	0.0	3.5	26.1	0.0	25.5	24.8	0.0	0.0
Incr Delay (d2), s/veh	258.6	2.4	0.1	3.2	0.0	0.2	0.3	0.0	0.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	10.3	0.7	4.3	0.0	3.4	1.2	0.0	0.5	0.3	0.0	0.0
LnGrp Delay(d),s/veh	347.4	12.7	6.4	26.8	0.0	3.7	26.4	0.0	26.0	24.8	0.0	0.0
LnGrp LOS	F	B	A	C		A	C		C	C		
Approach Vol, veh/h		885			776			105			17	
Approach Delay, s/veh		17.4			11.4			26.3			24.8	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	35.7		8.7	4.3	45.0		8.7				
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5				
Max Green Setting (Gmax), s	20.0	40.0		31.0	20.0	40.0		* 21				
Max Q Clear Time (g_c+I1), s	10.2	21.1		4.4	2.3	8.7		4.4				
Green Ext Time (p_c), s	0.1	10.0		0.2	0.0	13.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.4									
HCM 2010 LOS			B									
Notes												

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	40	4	154	30	42	2	215	222	80	346	0
Future Vol, veh/h	8	40	4	154	30	42	2	215	222	80	346	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	50	5	193	38	53	3	269	278	100	433	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	12.5	14.9	15.2	16.5
HCM LOS	B	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	15%	100%	0%	41%	0%
Vol Thru, %	99%	0%	77%	0%	42%	59%	100%
Vol Right, %	0%	100%	8%	0%	58%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	222	52	154	72	195	231
LT Vol	2	0	8	154	0	80	0
Through Vol	215	0	40	0	30	115	231
RT Vol	0	222	4	0	42	0	0
Lane Flow Rate	271	278	65	192	90	244	288
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.51	0.466	0.146	0.428	0.177	0.471	0.539
Departure Headway (Hd)	6.768	6.049	8.09	8.004	7.075	6.943	6.734
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	534	597	443	450	508	520	536
Service Time	4.497	3.777	6.137	5.736	4.806	4.673	4.464
HCM Lane V/C Ratio	0.507	0.466	0.147	0.427	0.177	0.469	0.537
HCM Control Delay	16.4	14	12.5	16.6	11.3	15.7	17.1
HCM Lane LOS	C	B	B	C	B	C	C
HCM 95th-tile Q	2.9	2.5	0.5	2.1	0.6	2.5	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	459	276	44	376	6	184	348	53	12	385	191
Future Volume (veh/h)	260	459	276	44	376	6	184	348	53	12	385	191
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	299	528	107	51	432	6	211	400	51	14	443	64
Adj No. of Lanes	1	0	1	0	2	0	1	2	0	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	0	306	60	538	8	249	1419	180	13	591	496
Arrive On Green	0.19	0.20	0.19	0.16	0.16	0.16	0.14	0.45	0.45	0.01	0.32	0.32
Sat Flow, veh/h	1774	0	1583	368	3283	48	1774	3152	399	1774	1863	1563
Grp Volume(v), veh/h	299	0	107	256	0	233	211	223	228	14	443	64
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1844	0	1854	1774	1770	1782	1774	1863	1563
Q Serve(g_s), s	14.5	0.0	5.2	12.0	0.0	10.7	10.3	7.1	7.2	0.7	18.9	2.6
Cycle Q Clear(g_c), s	14.5	0.0	5.2	12.0	0.0	10.7	10.3	7.1	7.2	0.7	18.9	2.6
Prop In Lane	1.00		1.00	0.20		0.03	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	343	0	306	302	0	304	249	796	802	13	591	496
V/C Ratio(X)	0.87	0.00	0.35	0.85	0.00	0.77	0.85	0.28	0.28	1.05	0.75	0.13
Avail Cap(c_a), veh/h	648	0	579	332	0	334	359	981	988	80	739	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	31.0	36.1	0.0	35.6	37.3	15.4	15.4	44.1	27.2	21.6
Incr Delay (d2), s/veh	6.9	0.0	0.7	16.8	0.0	9.6	8.5	0.6	0.6	83.0	3.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	2.3	7.5	0.0	6.3	5.6	3.5	3.7	0.6	10.3	1.1
LnGrp Delay(d),s/veh	41.8	0.0	31.7	52.9	0.0	45.1	45.8	16.0	16.0	128.2	30.6	21.8
LnGrp LOS	D		C	D		D	D	B	B	F	C	C
Approach Vol, veh/h		406			489			662			521	
Approach Delay, s/veh		39.1			49.2			25.5			32.2	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	44.0		18.6	16.5	32.2		21.7				
Change Period (Y+Rc), s	3.5	4.3		4.0	* 4.2	4.3		4.0				
Max Green Setting (Gmax), s	4.5	49.0		16.0	* 18	35.0		33.0				
Max Q Clear Time (g_c+I1), s	2.7	9.2		14.0	12.3	20.9		16.5				
Green Ext Time (p_c), s	0.0	11.2		0.6	0.0	6.9		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			35.4									
HCM 2010 LOS			D									
Notes												

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	278	204	175	390	67
Future Vol, veh/h	71	278	204	175	390	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	309	227	194	433	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1081	433	433	0	-	0
Stage 1	433	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	241	623	1127	-	-	0
Stage 1	654	-	-	-	-	0
Stage 2	521	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	192	623	1127	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	416	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1127	-	782	-
HCM Lane V/C Ratio	0.201	-	0.496	-
HCM Control Delay (s)	9	-	14	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.8	-	2.8	-

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	238	179	37	180	9	94	115	49	11	41	12
Future Vol, veh/h	10	238	179	37	180	9	94	115	49	11	41	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	259	195	40	196	10	102	125	53	12	45	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	440	458	29	532	438	89	58	0	0	178	0	0
Stage 1	75	75	-	356	356	-	-	-	-	-	-	-
Stage 2	365	383	-	176	82	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	501	498	1039	430	511	951	1544	-	-	1395	-	-
Stage 1	926	832	-	634	628	-	-	-	-	-	-	-
Stage 2	627	610	-	809	826	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	315	457	1039	182	469	951	1544	-	-	1395	-	-
Mov Cap-2 Maneuver	315	457	-	182	469	-	-	-	-	-	-	-
Stage 1	857	825	-	587	582	-	-	-	-	-	-	-
Stage 2	381	565	-	447	819	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	20	2.8	1.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	442	689	321	492	1395	-	-
HCM Lane V/C Ratio	0.066	-	-	0.317	0.47	0.43	0.219	0.009	-	-
HCM Control Delay (s)	7.5	0.1	-	16.9	14.8	24.4	14.4	7.6	0	-
HCM Lane LOS	A	A	-	C	B	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	2.5	2.1	0.8	0	-	-

Intersection	
Int Delay, s/veh	129.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	35	136	68	29	8	147	524	181	12	710	19
Future Vol, veh/h	6	35	136	68	29	8	147	524	181	12	710	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	92	94	92	92	92	94	94	92	92	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	38	145	74	32	9	156	557	197	13	755	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1399	1859	388	1392	1771	377	776	0	0	754	0	0
Stage 1	792	792	-	969	969	-	-	-	-	-	-	-
Stage 2	607	1067	-	423	802	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	100	73	611	101	82	621	836	-	-	852	-	-
Stage 1	349	399	-	272	330	-	-	-	-	-	-	-
Stage 2	450	297	-	579	395	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	47	611	~ 19	53	621	836	-	-	852	-	-
Mov Cap-2 Maneuver	39	47	-	~ 19	53	-	-	-	-	-	-	-
Stage 1	232	388	-	181	220	-	-	-	-	-	-	-
Stage 2	253	198	-	388	384	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	197.8	$ 1920.4	2.4	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	836	-	-	156	25	852	-	-
HCM Lane V/C Ratio	0.187	-	-	1.212	4.565	0.015	-	-
HCM Control Delay (s)	10.3	1.1	-	197.8	$ 1920.4	9.3	0.1	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	10.7	14.2	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	820	191	0	607	848	0	0	0	676	2	166
Future Volume (veh/h)	0	820	191	0	607	848	0	0	0	676	2	166
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	845	0	0	626	0				698	0	66
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2234	0	0	1555	696				1181	0	527
Arrive On Green	0.00	0.45	0.00	0.00	0.45	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	845	0	0	626	0				698	0	66
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	4.2	0.0	0.0	4.5	0.0				6.1	0.0	1.1
Cycle Q Clear(g_c), s	0.0	4.2	0.0	0.0	4.5	0.0				6.1	0.0	1.1
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2234	0	0	1555	696				1181	0	527
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.40	0.00				0.59	0.00	0.13
Avail Cap(c_a), veh/h	0	8097	0	0	5635	2521				2955	0	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	0.0	0.0	6.8	0.0				10.3	0.0	8.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	0.0	0.0	2.1	0.0				2.9	0.0	0.5
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	6.9	0.0				10.5	0.0	8.7
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		845			626						764	
Approach Delay, s/veh		6.8			6.9						10.3	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.8		16.4		20.8		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		6.2		8.1		6.5		
Green Ext Time (p_c), s		7.5		1.5		7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1366	153	0	1348	545	103	0	1254	0	0	0
Future Volume (vph)	1	1366	153	0	1348	545	103	0	1254	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4865			4727			1770	2787			
Flt Permitted		0.94			1.00			0.95	1.00			
Satd. Flow (perm)		4565			4727			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1408	158	0	1390	562	106	0	1293	0	0	0
RTOR Reduction (vph)	0	10	0	0	70	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1557	0	0	1882	0	0	106	1278	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		33.5			67.1			23.4	57.0			
Effective Green, g (s)		36.3			69.9			26.2	59.8			
Actuated g/C Ratio		0.35			0.67			0.25	0.57			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1591			3174			445	1600			
v/s Ratio Prot					0.40			0.06	c0.46			
v/s Ratio Perm		c0.34										
v/c Ratio		0.98			0.59			0.24	0.80			
Uniform Delay, d1		33.5			9.3			31.0	17.4			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		17.4			0.2			0.1	2.7			
Delay (s)		50.9			9.5			31.1	20.1			
Level of Service		D			A			C	C			
Approach Delay (s)		50.9			9.5			20.9			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	1273	440	56	909	173	562	298	97	302	376	326
Future Volume (veh/h)	520	1273	440	56	909	173	562	298	97	302	376	326
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	1312	189	58	937	157	579	307	0	311	388	137
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	856	1427	637	86	875	146	814	837	374	318	621	270
Arrive On Green	0.26	0.41	0.41	0.05	0.21	0.19	0.24	0.24	0.00	0.18	0.18	0.18
Sat Flow, veh/h	3343	3438	1536	1723	4263	712	3442	3539	1583	1774	3539	1538
Grp Volume(v), veh/h	536	1312	189	58	723	371	579	307	0	311	388	137
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1723	1647	1681	1721	1770	1583	1774	1770	1538
Q Serve(g_s), s	19.0	48.4	4.9	4.4	27.5	27.5	20.7	9.7	0.0	23.4	13.6	10.8
Cycle Q Clear(g_c), s	19.0	48.4	4.9	4.4	27.5	27.5	20.7	9.7	0.0	23.4	13.6	10.8
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	856	1427	637	86	676	345	814	837	374	318	621	270
V/C Ratio(X)	0.63	0.92	0.30	0.67	1.07	1.07	0.71	0.37	0.00	0.98	0.63	0.51
Avail Cap(c_a), veh/h	973	1450	648	129	676	345	814	837	374	318	621	270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.32	0.32	0.32	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	37.1	5.3	62.6	53.3	53.6	47.0	42.8	0.0	54.7	51.2	50.0
Incr Delay (d2), s/veh	0.3	3.5	0.1	8.7	54.9	69.8	2.9	1.2	0.0	44.6	4.7	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	23.7	2.1	2.3	17.6	19.4	10.1	4.9	0.0	15.4	7.0	5.1
LnGrp Delay(d),s/veh	44.5	40.6	5.4	71.3	108.1	123.4	49.9	44.0	0.0	99.3	55.9	56.7
LnGrp LOS	D	D	A	E	F	F	D	D		F	E	E
Approach Vol, veh/h		2037			1152			886			836	
Approach Delay, s/veh		38.4			111.2			47.8			72.2	
Approach LOS		D			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	35.7	10.7	59.6	36.2	27.5	38.8	31.5
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5
Max Green Setting (Gmax), s	23.0	26.0	9.0	55.0	27.0	* 22	38.0	* 26
Max Q Clear Time (g_c+I1), s	25.4	11.7	6.4	50.4	22.7	15.6	21.0	29.5
Green Ext Time (p_c), s	0.0	3.6	0.0	3.7	1.7	1.6	10.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	61	71	539	66	56	114	605	637	75	892	15
Future Volume (veh/h)	39	61	71	539	66	56	114	605	637	75	892	15
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	42	66	9	631	0	0	123	651	0	81	959	15
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	128	177	797	0	356	174	1505	673	124	2048	32
Arrive On Green	0.11	0.11	0.11	0.22	0.00	0.00	0.10	0.43	0.00	0.07	0.40	0.38
Sat Flow, veh/h	711	1117	1542	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	108	0	9	631	0	0	123	651	0	81	630	344
Grp Sat Flow(s),veh/h/ln	1827	0	1542	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	5.4	0.0	0.5	16.2	0.0	0.0	6.5	12.5	0.0	4.3	13.3	13.3
Cycle Q Clear(g_c), s	5.4	0.0	0.5	16.2	0.0	0.0	6.5	12.5	0.0	4.3	13.3	13.3
Prop In Lane	0.39		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	210	0	177	797	0	356	174	1505	673	124	1346	734
V/C Ratio(X)	0.52	0.00	0.05	0.79	0.00	0.00	0.71	0.43	0.00	0.65	0.47	0.47
Avail Cap(c_a), veh/h	587	0	495	1506	0	672	570	1704	762	570	1633	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	38.1	35.3	0.0	0.0	42.2	19.5	0.0	43.8	21.6	21.6
Incr Delay (d2), s/veh	2.0	0.0	0.1	1.8	0.0	0.0	5.2	0.4	0.0	5.7	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.2	8.1	0.0	0.0	3.4	6.1	0.0	2.3	6.3	7.0
LnGrp Delay(d),s/veh	42.2	0.0	38.2	37.1	0.0	0.0	47.4	20.0	0.0	49.5	22.1	22.6
LnGrp LOS	D		D	D			D	B		D	C	C
Approach Vol, veh/h		117			631			774			1055	
Approach Delay, s/veh		41.9			37.1			24.3			24.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	45.1		25.7	13.5	42.3		15.1
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	6.3	14.5		18.2	8.5	15.3		7.4
Green Ext Time (p_c), s	0.2	22.0		2.2	0.3	21.5		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		28.3
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1400	87	257	856	231	174	492	239	417	365	205
Future Volume (veh/h)	222	1400	87	257	856	231	174	492	239	417	365	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	1489	90	273	911	72	185	523	77	444	388	64
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	640	1178	71	387	1395	434	289	871	387	559	1149	510
Arrive On Green	0.19	0.36	0.34	0.12	0.28	0.28	0.08	0.25	0.25	0.16	0.32	0.32
Sat Flow, veh/h	3343	3292	198	3343	4940	1538	3442	3539	1574	3442	3539	1573
Grp Volume(v), veh/h	236	774	805	273	911	72	185	523	77	444	388	64
Grp Sat Flow(s),veh/h/ln	1672	1719	1772	1672	1647	1538	1721	1770	1574	1721	1770	1573
Q Serve(g_s), s	8.0	46.5	46.5	10.2	21.1	4.6	6.8	17.0	3.7	16.1	10.8	2.1
Cycle Q Clear(g_c), s	8.0	46.5	46.5	10.2	21.1	4.6	6.8	17.0	3.7	16.1	10.8	2.1
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	640	615	634	387	1395	434	289	871	387	559	1149	510
V/C Ratio(X)	0.37	1.26	1.27	0.70	0.65	0.17	0.64	0.60	0.20	0.79	0.34	0.13
Avail Cap(c_a), veh/h	640	615	634	429	1395	434	556	871	387	609	1149	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	41.7	41.9	55.3	41.1	35.1	57.6	43.3	20.6	52.3	33.3	9.8
Incr Delay (d2), s/veh	0.1	129.3	133.3	3.6	2.4	0.8	0.9	3.1	1.1	5.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	44.1	46.2	4.9	9.9	2.0	3.2	8.6	1.7	8.1	5.3	0.9
LnGrp Delay(d),s/veh	45.9	171.1	175.2	58.9	43.4	35.9	58.5	46.4	21.8	58.2	33.4	9.8
LnGrp LOS	D	F	F	E	D	D	E	D	C	E	C	A
Approach Vol, veh/h		1815			1256			785			896	
Approach Delay, s/veh		156.6			46.4			46.8			44.0	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.9	40.0	25.1	36.0	18.4	50.5	14.9	46.2
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	20.2	33.9	20.2	29.9	13.9	40.2	18.9	31.2
Max Q Clear Time (g_c+I1), s	10.0	23.1	18.1	19.0	12.2	48.5	8.8	12.8
Green Ext Time (p_c), s	2.9	1.9	0.2	1.0	0.0	0.0	0.1	1.0

Intersection Summary			
HCM 2010 Ctrl Delay			88.1
HCM 2010 LOS			F

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_Existing + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	185	0.0	0.399	14.8	LOS B	2.3	57.8	0.85	0.92	25.0
8	T1	148	0.0	0.439	11.9	LOS B	3.0	76.1	0.89	0.97	22.6
18	R2	142	0.0	0.439	11.9	LOS B	3.0	76.1	0.89	0.97	33.4
Approach		475	0.0	0.439	13.0	LOS B	3.0	76.1	0.87	0.95	27.1
East: WB Boronda Rd											
1	L2	157	0.0	0.581	10.8	LOS B	5.5	136.6	0.70	0.77	28.5
6	T1	1268	0.4	0.581	9.7	LOS A	5.5	138.1	0.68	0.71	32.0
16	R2	149	0.0	0.101	3.2	LOS A	0.5	13.6	0.42	0.26	33.9
Approach		1574	0.3	0.581	9.2	LOS A	5.5	138.1	0.66	0.67	31.9
North: SB McKinnon St											
7	L2	159	0.0	0.173	5.6	LOS A	1.0	25.4	0.80	0.75	33.2
4	T1	125	0.0	0.212	8.8	LOS A	1.0	25.7	0.78	0.78	28.9
14	R2	147	0.0	0.151	5.1	LOS A	0.9	22.0	0.77	0.70	32.1
Approach		431	0.0	0.212	6.4	LOS A	1.0	25.7	0.78	0.74	32.0
West: EB Boronda Rd											
5	L2	214	0.0	0.645	11.9	LOS B	6.7	168.1	0.62	0.70	29.8
2	T1	1456	0.0	0.645	10.8	LOS B	6.8	171.2	0.59	0.63	33.0
12	R2	435	0.0	0.284	4.7	LOS A	1.5	37.9	0.38	0.24	29.4
Approach		2105	0.0	0.645	9.6	LOS A	6.8	171.2	0.55	0.56	32.3
All Vehicles		4585	0.1	0.645	9.5	LOS A	6.8	171.2	0.64	0.65	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	150	0.0	0.180	6.2	LOS A	1.2	28.9	0.85	0.79	34.5
8	T1	146	0.0	0.279	10.9	LOS B	1.5	36.8	0.83	0.83	33.0
18	R2	178	0.0	0.181	5.4	LOS A	1.0	26.2	0.76	0.70	35.7
Approach		474	0.0	0.279	7.3	LOS A	1.5	36.8	0.81	0.77	34.6
East: WB Baronda Rd											
1	L2	132	0.0	0.791	20.1	LOS C	13.8	345.5	0.86	1.19	31.3
6	T1	1368	0.3	0.791	19.0	LOS C	14.5	363.5	0.85	1.16	32.8
16	R2	149	0.0	0.791	18.1	LOS C	14.5	363.5	0.84	1.14	30.9
Approach		1649	0.2	0.791	19.0	LOS C	14.5	363.5	0.85	1.16	32.6
North: SB El Dorado Dr (Future)											
7	L2	140	0.0	0.190	7.0	LOS A	1.3	32.0	0.91	0.85	33.6
4	T1	121	0.0	0.261	11.8	LOS B	1.4	34.9	0.85	0.85	32.7
14	R2	85	0.0	0.103	5.4	LOS A	0.6	15.9	0.84	0.74	35.6
Approach		346	0.0	0.261	8.3	LOS A	1.4	34.9	0.87	0.82	33.8
West: EB Boronda Rd											
5u	U	75	0.0	0.742	16.3	LOS C	12.1	303.6	0.79	0.97	33.9
5	L2	142	0.0	0.742	16.3	LOS C	12.1	303.6	0.79	0.97	32.0
2	T1	1202	0.4	0.742	15.6	LOS C	12.4	311.4	0.78	0.94	33.7
12	R2	228	0.0	0.742	15.0	LOS C	12.4	311.4	0.77	0.92	32.7
Approach		1647	0.3	0.742	15.6	LOS C	12.4	311.4	0.78	0.94	33.4
All Vehicles		4116	0.2	0.791	15.4	LOS C	14.5	363.5	0.82	1.00	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_Existing + WASP + CASP PM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Natividad Rd											
3	L2	262	0.0	0.516	16.9	LOS C	2.6	64.4	0.84	0.93	30.4
8	T1	829	0.0	0.709	23.3	LOS C	5.6	139.4	0.89	1.08	25.8
18	R2	568	0.0	0.339	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		1659	0.0	0.709	14.3	LOS B	5.6	139.4	0.58	0.69	30.3
East: WB Boronda Rd											
1	L2	243	0.0	0.675	18.3	LOS C	5.7	142.7	0.82	1.03	28.3
6	T1	1346	0.2	0.675	16.7	LOS C	6.4	161.4	0.82	1.03	34.9
16	R2	233	0.0	0.229	5.7	LOS A	1.1	27.2	0.62	0.58	36.9
Approach		1823	0.1	0.675	15.5	LOS C	6.4	161.4	0.80	0.97	34.4
North: SB Natividad Rd											
7	L2	472	0.3	0.836	37.0	LOS E	8.5	212.4	0.93	1.32	24.8
4	T1	989	0.0	0.836	32.6	LOS D	10.3	258.4	0.94	1.34	22.5
14	R2	116	7.5	0.153	6.4	LOS A	0.7	18.2	0.71	0.71	37.6
Approach		1577	0.6	0.836	32.0	LOS D	10.3	258.4	0.92	1.29	24.4
West: EB Boronda Rd											
5u	U	1	0.0	0.824	35.6	LOS E	8.3	206.6	0.93	1.30	29.9
5	L2	132	0.0	0.824	35.6	LOS E	8.3	206.6	0.93	1.30	28.1
2	T1	1301	0.0	0.824	32.5	LOS D	9.9	248.6	0.94	1.31	30.0
12	R2	148	0.0	0.168	5.7	LOS A	0.8	20.3	0.69	0.66	36.8
Approach		1583	0.0	0.824	30.3	LOS D	9.9	248.6	0.91	1.25	30.2
All Vehicles		6642	0.2	0.836	22.6	LOS C	10.3	258.4	0.80	1.04	30.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_Existing + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	536	0.0	0.348	8.9	LOS A	2.4	59.3	0.86	0.85	30.8
8	T1	148	0.0	0.380	11.4	LOS B	2.3	56.9	0.84	0.88	31.0
18	R2	83	0.0	0.380	11.4	LOS B	2.3	56.9	0.84	0.88	31.0
Approach		766	0.0	0.380	9.7	LOS A	2.4	59.3	0.85	0.86	30.8
East: WB Boronda Rd											
1	L2	15	0.0	0.570	11.9	LOS B	4.3	107.4	0.68	0.83	32.0
6	T1	1146	0.2	0.570	11.0	LOS B	4.6	114.2	0.68	0.82	33.6
16	R2	235	0.0	0.171	4.0	LOS A	0.8	19.1	0.33	0.21	35.4
Approach		1396	0.2	0.570	9.8	LOS A	4.6	114.2	0.62	0.71	33.9
North: SB Independence Blvd (Future)											
7	L2	101	0.0	0.330	8.8	LOS A	1.8	44.0	0.79	0.80	33.2
4	T1	147	0.0	0.330	8.8	LOS A	1.8	44.0	0.79	0.80	31.3
14	R2	90	0.0	0.119	6.0	LOS A	0.6	14.4	0.73	0.71	34.2
Approach		338	0.0	0.330	8.0	LOS A	1.8	44.0	0.77	0.78	32.7
West: EB Boronda Rd											
5u	U	1	0.0	0.609	10.9	LOS B	5.5	136.6	0.64	0.48	33.9
5	L2	106	0.0	0.609	10.9	LOS B	5.5	136.6	0.64	0.48	32.8
2	T1	1435	0.1	0.609	10.2	LOS B	5.5	138.1	0.62	0.45	33.8
12	R2	1	0.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	37.0
Approach		1543	0.1	0.609	10.2	LOS B	5.5	138.1	0.62	0.45	33.7
All Vehicles		4043	0.1	0.609	9.8	LOS A	5.5	138.1	0.68	0.65	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	1198	186	27	1180	164	99	23	15	108	17	79
Future Volume (veh/h)	207	1198	186	27	1180	164	99	23	15	108	17	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	225	1248	182	28	1229	75	103	25	11	117	18	60
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	0
Peak Hour Factor	0.92	0.96	0.96	0.96	0.96	0.92	0.96	0.92	0.96	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	2	2	2	2	2	2	2
Cap, veh/h	274	1525	221	41	1291	588	136	33	14	146	23	75
Arrive On Green	0.15	0.51	0.51	0.02	0.38	0.38	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1774	3011	437	1723	3438	1566	1313	319	140	1031	159	529
Grp Volume(v), veh/h	225	710	720	28	1229	75	139	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1728	1723	1719	1566	1772	0	0	1718	0	0
Q Serve(g_s), s	8.8	24.7	25.2	1.1	24.8	2.2	5.4	0.0	0.0	7.8	0.0	0.0
Cycle Q Clear(g_c), s	8.8	24.7	25.2	1.1	24.8	2.2	5.4	0.0	0.0	7.8	0.0	0.0
Prop In Lane	1.00		0.25	1.00		1.00	0.74		0.08	0.60		0.31
Lane Grp Cap(c), veh/h	274	870	875	41	1291	588	183	0	0	244	0	0
V/C Ratio(X)	0.82	0.82	0.82	0.68	0.95	0.13	0.76	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	398	916	921	97	1291	588	398	0	0	386	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.2	14.8	14.9	34.5	21.6	14.6	31.1	0.0	0.0	29.6	0.0	0.0
Incr Delay (d2), s/veh	8.6	5.5	5.9	17.9	15.0	0.1	6.3	0.0	0.0	6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	13.0	13.2	0.7	14.3	1.0	3.0	0.0	0.0	4.1	0.0	0.0
LnGrp Delay(d),s/veh	37.7	20.3	20.8	52.4	36.7	14.7	37.4	0.0	0.0	35.8	0.0	0.0
LnGrp LOS	D	C	C	D	D	B	D			D		
Approach Vol, veh/h		1655			1332			139			195	
Approach Delay, s/veh		22.9			35.8			37.4			35.8	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	40.1		14.1	15.0	30.8		11.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	16.0	26.0		16.0
Max Q Clear Time (g_c+I1), s	3.1	27.2		9.8	10.8	26.8		7.4
Green Ext Time (p_c), s	0.0	8.9		0.5	0.3	0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	4	5	137	91	11
Future Vol, veh/h	9	4	5	137	91	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	4	5	149	99	12
Number of Lanes	1	1	0	2	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8	7.9	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	10%	0%	100%	0%	0%	0%
Vol Thru, %	90%	100%	0%	0%	100%	73%
Vol Right, %	0%	0%	0%	100%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	91	9	4	61	41
LT Vol	5	0	9	0	0	0
Through Vol	46	91	0	0	61	30
RT Vol	0	0	0	4	0	11
Lane Flow Rate	55	99	10	4	66	45
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.071	0.127	0.015	0.005	0.085	0.056
Departure Headway (Hd)	4.663	4.614	5.65	4.447	4.635	4.449
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	767	775	637	810	770	801
Service Time	2.402	2.352	3.35	2.147	2.386	2.199
HCM Lane V/C Ratio	0.072	0.128	0.016	0.005	0.086	0.056
HCM Control Delay	7.8	8	8.4	7.2	7.8	7.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0	0	0.3	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	199	56	215	186	210	114	1042	242	187	1102	231
Future Volume (veh/h)	230	199	56	215	186	210	114	1042	242	187	1102	231
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	242	209	7	226	196	34	120	1097	235	197	1160	148
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	527	228	276	300	251	542	2022	433	302	1347	411
Arrive On Green	0.14	0.15	0.15	0.16	0.16	0.16	0.31	0.48	0.47	0.09	0.26	0.26
Sat Flow, veh/h	1774	3539	1532	1774	1863	1560	1774	4191	897	3442	5085	1551
Grp Volume(v), veh/h	242	209	7	226	196	34	120	887	445	197	1160	148
Grp Sat Flow(s),veh/h/ln	1774	1770	1532	1774	1863	1560	1774	1695	1698	1721	1695	1551
Q Serve(g_s), s	17.3	6.8	0.3	15.8	12.6	2.4	6.5	23.5	23.7	7.1	27.8	6.7
Cycle Q Clear(g_c), s	17.3	6.8	0.3	15.8	12.6	2.4	6.5	23.5	23.7	7.1	27.8	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	255	527	228	276	300	251	542	1636	819	302	1347	411
V/C Ratio(X)	0.95	0.40	0.03	0.82	0.65	0.14	0.22	0.54	0.54	0.65	0.86	0.36
Avail Cap(c_a), veh/h	255	998	432	457	738	618	542	1636	819	371	1347	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	49.3	13.0	52.3	50.3	46.0	33.1	23.2	23.7	56.5	44.8	17.4
Incr Delay (d2), s/veh	42.0	0.2	0.0	2.3	0.9	0.1	0.1	1.3	2.6	1.5	7.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	3.4	0.1	7.9	6.6	1.0	3.2	11.3	11.7	3.4	13.9	3.1
LnGrp Delay(d),s/veh	96.4	49.4	13.1	54.5	51.2	46.1	33.2	24.5	26.3	58.0	52.2	19.9
LnGrp LOS	F	D	B	D	D	D	C	C	C	E	D	B
Approach Vol, veh/h		458			456			1452			1505	
Approach Delay, s/veh		73.7			52.5			25.8			49.8	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	65.8	23.9	23.1	43.1	37.9	22.4	24.6
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	11.7	27.0	30.9	34.0	6.9	31.8	16.3	48.6
Max Q Clear Time (g_c+I1), s	9.1	25.7	17.8	8.8	8.5	29.8	19.3	14.6
Green Ext Time (p_c), s	0.0	0.6	0.1	0.8	0.0	0.9	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	0	306	0	0	0	385	1412	0	9	1177	142
Future Volume (veh/h)	278	0	306	0	0	0	385	1412	0	9	1177	142
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	980	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	299	0	74				414	1518	0	10	1266	140
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	374	0	327				494	3128	0	27	1635	181
Arrive On Green	0.21	0.00	0.21				0.28	0.62	0.00	0.02	0.35	0.33
Sat Flow, veh/h	1811	0	1583				1774	5253	0	1774	4647	514
Grp Volume(v), veh/h	299	0	74				414	1518	0	10	924	482
Grp Sat Flow(s),veh/h/ln	906	0	1583				1774	1695	0	1774	1695	1770
Q Serve(g_s), s	11.5	0.0	2.9				16.1	12.0	0.0	0.4	17.8	17.9
Cycle Q Clear(g_c), s	11.5	0.0	2.9				16.1	12.0	0.0	0.4	17.8	17.9
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.29
Lane Grp Cap(c), veh/h	374	0	327				494	3128	0	27	1193	623
V/C Ratio(X)	0.80	0.00	0.23				0.84	0.49	0.00	0.37	0.77	0.77
Avail Cap(c_a), veh/h	752	0	658				725	3128	0	483	1454	759
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	24.3				24.9	7.8	0.0	35.8	21.2	21.4
Incr Delay (d2), s/veh	4.0	0.0	0.3				9.1	0.1	0.0	3.2	2.2	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.7				9.1	5.5	0.0	0.2	8.7	9.4
LnGrp Delay(d),s/veh	31.7	0.0	24.6				34.0	7.9	0.0	39.0	23.4	25.5
LnGrp LOS	C		C				C	A		D	C	C
Approach Vol, veh/h		373						1932			1416	
Approach Delay, s/veh		30.3						13.5			24.2	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.1	49.2		19.2	24.4	29.8		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	20.0	30.0		30.0	30.0	30.0		
Max Q Clear Time (g_c+I1), s	2.4	14.0		13.5	18.1	19.9		
Green Ext Time (p_c), s	0.0	14.0		1.2	2.3	4.5		

Intersection Summary		
HCM 2010 Ctrl Delay		19.2
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	943	191	11	645	71	150	101	23	80	107	329
Future Volume (veh/h)	440	943	191	11	645	71	150	101	23	80	107	329
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	468	1003	193	12	686	69	160	107	14	85	114	73
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	1530	294	88	956	96	371	466	61	383	539	448
Arrive On Green	0.27	0.52	0.48	0.05	0.29	0.26	0.29	0.29	0.27	0.29	0.29	0.29
Sat Flow, veh/h	1774	2961	569	1774	3245	326	1172	1609	211	1243	1863	1547
Grp Volume(v), veh/h	468	599	597	12	374	381	160	0	121	85	114	73
Grp Sat Flow(s),veh/h/ln	1774	1770	1760	1774	1770	1802	1172	0	1819	1243	1863	1547
Q Serve(g_s), s	21.8	20.6	20.9	0.5	15.8	15.8	10.0	0.0	4.2	4.7	3.9	2.9
Cycle Q Clear(g_c), s	21.8	20.6	20.9	0.5	15.8	15.8	13.8	0.0	4.2	8.9	3.9	2.9
Prop In Lane	1.00		0.32	1.00		0.18	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	483	915	910	88	521	531	371	0	526	383	539	448
V/C Ratio(X)	0.97	0.65	0.66	0.14	0.72	0.72	0.43	0.00	0.23	0.22	0.21	0.16
Avail Cap(c_a), veh/h	483	915	910	483	800	814	575	0	842	599	862	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	14.7	15.1	37.9	26.3	26.6	27.7	0.0	22.6	26.0	22.4	22.1
Incr Delay (d2), s/veh	33.0	1.7	1.7	0.7	1.9	1.8	0.8	0.0	0.2	0.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	10.4	10.5	0.3	8.0	8.1	3.3	0.0	2.2	1.6	2.0	1.3
LnGrp Delay(d),s/veh	63.0	16.4	16.8	38.6	28.2	28.4	28.5	0.0	22.9	26.2	22.6	22.3
LnGrp LOS	E	B	B	D	C	C	C		C	C	C	C
Approach Vol, veh/h		1664			767			281			272	
Approach Delay, s/veh		29.7			28.4			26.0			23.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	47.1		28.1	26.7	28.6		28.1
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	20.0	35.0		37.0	20.0	35.0		37.0
Max Q Clear Time (g_c+I1), s	2.5	22.9		10.9	23.8	17.8		15.8
Green Ext Time (p_c), s	0.0	8.4		2.5	0.0	4.0		2.4

Intersection Summary		
HCM 2010 Ctrl Delay		28.5
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	189	95	248	143	76	60	780	303	166	858	195
Future Volume (veh/h)	207	189	95	248	143	76	60	780	303	166	858	195
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	218	199	51	261	151	22	63	821	290	175	903	128
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	296	414	104	345	604	87	114	903	319	206	1430	638
Arrive On Green	0.17	0.15	0.17	0.19	0.19	0.17	0.07	0.36	0.34	0.12	0.42	0.42
Sat Flow, veh/h	1774	2806	702	1774	3108	446	1723	2494	880	1723	3438	1533
Grp Volume(v), veh/h	218	124	126	261	85	88	63	566	545	175	903	128
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1770	1784	1723	1719	1654	1723	1719	1533
Q Serve(g_s), s	11.9	6.5	6.8	14.2	4.1	4.3	3.6	31.9	32.1	10.2	21.2	5.4
Cycle Q Clear(g_c), s	11.9	6.5	6.8	14.2	4.1	4.3	3.6	31.9	32.1	10.2	21.2	5.4
Prop In Lane	1.00		0.40	1.00		0.25	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	296	261	256	345	344	347	114	623	599	206	1430	638
V/C Ratio(X)	0.74	0.47	0.49	0.76	0.25	0.25	0.55	0.91	0.91	0.85	0.63	0.20
Avail Cap(c_a), veh/h	400	364	358	643	641	646	270	640	615	270	1430	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	39.9	39.6	38.9	34.8	35.1	46.2	31.0	31.5	44.0	23.6	19.0
Incr Delay (d2), s/veh	4.7	1.3	1.5	3.4	0.4	0.4	4.2	16.7	17.4	17.4	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	3.3	3.3	7.3	2.1	2.2	1.9	18.0	17.5	5.9	10.2	2.3
LnGrp Delay(d),s/veh	45.1	41.2	41.1	42.3	35.2	35.5	50.4	47.7	48.9	61.5	24.5	19.2
LnGrp LOS	D	D	D	D	D	D	D	D	D	E	C	B
Approach Vol, veh/h		468			434			1174			1206	
Approach Delay, s/veh		43.0			39.5			48.4			29.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	46.5		23.9	16.2	41.0		21.1
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	5.6	23.2		16.2	12.2	34.1		13.9
Green Ext Time (p_c), s	0.1	9.5		1.7	0.1	0.9		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1524	364	0	1155	123	0	0	0	402	0	339
Future Volume (veh/h)	0	1524	364	0	1155	123	0	0	0	402	0	339
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1604	0	0	1216	0				423	0	337
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2062	923	0	2062	0				936	0	431
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1604	0	0	1216	0				423	0	337
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	21.8	0.0	0.0	13.7	0.0				6.4	0.0	12.3
Cycle Q Clear(g_c), s	0.0	21.8	0.0	0.0	13.7	0.0				6.4	0.0	12.3
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2062	923	0	2062	0				936	0	431
V/C Ratio(X)	0.00	0.78	0.00	0.00	0.59	0.00				0.45	0.00	0.78
Avail Cap(c_a), veh/h	0	2263	1012	0	2263	0				2238	0	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	0.0	0.0	7.7	0.0				18.9	0.0	21.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.2	0.0				0.3	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.4	0.0	0.0	6.5	0.0				3.0	0.0	5.6
LnGrp Delay(d),s/veh	0.0	10.8	0.0	0.0	7.9	0.0				19.1	0.0	23.4
LnGrp LOS		B			A					B		C
Approach Vol, veh/h		1604			1216						760	
Approach Delay, s/veh		10.8			7.9						21.0	
Approach LOS		B			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.5		21.0		41.5		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		40.0		40.0		40.0		
Max Q Clear Time (g_c+I1), s		23.8		14.3		15.7		
Green Ext Time (p_c), s		12.5		2.1		17.1		

Intersection Summary		
HCM 2010 Ctrl Delay		12.0
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1466	439	0	898	253	361	0	357	0	0	0
Future Volume (vph)	0	1466	439	0	898	253	361	0	357	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.98		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1504		3305		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1504		3305		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1560	467	0	955	269	384	0	380	0	0	0
RTOR Reduction (vph)	0	0	159	0	29	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	1560	308	0	1195	0	192	192	328	0	0	0
Confl. Peds. (#/hr)			1			3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		56.9	56.9		56.9		20.5	20.5	20.5			
Effective Green, g (s)		57.5	56.9		57.5		20.7	20.7	20.7			
Actuated g/C Ratio		0.67	0.66		0.67		0.24	0.24	0.24			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2293	992		2204		403	403	380			
v/s Ratio Prot		c0.45			0.36		0.11	0.11				
v/s Ratio Perm			0.20						c0.21			
v/c Ratio		0.68	0.31		0.54		0.48	0.48	0.86			
Uniform Delay, d1		8.7	6.3		7.5		28.1	28.1	31.4			
Progression Factor		1.00	1.00		0.46		1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.2		0.2		0.3	0.3	17.3			
Delay (s)		9.6	6.4		3.7		28.4	28.4	48.7			
Level of Service		A	A		A		C	C	D			
Approach Delay (s)		8.9			3.7			38.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	13.4
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	709	119	153	521	175	143	1077	199	264	904	164
Future Volume (veh/h)	238	709	119	153	521	175	143	1077	199	264	904	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	243	723	110	156	532	149	146	1099	87	269	922	151
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	186	827	126	221	789	220	251	965	430	680	1747	285
Arrive On Green	0.11	0.28	0.26	0.13	0.30	0.28	0.07	0.27	0.27	0.20	0.40	0.38
Sat Flow, veh/h	1723	2988	454	1723	2655	740	3442	3539	1578	3442	4399	718
Grp Volume(v), veh/h	243	416	417	156	344	337	146	1099	87	269	710	363
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1676	1721	1770	1578	1721	1695	1726
Q Serve(g_s), s	13.8	29.5	29.6	11.1	22.5	22.8	5.3	34.9	5.4	8.7	20.4	20.7
Cycle Q Clear(g_c), s	13.8	29.5	29.6	11.1	22.5	22.8	5.3	34.9	5.4	8.7	20.4	20.7
Prop In Lane	1.00		0.26	1.00		0.44	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	186	476	477	221	511	498	251	965	430	680	1346	685
V/C Ratio(X)	1.31	0.87	0.87	0.71	0.67	0.68	0.58	1.14	0.20	0.40	0.53	0.53
Avail Cap(c_a), veh/h	186	525	527	350	689	672	320	965	430	680	1346	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	44.1	44.4	53.5	39.5	40.0	57.4	46.6	35.8	44.7	29.4	29.8
Incr Delay (d2), s/veh	171.7	13.1	13.2	1.6	0.6	0.6	0.8	75.2	1.1	0.1	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	15.7	15.8	5.4	10.8	10.6	2.5	27.1	2.5	4.2	9.8	10.4
LnGrp Delay(d),s/veh	228.8	57.3	57.6	55.1	40.1	40.7	58.2	121.8	36.9	44.9	30.9	32.8
LnGrp LOS	F	E	E	E	D	D	E	F	D	D	C	C
Approach Vol, veh/h		1076			837			1332			1342	
Approach Delay, s/veh		96.1			43.1			109.2			34.2	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.3	38.9	20.4	39.4	13.3	54.8	17.8	42.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	32.8	23.9	37.0	9.8	32.9	11.7	49.2
Max Q Clear Time (g_c+I1), s	10.7	36.9	13.1	31.6	7.3	22.7	15.8	24.8
Green Ext Time (p_c), s	0.0	0.0	1.2	1.1	0.0	2.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	72.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	862	72	614	647	456	88	1279	769	413	1073	63
Future Volume (veh/h)	100	862	72	614	647	456	88	1279	769	413	1073	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	105	907	0	646	681	0	93	1346	776	435	1129	63
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	141	863	386	624	1235	552	135	1082	1373	516	1293	72
Arrive On Green	0.08	0.25	0.00	0.19	0.36	0.00	0.08	0.31	0.31	0.15	0.38	0.36
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2759	3442	3406	190
Grp Volume(v), veh/h	105	907	0	646	681	0	93	1346	776	435	586	606
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1380	1721	1770	1826
Q Serve(g_s), s	9.3	39.0	0.0	29.0	24.6	0.0	7.9	47.5	30.6	19.1	47.7	47.8
Cycle Q Clear(g_c), s	9.3	39.0	0.0	29.0	24.6	0.0	7.9	47.5	30.6	19.1	47.7	47.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	141	863	386	624	1235	552	135	1082	1373	516	672	694
V/C Ratio(X)	0.74	1.05	0.00	1.03	0.55	0.00	0.69	1.24	0.57	0.84	0.87	0.87
Avail Cap(c_a), veh/h	294	863	386	624	1235	552	251	1082	1373	554	672	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.7	58.2	0.0	63.2	39.8	0.0	69.9	53.9	27.5	64.2	44.7	44.8
Incr Delay (d2), s/veh	2.9	44.8	0.0	45.3	0.4	0.0	2.3	117.5	0.5	9.9	11.9	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	23.8	0.0	17.3	11.7	0.0	4.0	40.8	11.8	9.8	25.5	26.3
LnGrp Delay(d),s/veh	72.6	102.9	0.0	108.4	40.2	0.0	72.3	171.4	27.9	74.1	56.6	56.5
LnGrp LOS	E	F		F	D		E	F	C	E	E	E
Approach Vol, veh/h		1012			1327			2215			1627	
Approach Delay, s/veh		99.8			73.4			117.0			61.2	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.3	51.5	33.0	43.5	15.8	63.0	16.7	59.8
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	23.0	45.0	27.0	* 37	20.0	46.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	21.1	49.5	31.0	41.0	9.9	49.8	11.3	26.6
Green Ext Time (p_c), s	0.2	0.0	0.0	0.0	0.1	0.0	0.1	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	90.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1276	785	756	377	271	917
Future Volume (veh/h)	1276	785	756	377	271	917
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	1343	826	796	0	285	0
Adj No. of Lanes	2	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	1448	2764	1145	512	415	191
Arrive On Green	0.43	0.80	0.33	0.00	0.12	0.00
Sat Flow, veh/h	3343	3529	3529	1538	3442	1583
Grp Volume(v), veh/h	1343	826	796	0	285	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1538	1721	1583
Q Serve(g_s), s	40.3	6.6	21.3	0.0	8.4	0.0
Cycle Q Clear(g_c), s	40.3	6.6	21.3	0.0	8.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1448	2764	1145	512	415	191
V/C Ratio(X)	0.93	0.30	0.70	0.00	0.69	0.00
Avail Cap(c_a), veh/h	1482	3016	1362	609	1023	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	28.5	2.7	30.7	0.0	44.7	0.0
Incr Delay (d2), s/veh	10.3	0.1	1.2	0.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	3.1	10.3	0.0	4.1	0.0
LnGrp Delay(d),s/veh	38.8	2.7	31.9	0.0	46.7	0.0
LnGrp LOS	D	A	C		D	
Approach Vol, veh/h		2169	796		285	
Approach Delay, s/veh		25.0	31.9		46.7	
Approach LOS		C	C		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		89.2		16.8	49.9	39.3		
Change Period (Y+Rc), s		6.0		5.5	6.0	6.0		
Max Green Setting (Gmax), s		91.0		30.0	45.0	40.0		
Max Q Clear Time (g_c+I1), s		8.6		10.4	42.3	23.3		
Green Ext Time (p_c), s		18.2		0.9	1.6	10.0		

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	418.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	554	389	94	494	496	22
Future Vol, veh/h	554	389	94	494	496	22
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	230	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	583	409	99	520	522	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1001	0	1514	796
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	718	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	680	-	~ 132	387
Stage 1	-	-	-	-	~ 444	-
Stage 2	-	-	-	-	~ 483	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	680	-	~ 112	384
Mov Cap-2 Maneuver	-	-	-	-	~ 112	-
Stage 1	-	-	-	-	~ 441	-
Stage 2	-	-	-	-	~ 413	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	$ 1652.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	112	384	-	-	680	-
HCM Lane V/C Ratio	4.662	0.06	-	-	0.146	-
HCM Control Delay (s)	$ 1724.8	15	-	-	11.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	54.8	0.2	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	192	0	59	0	0	0	91	52	0	0	41	295
Future Vol, veh/h	192	0	59	0	0	0	91	52	0	0	41	295
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	213	0	66	0	0	0	101	58	0	0	46	328

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	469	469	209	502	633	58	373	0	0	58	0	0
Stage 1	209	209	-	260	260	-	-	-	-	-	-	-
Stage 2	260	260	-	242	373	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	492	831	480	397	1008	1185	-	-	1546	-	-
Stage 1	793	729	-	745	693	-	-	-	-	-	-	-
Stage 2	745	693	-	762	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	471	449	831	412	362	1008	1185	-	-	1546	-	-
Mov Cap-2 Maneuver	471	449	-	412	362	-	-	-	-	-	-	-
Stage 1	723	729	-	679	632	-	-	-	-	-	-	-
Stage 2	679	632	-	702	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.4	0	5.3	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1185	-	-	524	-	1546	-	-
HCM Lane V/C Ratio	0.085	-	-	0.532	-	-	-	-
HCM Control Delay (s)	8.3	0	-	19.4	0	0	-	-
HCM Lane LOS	A	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.1	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	45	168	567	97	89	312	1189	670	97	1076	25
Future Volume (veh/h)	27	45	168	567	97	89	312	1189	670	97	1076	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	29	49	13	616	105	22	339	1292	410	105	1170	25
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	135	112	754	408	342	549	1760	756	152	1401	30
Arrive On Green	0.07	0.07	0.07	0.22	0.22	0.22	0.31	0.50	0.50	0.09	0.27	0.26
Sat Flow, veh/h	1774	1863	1538	3442	1863	1562	1774	3539	1521	1774	5122	109
Grp Volume(v), veh/h	29	49	13	616	105	22	339	1292	410	105	774	421
Grp Sat Flow(s),veh/h/ln	1774	1863	1538	1721	1863	1562	1774	1770	1521	1774	1695	1842
Q Serve(g_s), s	2.0	3.2	1.0	21.8	6.0	1.4	20.9	37.0	23.8	7.4	27.5	27.5
Cycle Q Clear(g_c), s	2.0	3.2	1.0	21.8	6.0	1.4	20.9	37.0	23.8	7.4	27.5	27.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	129	135	112	754	408	342	549	1760	756	152	927	504
V/C Ratio(X)	0.22	0.36	0.12	0.82	0.26	0.06	0.62	0.73	0.54	0.69	0.84	0.84
Avail Cap(c_a), veh/h	402	422	348	995	538	451	549	1760	756	152	927	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	56.5	55.5	47.5	41.3	39.6	37.7	25.5	22.2	56.8	43.8	43.9
Incr Delay (d2), s/veh	0.3	0.6	0.2	3.1	0.1	0.0	1.5	2.8	2.8	10.4	8.8	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.4	10.7	3.1	0.6	10.5	18.6	10.5	4.1	14.0	16.1
LnGrp Delay(d),s/veh	56.3	57.1	55.7	50.6	41.5	39.6	39.2	28.2	24.9	67.2	52.6	58.9
LnGrp LOS	E	E	E	D	D	D	D	C	C	E	D	E
Approach Vol, veh/h		91			743			2041			1300	
Approach Delay, s/veh		56.6			49.0			29.4			55.8	
Approach LOS		E			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	67.6		13.3	43.6	39.0		32.1
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	8.9	32.9		27.4	8.9	32.9		34.9
Max Q Clear Time (g_c+I1), s	9.4	39.0		5.2	22.9	29.5		23.8
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	1.3		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	13	68	5	15	12	169	1863	8	10	1294	415
Future Volume (veh/h)	328	13	68	5	15	12	169	1863	8	10	1294	415
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	357	14	23	5	16	4	184	2025	9	11	1407	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	5	519	39	107	20	250	1917	9	58	1494	0
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.31	0.14	0.53	0.51	0.03	0.42	0.00
Sat Flow, veh/h	409	16	1572	0	323	62	1774	3613	16	1774	3632	0
Grp Volume(v), veh/h	371	0	23	25	0	0	184	991	1043	11	1407	0
Grp Sat Flow(s),veh/h/ln	425	0	1572	385	0	0	1774	1770	1860	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	0.0	11.1	59.5	59.5	0.7	42.8	0.0
Cycle Q Clear(g_c), s	37.0	0.0	1.1	37.0	0.0	0.0	11.1	59.5	59.5	0.7	42.8	0.0
Prop In Lane	0.96		1.00	0.20		0.16	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	203	0	519	165	0	0	250	939	987	58	1494	0
V/C Ratio(X)	1.82	0.00	0.04	0.15	0.00	0.00	0.74	1.06	1.06	0.19	0.94	0.00
Avail Cap(c_a), veh/h	203	0	519	165	0	0	514	939	987	514	1499	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.3	0.0	25.6	29.4	0.0	0.0	46.2	26.3	26.3	52.8	31.1	0.0
Incr Delay (d2), s/veh	389.8	0.0	0.0	0.2	0.0	0.0	1.6	45.2	45.0	0.6	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.3	0.0	0.5	0.5	0.0	0.0	5.6	40.7	42.8	0.3	23.4	0.0
LnGrp Delay(d),s/veh	433.1	0.0	25.6	29.5	0.0	0.0	47.8	71.5	71.4	53.4	43.0	0.0
LnGrp LOS	F		C	C			D	F	F	D	D	
Approach Vol, veh/h		394			25			2218			1418	
Approach Delay, s/veh		409.3			29.5			69.5			43.0	
Approach LOS		F			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	63.5		41.0	19.8	51.3		41.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	30.0	45.0		35.0	30.0	45.0		35.0
Max Q Clear Time (g_c+I1), s	2.7	61.5		39.0	13.1	44.8		39.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	0.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	720	145	41	497	236	169	480	59	319	340	330
Future Volume (veh/h)	349	720	145	41	497	236	169	480	59	319	340	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	371	766	144	44	529	67	180	511	17	339	362	155
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	473	1166	219	57	1041	444	219	894	396	437	489	410
Arrive On Green	0.14	0.40	0.40	0.03	0.29	0.29	0.12	0.25	0.25	0.13	0.27	0.27
Sat Flow, veh/h	3343	2888	543	1774	3539	1511	1774	3539	1568	3343	1810	1518
Grp Volume(v), veh/h	371	456	454	44	529	67	180	511	17	339	362	155
Grp Sat Flow(s),veh/h/ln	1672	1719	1711	1774	1770	1511	1774	1770	1568	1672	1810	1518
Q Serve(g_s), s	10.1	20.2	20.2	2.3	11.6	3.1	9.3	11.8	0.8	9.2	17.1	7.8
Cycle Q Clear(g_c), s	10.1	20.2	20.2	2.3	11.6	3.1	9.3	11.8	0.8	9.2	17.1	7.8
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	473	694	691	57	1041	444	219	894	396	437	489	410
V/C Ratio(X)	0.79	0.66	0.66	0.78	0.51	0.15	0.82	0.57	0.04	0.78	0.74	0.38
Avail Cap(c_a), veh/h	1069	694	691	567	1376	587	567	1169	518	1069	598	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	22.7	22.8	45.1	27.5	24.5	40.1	30.6	26.5	39.5	31.2	27.8
Incr Delay (d2), s/veh	2.9	2.3	2.3	20.0	0.4	0.2	7.4	0.6	0.0	3.0	3.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.9	9.9	1.4	5.7	1.3	5.0	5.8	0.3	4.4	9.1	3.3
LnGrp Delay(d),s/veh	41.8	25.0	25.1	65.1	27.9	24.6	47.6	31.2	26.5	42.5	35.1	28.4
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	D	C
Approach Vol, veh/h		1281			640			708			856	
Approach Delay, s/veh		29.9			30.1			35.3			36.8	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	41.9	15.6	29.4	17.3	31.6	16.3	28.7
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	4.3	22.2	11.3	19.1	12.1	13.6	11.2	13.8
Green Ext Time (p_c), s	0.1	7.8	0.4	4.3	1.2	8.0	1.1	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	21

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	502	196	292	113	50	456
Future Vol, veh/h	502	196	292	113	50	456
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	230	-	-	-	220	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	558	218	324	126	56	507

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	450	0	-	0	1720	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	1333	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1110	-	-	-	97	654
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	242	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1110	-	-	-	~ 48	654
Mov Cap-2 Maneuver	-	-	-	-	~ 48	-
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	120	-

Approach	EB	WB	SB
HCM Control Delay, s	8.3	0	55.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1110	-	-	-	48	654
HCM Lane V/C Ratio	0.503	-	-	-	1.157	0.775
HCM Control Delay (s)	11.5	-	-	-	$ 316.2	26.8
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	2.9	-	-	-	5.1	7.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	287	14	81	322	55	3	497	101	13	397	190
Future Volume (veh/h)	351	287	14	81	322	55	3	497	101	13	397	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	373	305	5	86	343	46	3	529	38	14	422	72
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	428	643	546	154	598	79	50	629	523	81	661	562
Arrive On Green	0.25	0.36	0.36	0.09	0.20	0.17	0.03	0.34	0.34	0.05	0.36	0.36
Sat Flow, veh/h	1723	1810	1538	1723	3043	404	1774	1863	1548	1774	1863	1582
Grp Volume(v), veh/h	373	305	5	86	192	197	3	529	38	14	422	72
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1728	1774	1863	1548	1774	1863	1582
Q Serve(g_s), s	19.3	12.2	0.2	4.5	9.4	9.6	0.2	24.4	1.6	0.7	17.6	2.9
Cycle Q Clear(g_c), s	19.3	12.2	0.2	4.5	9.4	9.6	0.2	24.4	1.6	0.7	17.6	2.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	428	643	546	154	338	340	50	629	523	81	661	562
V/C Ratio(X)	0.87	0.47	0.01	0.56	0.57	0.58	0.06	0.84	0.07	0.17	0.64	0.13
Avail Cap(c_a), veh/h	428	819	696	280	630	633	236	682	567	231	682	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	23.3	19.4	40.6	33.8	34.1	44.0	28.5	20.9	42.7	25.0	20.3
Incr Delay (d2), s/veh	17.6	0.5	0.0	3.1	1.5	1.6	0.5	8.7	0.1	1.0	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	6.2	0.1	2.3	4.6	4.7	0.1	14.0	0.7	0.4	9.4	1.3
LnGrp Delay(d),s/veh	51.1	23.8	19.4	43.7	35.3	35.7	44.5	37.2	21.0	43.8	26.9	20.4
LnGrp LOS	D	C	B	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		683			475			570			508	
Approach Delay, s/veh		38.7			37.0			36.2			26.5	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	37.1	6.6	37.1	27.1	22.3	8.2	35.4
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	13.0	40.0	10.3	32.0	21.0	32.0	10.0	32.0
Max Q Clear Time (g_c+I1), s	6.5	14.2	2.2	19.6	21.3	11.6	2.7	26.4
Green Ext Time (p_c), s	0.1	4.3	0.0	5.1	0.0	4.0	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	677	101	154	518	78	277	280	299	65	180	43
Future Volume (veh/h)	53	677	101	154	518	78	277	280	299	65	180	43
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.95	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	55	705	96	160	540	74	289	292	120	68	188	39
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	88	1130	154	211	1339	183	407	709	596	331	569	118
Arrive On Green	0.05	0.37	0.35	0.12	0.44	0.42	0.38	0.38	0.38	0.38	0.38	0.37
Sat Flow, veh/h	1723	3036	413	1723	3020	412	1141	1863	1565	965	1494	310
Grp Volume(v), veh/h	55	399	402	160	306	308	289	292	120	68	0	227
Grp Sat Flow(s),veh/h/ln	1723	1719	1730	1723	1719	1713	1141	1863	1565	965	0	1804
Q Serve(g_s), s	3.0	18.2	18.4	8.6	11.6	11.8	23.1	11.1	4.9	5.4	0.0	8.6
Cycle Q Clear(g_c), s	3.0	18.2	18.4	8.6	11.6	11.8	31.7	11.1	4.9	16.4	0.0	8.6
Prop In Lane	1.00		0.24	1.00		0.24	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	88	640	644	211	762	759	407	709	596	331	0	687
V/C Ratio(X)	0.62	0.62	0.62	0.76	0.40	0.41	0.71	0.41	0.20	0.21	0.00	0.33
Avail Cap(c_a), veh/h	555	750	755	376	762	759	459	794	667	331	0	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	24.7	24.9	40.9	18.1	18.4	32.3	21.9	20.0	27.9	0.0	21.2
Incr Delay (d2), s/veh	6.9	2.3	2.3	5.6	0.7	0.7	4.4	0.4	0.2	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	9.0	9.1	4.5	5.7	5.7	7.7	5.8	2.1	1.4	0.0	4.3
LnGrp Delay(d),s/veh	51.7	27.0	27.2	46.4	18.9	19.1	36.7	22.3	20.1	28.2	0.0	21.4
LnGrp LOS	D	C	C	D	B	B	D	C	C	C		C
Approach Vol, veh/h		856			774			701			295	
Approach Delay, s/veh		28.6			24.7			27.9			23.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.8	39.8		40.6	8.9	46.6		40.6
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	40.0		30.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	10.6	20.4		18.4	5.0	13.8		33.7
Green Ext Time (p_c), s	0.3	13.5		4.0	0.1	17.2		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	996	55	109	583	138	38	117	249	200	132	40
Future Volume (veh/h)	23	996	55	109	583	138	38	117	249	200	132	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	25	1071	57	117	627	89	41	126	36	215	142	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1335	71	174	1608	714	333	349	278	288	303	257
Arrive On Green	0.04	0.39	0.37	0.10	0.45	0.45	0.19	0.19	0.19	0.16	0.16	0.00
Sat Flow, veh/h	1774	3411	182	1774	3539	1572	1774	1863	1480	1774	1863	1583
Grp Volume(v), veh/h	25	555	573	117	627	89	41	126	36	215	142	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1774	1770	1572	1774	1863	1480	1774	1863	1583
Q Serve(g_s), s	1.4	27.8	27.8	6.4	11.7	3.3	1.9	5.9	2.0	11.5	6.9	0.0
Cycle Q Clear(g_c), s	1.4	27.8	27.8	6.4	11.7	3.3	1.9	5.9	2.0	11.5	6.9	0.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	693	713	174	1608	714	333	349	278	288	303	257
V/C Ratio(X)	0.40	0.80	0.80	0.67	0.39	0.12	0.12	0.36	0.13	0.75	0.47	0.00
Avail Cap(c_a), veh/h	560	745	768	560	1608	714	560	588	467	382	401	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	26.9	27.0	43.4	18.0	15.7	33.7	35.3	33.7	39.8	37.9	0.0
Incr Delay (d2), s/veh	4.1	7.1	6.9	4.5	0.3	0.2	0.2	0.6	0.2	5.5	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	14.9	15.4	3.3	5.8	1.4	0.9	3.1	0.8	6.1	3.6	0.0
LnGrp Delay(d),s/veh	51.2	34.0	33.9	47.9	18.4	15.9	33.9	35.9	34.0	45.3	39.0	0.0
LnGrp LOS	D	C	C	D	B	B	C	D	C	D	D	
Approach Vol, veh/h		1153			833			203			357	
Approach Delay, s/veh		34.4			22.3			35.2			42.8	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	43.0		20.2	7.5	49.3		22.7
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	30.0	40.0		20.0	30.0	40.0		30.0
Max Q Clear Time (g_c+I1), s	3.4	29.8		13.5	3.4	13.7		7.9
Green Ext Time (p_c), s	0.3	7.2		0.8	0.0	21.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	114	40	151	146	21	18	567	256	9	282	241
Future Volume (veh/h)	355	114	40	151	146	21	18	567	256	9	282	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	359	115	14	153	147	0	18	573	208	9	285	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	946	113	206	326	277	433	788	285	97	1051	0
Arrive On Green	0.24	0.30	0.30	0.12	0.18	0.00	0.31	0.31	0.31	0.31	0.31	0.00
Sat Flow, veh/h	1774	3178	381	1774	1863	1583	1087	2544	921	30	3476	0
Grp Volume(v), veh/h	359	63	66	153	147	0	18	398	383	157	137	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1789	1774	1863	1583	1087	1770	1696	1811	1610	0
Q Serve(g_s), s	8.4	1.1	1.2	3.6	3.1	0.0	0.6	8.7	8.7	0.0	2.8	0.0
Cycle Q Clear(g_c), s	8.4	1.1	1.2	3.6	3.1	0.0	3.3	8.7	8.7	2.8	2.8	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.54	0.06		0.00
Lane Grp Cap(c), veh/h	424	527	533	206	326	277	433	548	526	649	499	0
V/C Ratio(X)	0.85	0.12	0.12	0.74	0.45	0.00	0.04	0.73	0.73	0.24	0.27	0.00
Avail Cap(c_a), veh/h	817	1222	1235	1225	1415	1202	872	1262	1210	1334	1149	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.8	11.1	11.1	18.6	16.0	0.0	12.6	13.4	13.4	11.3	11.3	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	2.0	0.4	0.0	0.0	0.7	0.7	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.5	0.6	1.9	1.6	0.0	0.2	4.3	4.1	1.4	1.2	0.0
LnGrp Delay(d),s/veh	17.6	11.2	11.2	20.5	16.4	0.0	12.6	14.0	14.1	11.4	11.4	0.0
LnGrp LOS	B	B	B	C	B		B	B	B	B	B	
Approach Vol, veh/h		488			300			799			294	
Approach Delay, s/veh		15.9			18.5			14.0			11.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	16.9		17.5	14.4	11.6		17.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	33.0		31.0
Max Q Clear Time (g_c+I1), s	5.6	3.2		4.8	10.4	5.1		10.7
Green Ext Time (p_c), s	0.1	0.5		2.3	0.1	0.5		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	290	64	239	232	17	144	817	624	31	428	261
Future Volume (veh/h)	300	290	64	239	232	17	144	817	624	31	428	261
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	312	302	49	249	242	3	150	851	340	32	446	102
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	245	601	96	245	697	312	205	1421	623	88	1187	526
Arrive On Green	0.14	0.20	0.18	0.14	0.20	0.20	0.12	0.41	0.41	0.05	0.35	0.35
Sat Flow, veh/h	1774	3050	489	1774	3539	1583	1723	3438	1508	1723	3438	1525
Grp Volume(v), veh/h	312	174	177	249	242	3	150	851	340	32	446	102
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1774	1770	1583	1723	1719	1508	1723	1719	1525
Q Serve(g_s), s	11.0	7.0	7.1	11.0	4.7	0.1	6.7	15.4	13.6	1.4	7.8	3.7
Cycle Q Clear(g_c), s	11.0	7.0	7.1	11.0	4.7	0.1	6.7	15.4	13.6	1.4	7.8	3.7
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	349	349	245	697	312	205	1421	623	88	1187	526
V/C Ratio(X)	1.27	0.50	0.51	1.02	0.35	0.01	0.73	0.60	0.55	0.37	0.38	0.19
Avail Cap(c_a), veh/h	245	855	855	245	1711	765	346	1791	786	346	1791	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	28.5	28.7	34.3	27.6	25.7	33.9	18.2	17.7	36.6	19.6	18.3
Incr Delay (d2), s/veh	151.0	1.1	1.1	61.8	0.3	0.0	1.9	0.4	0.7	0.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	3.5	3.6	9.5	2.3	0.1	3.3	7.3	5.8	0.7	3.7	1.6
LnGrp Delay(d),s/veh	185.3	29.6	29.9	96.2	27.9	25.7	35.8	18.6	18.4	37.5	20.0	18.7
LnGrp LOS	F	C	C	F	C	C	D	B	B	D	C	B
Approach Vol, veh/h		663			494			1341			580	
Approach Delay, s/veh		102.9			62.3			20.5			20.8	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	36.9	15.0	19.7	13.5	31.5	15.0	19.7
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	10.0	37.0	15.0	40.0	10.0	37.0
Max Q Clear Time (g_c+I1), s	3.4	17.4	13.0	9.1	8.7	9.8	13.0	6.7
Green Ext Time (p_c), s	0.0	13.7	0.0	3.7	0.1	16.2	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.0
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	230	0	10	0	0	0	10	280	0	0	81	88
Future Vol, veh/h	230	0	10	0	0	0	10	280	0	0	81	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	258	0	11	0	0	0	11	315	0	0	91	99
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12	0	10.4	9
HCM LOS	B	-	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	0%	96%	0%	0%	0%
Vol Thru, %	90%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	4%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	187	240	0	81	88
LT Vol	10	0	230	0	0	0
Through Vol	93	187	0	0	81	0
RT Vol	0	0	10	0	0	88
Lane Flow Rate	116	210	270	0	91	99
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.178	0.32	0.4	0	0.144	0.137
Departure Headway (Hd)	5.532	5.484	5.345	5.713	5.703	4.994
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	643	650	669	0	623	709
Service Time	3.314	3.265	3.422	3.713	3.495	2.786
HCM Lane V/C Ratio	0.18	0.323	0.404	0	0.146	0.14
HCM Control Delay	9.5	10.9	12	8.7	9.5	8.6
HCM Lane LOS	A	B	B	N	A	A
HCM 95th-tile Q	0.6	1.4	1.9	0	0.5	0.5

Intersection	
Int Delay, s/veh	12.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	546	8	10	22	12	196
Future Vol, veh/h	546	8	10	22	12	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	650	10	12	26	14	233

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	7	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	930	1064	1603	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1064	1603	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1603	-	923	1064	-	-
HCM Lane V/C Ratio	0.007	-	0.704	0.009	-	-
HCM Control Delay (s)	7.3	0	17.6	8.4	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	6.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	684	94	155	444	62	183	709	252	71	453	210
Future Volume (veh/h)	305	684	94	155	444	62	183	709	252	71	453	210
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	311	698	91	157	453	15	187	723	208	72	462	188
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	365	987	129	210	807	354	239	1252	555	114	695	281
Arrive On Green	0.21	0.32	0.30	0.12	0.23	0.23	0.14	0.36	0.36	0.07	0.29	0.28
Sat Flow, veh/h	1774	3128	407	1774	3539	1554	1723	3438	1524	1723	2383	962
Grp Volume(v), veh/h	311	395	394	157	453	15	187	723	208	72	332	318
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1554	1723	1719	1524	1723	1719	1626
Q Serve(g_s), s	19.9	23.2	23.3	10.1	13.4	0.9	12.4	20.0	11.9	4.8	20.0	20.4
Cycle Q Clear(g_c), s	19.9	23.2	23.3	10.1	13.4	0.9	12.4	20.0	11.9	4.8	20.0	20.4
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	365	558	557	210	807	354	239	1252	555	114	502	475
V/C Ratio(X)	0.85	0.71	0.71	0.75	0.56	0.04	0.78	0.58	0.37	0.63	0.66	0.67
Avail Cap(c_a), veh/h	699	697	696	699	1395	613	679	1355	601	679	677	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	35.6	35.7	50.3	40.3	35.5	49.1	30.2	27.6	53.7	36.7	37.2
Incr Delay (d2), s/veh	5.6	2.4	2.5	5.3	0.6	0.0	5.5	0.5	0.4	5.6	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	11.7	11.7	5.3	6.6	0.4	6.2	9.5	5.0	2.5	9.7	9.3
LnGrp Delay(d),s/veh	50.7	38.0	38.2	55.6	40.9	35.6	54.6	30.7	28.0	59.3	38.2	38.8
LnGrp LOS	D	D	D	E	D	D	D	C	C	E	D	D
Approach Vol, veh/h		1100			625			1118			722	
Approach Delay, s/veh		41.7			44.5			34.2			40.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	41.2	20.4	38.4	28.3	30.9	11.8	47.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Max Q Clear Time (g_c+I1), s	12.1	25.3	14.4	22.4	21.9	15.4	6.8	22.0
Green Ext Time (p_c), s	0.4	8.0	0.5	10.5	0.9	9.3	0.2	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	1380	859	25	34	285
Future Volume (vph)	471	1380	859	25	34	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3424		1770	1583
Flt Permitted	0.14	1.00	1.00		0.95	1.00
Satd. Flow (perm)	260	3438	3424		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	496	1453	904	26	36	300
RTOR Reduction (vph)	0	0	2	0	0	228
Lane Group Flow (vph)	496	1453	928	0	36	72
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	52.3	56.9	30.5		20.5	20.5
Effective Green, g (s)	53.5	57.5	31.1		20.7	20.7
Actuated g/C Ratio	0.62	0.67	0.36		0.24	0.24
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	540	2293	1235		425	380
v/s Ratio Prot	c0.24	0.42	0.27		0.02	
v/s Ratio Perm	c0.33					c0.05
v/c Ratio	0.92	0.63	0.75		0.08	0.19
Uniform Delay, d1	21.4	8.3	24.2		25.4	26.1
Progression Factor	0.86	0.56	1.00		1.00	1.00
Incremental Delay, d2	16.8	0.5	2.6		0.0	0.1
Delay (s)	35.2	5.1	26.8		25.4	26.2
Level of Service	D	A	C		C	C
Approach Delay (s)		12.7	26.8		26.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	12.2
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	300	10	650	308	510	22	488	1000	571	463	36
Future Volume (veh/h)	42	300	10	650	308	510	22	488	1000	571	463	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	43	309	8	670	318	0	23	503	838	589	477	35
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	81	589	15	758	1209	541	69	958	1364	697	1453	106
Arrive On Green	0.05	0.17	0.16	0.23	0.35	0.00	0.04	0.28	0.28	0.21	0.45	0.43
Sat Flow, veh/h	1774	3525	91	3343	3438	1538	1723	3438	2692	3343	3249	238
Grp Volume(v), veh/h	43	155	162	670	318	0	23	503	838	589	252	260
Grp Sat Flow(s),veh/h/ln	1774	1770	1847	1672	1719	1538	1723	1719	1346	1672	1719	1768
Q Serve(g_s), s	3.3	11.1	11.1	26.9	9.2	0.0	1.8	17.1	31.0	23.5	13.1	13.3
Cycle Q Clear(g_c), s	3.3	11.1	11.1	26.9	9.2	0.0	1.8	17.1	31.0	23.5	13.1	13.3
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	81	296	308	758	1209	541	69	958	1364	697	769	791
V/C Ratio(X)	0.53	0.52	0.53	0.88	0.26	0.00	0.33	0.53	0.61	0.84	0.33	0.33
Avail Cap(c_a), veh/h	390	683	713	772	1339	599	311	1042	1430	748	769	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	52.7	52.8	51.8	32.1	0.0	64.8	42.3	24.6	52.7	24.8	24.9
Incr Delay (d2), s/veh	2.0	3.1	3.0	12.5	0.2	0.0	1.1	0.4	0.7	9.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.7	5.9	13.7	4.4	0.0	0.9	8.2	11.6	11.8	6.3	6.5
LnGrp Delay(d),s/veh	66.6	55.8	55.7	64.3	32.4	0.0	65.8	42.7	25.4	62.2	25.1	25.2
LnGrp LOS	E	E	E	E	C		E	D	C	E	C	C
Approach Vol, veh/h		360			988			1364			1101	
Approach Delay, s/veh		57.0			54.0			32.4			45.0	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.4	27.7	9.5	66.0	10.4	52.7	32.9	42.6
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	* 52	23.0	46.0	29.0	52.0	29.0	40.0
Max Q Clear Time (g_c+I1), s	28.9	13.1	3.8	15.3	5.3	11.2	25.5	33.0
Green Ext Time (p_c), s	0.6	8.5	0.0	12.9	0.0	8.6	1.5	3.6

Intersection Summary			
HCM 2010 Ctrl Delay			44.0
HCM 2010 LOS			D
Notes			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	19	258	28	369	33	1568	424	325	939	26
Future Volume (veh/h)	0	0	19	258	28	369	33	1568	424	325	939	26
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				293	0	65	35	1651	0	342	988	26
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				547	0	240	353	1584	673	398	2519	66
Arrive On Green				0.15	0.00	0.15	0.43	0.43	0.00	0.22	0.71	0.71
Sat Flow, veh/h				3548	0	1556	553	3725	1583	1774	3523	93
Grp Volume(v), veh/h				293	0	65	35	1651	0	342	496	518
Grp Sat Flow(s),veh/h/ln				1774	0	1556	553	1863	1583	1774	1770	1846
Q Serve(g_s), s				4.7	0.0	2.3	2.4	26.0	0.0	11.3	6.8	6.8
Cycle Q Clear(g_c), s				4.7	0.0	2.3	2.4	26.0	0.0	11.3	6.8	6.8
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h				547	0	240	353	1584	673	398	1265	1320
V/C Ratio(X)				0.54	0.00	0.27	0.10	1.04	0.00	0.86	0.39	0.39
Avail Cap(c_a), veh/h				2088	0	916	353	1584	673	464	1265	1320
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				23.8	0.0	22.8	10.8	17.6	0.0	22.8	3.5	3.5
Incr Delay (d2), s/veh				0.3	0.0	0.2	0.0	34.6	0.0	14.3	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	1.0	0.4	20.8	0.0	7.1	3.2	3.3
LnGrp Delay(d),s/veh				24.1	0.0	23.1	10.8	52.2	0.0	37.1	3.5	3.5
LnGrp LOS				C		C	B	F		D	A	A
Approach Vol, veh/h					358			1686			1356	
Approach Delay, s/veh					23.9			51.3			12.0	
Approach LOS					C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	17.7	30.0				47.7		13.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	26.0				25.0		36.0
Max Q Clear Time (g_c+I1), s	13.3	28.0				8.8		6.7
Green Ext Time (p_c), s	0.4	0.0				11.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	961	0	0	986	567	660
Future Volume (vph)	961	0	0	986	567	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1092	0	0	1120	644	750
RTOR Reduction (vph)	0	0	0	35	0	376
Lane Group Flow (vph)	1092	0	0	1085	644	374
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	19.3			27.2	27.2	27.2
Effective Green, g (s)	20.3			28.2	28.2	28.2
Actuated g/C Ratio	0.36			0.50	0.50	0.50
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1792			1391	1713	1391
v/s Ratio Prot	c0.22			c0.39	0.19	0.13
v/s Ratio Perm						
v/c Ratio	0.61			0.78	0.38	0.27
Uniform Delay, d1	14.8			11.6	8.7	8.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.6			2.9	0.1	0.1
Delay (s)	15.4			14.5	8.9	8.3
Level of Service	B			B	A	A
Approach Delay (s)		15.4	14.5		8.6	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	592	5	57	656	262	34	301	214	227	215	470
Future Volume (veh/h)	449	592	5	57	656	262	34	301	214	227	215	470
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	483	637	5	61	705	0	37	324	162	244	231	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	561	1650	13	85	1185	530	66	481	236	296	612	0
Arrive On Green	0.16	0.46	0.45	0.05	0.34	0.00	0.04	0.21	0.20	0.17	0.34	0.00
Sat Flow, veh/h	3442	3599	28	1723	3438	1538	1774	2304	1128	1723	1810	0
Grp Volume(v), veh/h	483	313	329	61	705	0	37	247	239	244	231	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1858	1723	1719	1538	1774	1770	1662	1723	1810	0
Q Serve(g_s), s	19.6	16.7	16.7	5.0	24.2	0.0	2.9	18.4	19.0	19.6	13.9	0.0
Cycle Q Clear(g_c), s	19.6	16.7	16.7	5.0	24.2	0.0	2.9	18.4	19.0	19.6	13.9	0.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.68	1.00		0.00
Lane Grp Cap(c), veh/h	561	811	851	85	1185	530	66	370	347	296	612	0
V/C Ratio(X)	0.86	0.39	0.39	0.72	0.59	0.00	0.56	0.67	0.69	0.83	0.38	0.00
Avail Cap(c_a), veh/h	997	1008	1058	249	1460	653	266	753	707	379	896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.3	25.5	25.5	67.1	38.7	0.0	67.8	52.1	52.6	57.3	35.9	0.0
Incr Delay (d2), s/veh	1.5	1.1	1.0	4.1	1.7	0.0	2.8	7.4	8.5	8.9	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	8.4	8.8	2.5	11.7	0.0	1.5	9.8	9.6	10.1	7.2	0.0
LnGrp Delay(d),s/veh	59.9	26.6	26.6	71.2	40.4	0.0	70.6	59.5	61.1	66.1	37.3	0.0
LnGrp LOS	E	C	C	E	D		E	E	E	E	D	
Approach Vol, veh/h		1125			766			523			475	
Approach Delay, s/veh		40.9			42.9			61.0			52.1	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	69.6	9.3	53.2	27.4	53.4	28.6	33.9
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 23	80.8	20.0	* 70	40.0	60.0	* 30	60.0
Max Q Clear Time (g_c+I1), s	7.0	18.7	4.9	15.9	21.6	26.2	21.6	21.0
Green Ext Time (p_c), s	0.0	32.2	0.0	2.5	0.3	22.4	1.5	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	854	0	0	716	198	133	1165	66	0	0	0
Future Volume (veh/h)	396	854	0	0	716	198	133	1165	66	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	408	880	0	0	738	185	137	1201	36			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	492	1899	0	0	1007	252	704	1404	611			
Arrive On Green	0.29	1.00	0.00	0.00	0.36	0.35	0.40	0.40	0.40			
Sat Flow, veh/h	3442	3632	0	0	2889	701	1774	3539	1540			
Grp Volume(v), veh/h	408	880	0	0	467	456	137	1201	36			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1727	1774	1770	1540			
Q Serve(g_s), s	13.3	0.0	0.0	0.0	27.5	27.6	6.1	37.2	1.7			
Cycle Q Clear(g_c), s	13.3	0.0	0.0	0.0	27.5	27.6	6.1	37.2	1.7			
Prop In Lane	1.00		0.00	0.00		0.41	1.00		1.00			
Lane Grp Cap(c), veh/h	492	1899	0	0	638	622	704	1404	611			
V/C Ratio(X)	0.83	0.46	0.00	0.00	0.73	0.73	0.19	0.86	0.06			
Avail Cap(c_a), veh/h	924	1899	0	0	638	622	786	1569	683			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.43	0.43	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	41.5	0.0	0.0	0.0	33.4	33.5	23.7	33.0	22.4			
Incr Delay (d2), s/veh	2.0	0.4	0.0	0.0	7.3	7.5	0.2	4.6	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.4	0.1	0.0	0.0	14.7	14.5	3.0	19.1	0.7			
LnGrp Delay(d),s/veh	43.4	0.4	0.0	0.0	40.7	41.0	23.8	37.7	22.4			
LnGrp LOS	D	A			D	D	C	D	C			
Approach Vol, veh/h		1288			923			1374				
Approach Delay, s/veh		14.0			40.8			35.9				
Approach LOS		B			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		68.4			21.2	47.2		51.6
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		57.9			* 32	21.7		53.0
Max Q Clear Time (g_c+I1), s		2.0			15.3	29.6		39.2
Green Ext Time (p_c), s		23.2			1.6	0.0		8.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1068	24	270	566	0	0	0	0	134	1195	341
Future Volume (veh/h)	0	1068	24	270	566	0	0	0	0	134	1195	341
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1124	0	284	596	0				141	1258	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1374	0	180	1852	0				143	1339	649
Arrive On Green	0.00	0.39	0.00	0.20	1.00	0.00				0.41	0.41	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				348	3267	1583
Grp Volume(v), veh/h	0	1124	0	284	596	0				748	651	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1845	1770	1583
Q Serve(g_s), s	0.0	34.2	0.0	12.2	0.0	0.0				48.2	41.2	0.0
Cycle Q Clear(g_c), s	0.0	34.2	0.0	12.2	0.0	0.0				48.2	41.2	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.19		1.00
Lane Grp Cap(c), veh/h	0	1374	0	180	1852	0				757	726	649
V/C Ratio(X)	0.00	0.82	0.00	1.57	0.32	0.00				0.99	0.90	0.00
Avail Cap(c_a), veh/h	0	1374	0	180	1852	0				757	726	649
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.54	0.54	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	32.9	0.0	47.8	0.0	0.0				35.1	33.1	0.0
Incr Delay (d2), s/veh	0.0	5.5	0.0	272.5	0.2	0.0				29.7	14.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.8	0.0	19.6	0.1	0.0				30.8	22.9	0.0
LnGrp Delay(d),s/veh	0.0	38.4	0.0	320.3	0.2	0.0				64.8	47.2	0.0
LnGrp LOS		D		F	A					E	D	
Approach Vol, veh/h		1124			880						1399	
Approach Delay, s/veh		38.4			103.5						56.6	
Approach LOS		D			F						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.2	50.6		53.2		66.8		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 12	45.7		* 49		61.9		
Max Q Clear Time (g_c+I1), s	14.2	36.2		50.2		2.0		
Green Ext Time (p_c), s	0.0	7.4		0.0		23.4		

Intersection Summary		
HCM 2010 Ctrl Delay		62.7
HCM 2010 LOS		E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	365	195	574	417	87	240	706	486	117	720	159
Future Volume (veh/h)	325	365	195	574	417	87	240	706	486	117	720	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	353	397	48	624	453	80	261	767	217	127	783	158
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	437	591	264	678	712	125	295	1334	596	169	895	181
Arrive On Green	0.13	0.17	0.17	0.20	0.24	0.23	0.17	0.38	0.38	0.10	0.31	0.29
Sat Flow, veh/h	3343	3438	1538	3343	2918	512	1774	3539	1582	1774	2925	590
Grp Volume(v), veh/h	353	397	48	624	266	267	261	767	217	127	474	467
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1711	1774	1770	1582	1774	1770	1746
Q Serve(g_s), s	10.7	11.3	2.8	19.1	14.4	14.7	15.0	18.0	10.4	7.3	26.5	26.5
Cycle Q Clear(g_c), s	10.7	11.3	2.8	19.1	14.4	14.7	15.0	18.0	10.4	7.3	26.5	26.5
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	437	591	264	678	420	418	295	1334	596	169	541	534
V/C Ratio(X)	0.81	0.67	0.18	0.92	0.63	0.64	0.88	0.58	0.36	0.75	0.88	0.88
Avail Cap(c_a), veh/h	806	1063	475	678	466	463	360	1365	610	224	547	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	40.5	37.0	40.8	35.3	35.6	42.6	25.9	23.5	46.1	34.4	34.6
Incr Delay (d2), s/veh	2.7	0.5	0.1	17.5	1.5	1.7	17.4	0.6	0.4	6.2	14.6	14.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	5.4	1.2	10.5	7.0	7.1	8.8	8.8	4.6	3.9	15.1	14.9
LnGrp Delay(d),s/veh	46.8	41.0	37.1	58.3	36.8	37.3	60.0	26.5	23.9	52.3	49.0	49.4
LnGrp LOS	D	D	D	E	D	D	E	C	C	D	D	D
Approach Vol, veh/h		798			1157			1245			1068	
Approach Delay, s/veh		43.4			48.5			33.0			49.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	43.4	25.2	22.0	21.4	36.0	17.7	29.5
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 13	39.0	* 21	31.0	* 21	31.0	* 25	27.0
Max Q Clear Time (g_c+I1), s	9.3	20.0	21.1	13.3	17.0	28.5	12.7	16.7
Green Ext Time (p_c), s	0.0	11.8	0.0	3.2	0.2	2.1	0.7	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	35	136	68	29	8	147	524	181	12	710	19
Future Volume (veh/h)	6	35	136	68	29	8	147	524	181	12	710	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	38	145	74	32	9	156	557	197	13	755	20
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	70	243	325	121	24	335	1066	374	109	2018	53
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	21	359	1253	856	622	126	343	1803	632	16	3411	89
Grp Volume(v), veh/h	189	0	0	115	0	0	416	0	494	412	0	376
Grp Sat Flow(s),veh/h/ln	1634	0	0	1604	0	0	1193	0	1584	1837	0	1679
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	6.9	0.0	0.0	4.4
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.0	0.0	0.0	7.2	0.0	6.9	4.3	0.0	4.4
Prop In Lane	0.03		0.77	0.64		0.08	0.37		0.40	0.03		0.05
Lane Grp Cap(c), veh/h	417	0	0	470	0	0	838	0	937	1186	0	994
V/C Ratio(X)	0.45	0.00	0.00	0.24	0.00	0.00	0.50	0.00	0.53	0.35	0.00	0.38
Avail Cap(c_a), veh/h	1014	0	0	969	0	0	1263	0	1526	1845	0	1618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	12.9	0.0	0.0	4.3	0.0	4.5	4.0	0.0	4.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.5	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.1	0.0	0.0	2.5	0.0	3.0	2.2	0.0	2.0
LnGrp Delay(d),s/veh	14.5	0.0	0.0	13.2	0.0	0.0	4.7	0.0	5.0	4.2	0.0	4.3
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		189			115			910			788	
Approach Delay, s/veh		14.5			13.2			4.9			4.2	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.1		11.3		26.1		11.3
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		36.0		21.0		36.0		21.0
Max Q Clear Time (g_c+I1), s		9.2		5.9		6.4		4.0
Green Ext Time (p_c), s		12.9		1.7		13.6		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	1273	440	56	909	173	562	298	97	302	376	326
Future Volume (veh/h)	520	1273	440	56	909	173	562	298	97	302	376	326
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	536	1312	193	58	937	157	579	307	0	311	388	133
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	656	1417	633	86	1118	187	695	791	354	346	753	328
Arrive On Green	0.20	0.41	0.41	0.05	0.26	0.25	0.20	0.22	0.00	0.20	0.21	0.21
Sat Flow, veh/h	3343	3438	1536	1723	4263	712	3442	3539	1583	1774	3539	1543
Grp Volume(v), veh/h	536	1312	193	58	723	371	579	307	0	311	388	133
Grp Sat Flow(s),veh/h/ln	1672	1719	1536	1723	1647	1682	1721	1770	1583	1774	1770	1543
Q Serve(g_s), s	20.6	48.6	5.8	4.4	27.8	28.0	21.6	9.9	0.0	22.9	13.0	10.0
Cycle Q Clear(g_c), s	20.6	48.6	5.8	4.4	27.8	28.0	21.6	9.9	0.0	22.9	13.0	10.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	656	1417	633	86	864	441	695	791	354	346	753	328
V/C Ratio(X)	0.82	0.93	0.30	0.67	0.84	0.84	0.83	0.39	0.00	0.90	0.52	0.41
Avail Cap(c_a), veh/h	656	1450	648	90	946	483	695	791	354	371	753	328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.32	0.32	0.32	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	37.4	6.9	62.6	46.7	47.1	51.3	44.2	0.0	52.6	46.6	45.4
Incr Delay (d2), s/veh	2.7	3.8	0.1	17.1	6.2	11.8	8.5	1.4	0.0	22.9	2.5	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	23.7	2.4	2.5	13.4	14.4	11.1	5.0	0.0	13.4	6.6	4.6
LnGrp Delay(d),s/veh	54.2	41.3	7.0	79.7	53.0	58.9	59.8	45.7	0.0	75.6	49.2	49.1
LnGrp LOS	D	D	A	E	D	E	E	D		E	D	D
Approach Vol, veh/h		2041			1152			886			832	
Approach Delay, s/veh		41.4			56.2			54.9			59.0	
Approach LOS		D			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.1	33.9	10.7	59.2	31.6	32.5	30.8	39.1				
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.5	* 5.5	5.5	* 5.5				
Max Green Setting (Gmax), s	27.0	25.0	6.0	55.0	25.0	* 27	24.0	* 37				
Max Q Clear Time (g_c+I1), s	24.9	11.9	6.4	50.6	23.6	15.0	22.6	30.0				
Green Ext Time (p_c), s	0.2	3.5	0.0	3.1	0.4	2.3	1.2	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			50.3									
HCM 2010 LOS			D									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1400	87	257	856	231	174	492	239	417	365	205
Future Volume (veh/h)	222	1400	87	257	856	231	174	492	239	417	365	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	1489	90	273	911	105	185	523	45	444	388	36
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.89
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	506	1542	93	301	2010	626	552	572	253	559	560	247
Arrive On Green	0.15	0.47	0.45	0.09	0.41	0.41	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	3343	3293	198	3343	4940	1538	3442	3539	1569	3442	3539	1562
Grp Volume(v), veh/h	236	774	805	273	911	105	185	523	45	444	388	36
Grp Sat Flow(s),veh/h/ln	1672	1719	1772	1672	1647	1538	1721	1770	1569	1721	1770	1562
Q Serve(g_s), s	8.4	56.6	57.5	10.5	17.4	5.6	6.2	18.9	2.5	16.1	13.5	2.6
Cycle Q Clear(g_c), s	8.4	56.6	57.5	10.5	17.4	5.6	6.2	18.9	2.5	16.1	13.5	2.6
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	506	805	830	301	2010	626	552	572	253	559	560	247
V/C Ratio(X)	0.47	0.96	0.97	0.91	0.45	0.17	0.34	0.91	0.18	0.79	0.69	0.15
Avail Cap(c_a), veh/h	506	805	830	301	2010	626	552	572	253	665	977	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	33.4	33.8	58.6	28.0	24.5	48.4	53.6	29.2	52.4	51.7	47.1
Incr Delay (d2), s/veh	0.2	23.6	24.6	28.7	0.7	0.6	0.1	21.6	1.5	4.6	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	32.2	33.6	6.1	8.1	2.5	3.0	10.9	1.2	8.0	6.6	1.1
LnGrp Delay(d),s/veh	50.6	57.1	58.4	87.4	28.8	25.1	48.6	75.2	30.7	57.0	52.3	47.2
LnGrp LOS	D	E	E	F	C	C	D	E	C	E	D	D
Approach Vol, veh/h		1815			1289			753			868	
Approach Delay, s/veh		56.8			40.9			66.0			54.5	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.7	56.2	25.1	25.0	15.0	64.9	25.5	24.6
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.8	* 6.8
Max Green Setting (Gmax), s	12.9	50.1	22.3	18.9	8.9	54.1	8.1	* 33
Max Q Clear Time (g_c+I1), s	10.4	19.4	18.1	20.9	12.5	59.5	8.2	15.5
Green Ext Time (p_c), s	1.2	2.2	0.2	0.0	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	189	95	248	143	76	60	780	303	166	858	195
Future Volume (veh/h)	207	189	95	248	143	76	60	780	303	166	858	195
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	218	199	17	240	180	68	63	821	266	175	903	94
Adj No. of Lanes	1	1	1	1	1	0	1	3	0	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	301	277	268	347	252	95	116	1282	413	208	1976	613
Arrive On Green	0.17	0.15	0.17	0.20	0.20	0.17	0.07	0.35	0.33	0.12	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1290	487	1723	3701	1191	1723	4940	1532
Grp Volume(v), veh/h	218	199	17	240	0	248	63	730	357	175	903	94
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1777	1723	1647	1599	1723	1647	1532
Q Serve(g_s), s	11.1	9.7	0.9	12.0	0.0	12.5	3.4	17.7	18.1	9.5	12.8	3.7
Cycle Q Clear(g_c), s	11.1	9.7	0.9	12.0	0.0	12.5	3.4	17.7	18.1	9.5	12.8	3.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	301	277	268	347	0	347	116	1141	554	208	1976	613
V/C Ratio(X)	0.72	0.72	0.06	0.69	0.00	0.71	0.54	0.64	0.64	0.84	0.46	0.15
Avail Cap(c_a), veh/h	428	410	382	689	0	690	289	1313	637	289	1976	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	38.7	33.2	35.7	0.0	36.1	43.0	26.2	26.9	41.0	21.0	18.3
Incr Delay (d2), s/veh	3.5	3.5	0.1	2.5	0.0	2.7	3.9	0.8	1.8	14.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.2	0.4	6.1	0.0	6.4	1.7	8.1	8.3	5.4	5.8	1.6
LnGrp Delay(d),s/veh	41.0	42.2	33.3	38.2	0.0	38.9	47.0	27.0	28.7	55.4	21.2	18.4
LnGrp LOS	D	D	C	D		D	D	C	C	E	C	B
Approach Vol, veh/h		434			488			1150			1172	
Approach Delay, s/veh		41.2			38.5			28.6			26.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	42.1		22.6	15.5	37.0		20.2
Change Period (Y+Rc), s	* 6	* 6		* 6	4.0	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	16.0	* 36		21.0
Max Q Clear Time (g_c+I1), s	5.4	14.8		14.5	11.5	20.1		13.1
Green Ext Time (p_c), s	0.1	13.5		2.1	0.2	10.9		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	709	119	153	521	175	143	1077	199	264	904	164
Future Volume (veh/h)	238	709	119	153	521	175	143	1077	199	264	904	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	243	723	110	156	532	150	146	1099	90	269	922	148
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	269	832	127	207	642	180	251	1186	529	487	1782	285
Arrive On Green	0.16	0.28	0.26	0.12	0.24	0.23	0.07	0.34	0.34	0.14	0.40	0.39
Sat Flow, veh/h	1723	2988	454	1723	2650	744	3442	3539	1579	3442	4413	706
Grp Volume(v), veh/h	243	416	417	156	344	338	146	1099	90	269	707	363
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1675	1721	1770	1579	1721	1695	1728
Q Serve(g_s), s	17.7	29.5	29.5	11.2	24.3	24.5	5.3	38.3	5.1	9.3	20.1	20.4
Cycle Q Clear(g_c), s	17.7	29.5	29.5	11.2	24.3	24.5	5.3	38.3	5.1	9.3	20.1	20.4
Prop In Lane	1.00		0.26	1.00		0.44	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	269	479	480	207	416	406	251	1186	529	487	1369	698
V/C Ratio(X)	0.90	0.87	0.87	0.75	0.83	0.83	0.58	0.93	0.17	0.55	0.52	0.52
Avail Cap(c_a), veh/h	269	569	571	211	512	498	272	1186	529	487	1369	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	44.0	44.2	54.5	46.0	46.5	57.5	41.0	30.0	51.2	28.8	29.2
Incr Delay (d2), s/veh	30.1	10.6	10.7	12.4	7.5	8.1	1.5	13.6	0.7	0.8	1.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	15.4	15.5	6.0	12.4	12.3	2.5	21.0	2.4	4.5	9.7	10.3
LnGrp Delay(d),s/veh	83.1	54.6	54.9	66.9	53.5	54.6	58.9	54.6	30.7	52.0	30.2	31.9
LnGrp LOS	F	D	D	E	D	D	E	D	C	D	C	C
Approach Vol, veh/h		1076			838			1335			1339	
Approach Delay, s/veh		61.1			56.4			53.5			35.0	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	46.9	19.4	39.6	13.3	55.7	24.0	35.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	40.8	13.6	40.3	8.0	41.7	17.9	36.0
Max Q Clear Time (g_c+I1), s	11.3	40.3	13.2	31.5	7.3	22.4	19.7	26.5
Green Ext Time (p_c), s	0.0	0.2	0.1	1.4	0.0	2.7	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	50.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	862	72	614	647	456	88	1279	769	413	1073	63
Future Volume (veh/h)	100	862	72	614	647	456	88	1279	769	413	1073	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	105	907	0	646	681	0	93	1346	745	435	1129	61
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	148	868	388	746	1354	606	112	1404	794	407	1635	88
Arrive On Green	0.09	0.25	0.00	0.22	0.39	0.00	0.06	0.28	0.28	0.12	0.33	0.31
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1573	3442	4935	266
Grp Volume(v), veh/h	105	907	0	646	681	0	93	1346	745	435	775	415
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1573	1721	1695	1811
Q Serve(g_s), s	7.5	32.0	0.0	23.6	19.0	0.0	6.6	33.0	35.0	15.0	25.1	25.2
Cycle Q Clear(g_c), s	7.5	32.0	0.0	23.6	19.0	0.0	6.6	33.0	35.0	15.0	25.1	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	148	868	388	746	1354	606	112	1404	794	407	1123	600
V/C Ratio(X)	0.71	1.05	0.00	0.87	0.50	0.00	0.83	0.96	0.94	1.07	0.69	0.69
Avail Cap(c_a), veh/h	285	868	388	844	1354	606	112	1404	794	407	1123	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	47.4	0.0	47.4	29.1	0.0	58.7	45.2	29.7	55.9	36.8	36.9
Incr Delay (d2), s/veh	2.4	43.0	0.0	7.9	0.2	0.0	36.7	15.2	18.6	63.9	1.7	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	20.2	0.0	11.7	9.0	0.0	4.4	17.4	28.5	10.7	12.0	13.1
LnGrp Delay(d),s/veh	58.8	90.4	0.0	55.3	29.3	0.0	95.4	60.4	48.3	119.8	38.4	40.1
LnGrp LOS	E	F		E	C		F	E	D	F	D	D
Approach Vol, veh/h		1012			1327			2184			1625	
Approach Delay, s/veh		87.1			41.9			57.8			60.7	
Approach LOS		F			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	39.0	32.3	36.5	12.0	46.0	14.9	53.9
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	13.0	32.5	30.0	* 30	6.0	39.5	19.5	40.5
Max Q Clear Time (g_c+I1), s	17.0	37.0	25.6	34.0	8.6	27.2	9.5	21.0
Green Ext Time (p_c), s	0.0	0.0	0.7	0.0	0.0	10.5	0.1	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	59.9
HCM 2010 LOS	E

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	554	389	94	494	496	22
Future Volume (veh/h)	554	389	94	494	496	22
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1863	1863
Adj Flow Rate, veh/h	583	167	99	520	522	8
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	2	2
Cap, veh/h	766	645	125	1005	576	514
Arrive On Green	0.42	0.42	0.07	0.56	0.32	0.32
Sat Flow, veh/h	1810	1524	1723	1810	1774	1583
Grp Volume(v), veh/h	583	167	99	520	522	8
Grp Sat Flow(s),veh/h/ln	1810	1524	1723	1810	1774	1583
Q Serve(g_s), s	18.3	4.8	3.8	12.0	18.8	0.2
Cycle Q Clear(g_c), s	18.3	4.8	3.8	12.0	18.8	0.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	766	645	125	1005	576	514
V/C Ratio(X)	0.76	0.26	0.79	0.52	0.91	0.02
Avail Cap(c_a), veh/h	1244	1048	155	1515	690	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	12.5	30.5	9.3	21.6	15.3
Incr Delay (d2), s/veh	1.6	0.2	19.5	0.4	14.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	2.0	2.5	6.0	11.4	0.2
LnGrp Delay(d),s/veh	18.0	12.7	50.0	9.7	35.6	15.3
LnGrp LOS	B	B	D	A	D	B
Approach Vol, veh/h	750			619	530	
Approach Delay, s/veh	16.8			16.1	35.3	
Approach LOS	B			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		41.2		25.7	8.9	32.3		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		56.0		26.0	6.0	46.0		
Max Q Clear Time (g_c+I1), s		14.0		20.8	5.8	20.3		
Green Ext Time (p_c), s		8.9		0.9	0.0	8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	13	68	5	15	12	169	1863	8	10	1294	415
Future Volume (veh/h)	328	13	68	5	15	12	169	1863	8	10	1294	415
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.99	0.99		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	367	0	21	5	16	4	184	2025	9	11	1407	0
Adj No. of Lanes	2	0	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	619	0	276	77	219	49	177	2462	11	59	2175	0
Arrive On Green	0.18	0.00	0.18	0.18	0.18	0.16	0.10	0.68	0.66	0.03	0.61	0.00
Sat Flow, veh/h	2714	0	1562	215	1240	277	1774	3613	16	1774	3632	0
Grp Volume(v), veh/h	367	0	21	25	0	0	184	991	1043	11	1407	0
Grp Sat Flow(s),veh/h/ln	1357	0	1562	1731	0	0	1774	1770	1860	1774	1770	0
Q Serve(g_s), s	12.5	0.0	1.2	0.0	0.0	0.0	11.0	44.7	44.8	0.7	28.0	0.0
Cycle Q Clear(g_c), s	13.8	0.0	1.2	1.3	0.0	0.0	11.0	44.7	44.8	0.7	28.0	0.0
Prop In Lane	1.00		1.00	0.20		0.16	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	619	0	276	345	0	0	177	1206	1267	59	2175	0
V/C Ratio(X)	0.59	0.00	0.08	0.07	0.00	0.00	1.04	0.82	0.82	0.19	0.65	0.00
Avail Cap(c_a), veh/h	1150	0	582	675	0	0	177	1382	1453	177	2764	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.8	0.0	37.8	38.0	0.0	0.0	49.6	12.7	12.7	51.8	13.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.0	0.0	78.0	3.2	3.1	0.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.5	0.6	0.0	0.0	9.2	22.5	23.7	0.3	13.5	0.0
LnGrp Delay(d),s/veh	43.2	0.0	37.9	38.0	0.0	0.0	127.7	15.9	15.8	52.4	13.7	0.0
LnGrp LOS	D		D	D			F	B	B	D	B	
Approach Vol, veh/h		388			25			2218			1418	
Approach Delay, s/veh		42.9			38.0			25.1			14.0	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	79.0		23.5	15.0	71.7		23.5
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	83.5		39.0	8.5	83.5		39.0
Max Q Clear Time (g_c+I1), s	2.7	46.8		15.8	13.0	30.0		3.3
Green Ext Time (p_c), s	0.0	25.7		0.8	0.0	32.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	502	196	292	113	50	456
Future Volume (veh/h)	502	196	292	113	50	456
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1810	1810
Adj Flow Rate, veh/h	558	218	324	108	56	83
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	781	1365	980	327	146	130
Arrive On Green	0.73	0.73	0.73	0.73	0.08	0.08
Sat Flow, veh/h	952	1863	1338	446	1723	1538
Grp Volume(v), veh/h	558	218	0	432	56	83
Grp Sat Flow(s),veh/h/ln	952	1863	0	1784	1723	1538
Q Serve(g_s), s	21.9	1.6	0.0	3.7	1.3	2.3
Cycle Q Clear(g_c), s	25.6	1.6	0.0	3.7	1.3	2.3
Prop In Lane	1.00			0.25	1.00	1.00
Lane Grp Cap(c), veh/h	781	1365	0	1307	146	130
V/C Ratio(X)	0.71	0.16	0.00	0.33	0.38	0.64
Avail Cap(c_a), veh/h	866	1531	0	1466	630	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	1.8	0.0	2.1	19.0	19.4
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.1	1.7	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.8	0.0	1.9	0.7	1.2
LnGrp Delay(d),s/veh	9.1	1.8	0.0	2.2	20.6	24.5
LnGrp LOS	A	A		A	C	C
Approach Vol, veh/h		776	432		139	
Approach Delay, s/veh		7.0	2.2		22.9	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				36.1		7.7		36.1
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				36.0		16.0		36.0
Max Q Clear Time (g_c+I1), s				27.6		4.3		5.7
Green Ext Time (p_c), s				4.5		0.3		8.7

Intersection Summary		
HCM 2010 Ctrl Delay		7.1
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	290	64	239	232	17	144	817	624	31	428	261
Future Volume (veh/h)	300	290	64	239	232	17	144	817	624	31	428	261
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	312	302	51	249	242	3	150	851	286	32	446	114
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	369	582	97	309	559	250	202	1361	597	85	1127	500
Arrive On Green	0.21	0.19	0.17	0.17	0.16	0.16	0.12	0.40	0.40	0.05	0.33	0.33
Sat Flow, veh/h	1774	3030	505	1774	3539	1583	1723	3438	1507	1723	3438	1524
Grp Volume(v), veh/h	312	175	178	249	242	3	150	851	286	32	446	114
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1583	1723	1719	1507	1723	1719	1524
Q Serve(g_s), s	14.3	7.5	7.7	11.4	5.2	0.1	7.1	16.9	12.0	1.5	8.5	4.6
Cycle Q Clear(g_c), s	14.3	7.5	7.7	11.4	5.2	0.1	7.1	16.9	12.0	1.5	8.5	4.6
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	340	339	309	559	250	202	1361	597	85	1127	500
V/C Ratio(X)	0.84	0.51	0.53	0.81	0.43	0.01	0.74	0.63	0.48	0.38	0.40	0.23
Avail Cap(c_a), veh/h	439	803	801	439	1605	718	325	1681	737	325	1681	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	30.7	31.0	33.7	32.3	30.1	36.2	20.6	19.1	39.1	22.0	20.7
Incr Delay (d2), s/veh	12.3	1.2	1.3	7.2	0.5	0.0	2.0	0.5	0.6	1.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	3.8	3.9	6.2	2.6	0.1	3.5	8.0	5.0	0.8	4.1	2.0
LnGrp Delay(d),s/veh	44.6	31.9	32.3	40.8	32.8	30.2	38.2	21.1	19.7	40.1	22.5	21.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		665			494			1287			592	
Approach Delay, s/veh		38.0			36.8			22.8			23.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	37.6	18.8	20.3	14.0	31.8	21.7	17.4
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	15.0	40.0	20.0	37.0	15.0	40.0	20.0	37.0
Max Q Clear Time (g_c+I1), s	3.5	18.9	13.4	9.7	9.1	10.5	16.3	7.2
Green Ext Time (p_c), s	0.0	12.9	0.4	3.7	0.1	15.8	0.3	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1068	24	270	566	0	0	0	0	134	1195	341
Future Volume (veh/h)	0	1068	24	270	566	0	0	0	0	134	1195	341
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1124	0	284	596	0				141	1258	0
Adj No. of Lanes	0	2	0	1	2	0				1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1250	0	296	1958	0				674	1416	602
Arrive On Green	0.00	0.35	0.00	0.33	1.00	0.00				0.38	0.38	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				1774	3725	1583
Grp Volume(v), veh/h	0	1124	0	284	596	0				141	1258	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1774	1863	1583
Q Serve(g_s), s	0.0	36.1	0.0	18.8	0.0	0.0				6.4	37.9	0.0
Cycle Q Clear(g_c), s	0.0	36.1	0.0	18.8	0.0	0.0				6.4	37.9	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1250	0	296	1958	0				674	1416	602
V/C Ratio(X)	0.00	0.90	0.00	0.96	0.30	0.00				0.21	0.89	0.00
Avail Cap(c_a), veh/h	0	1250	0	296	1958	0				710	1490	633
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.54	0.54	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	36.8	0.0	39.6	0.0	0.0				25.0	34.8	0.0
Incr Delay (d2), s/veh	0.0	10.4	0.0	28.6	0.2	0.0				0.2	6.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.5	0.0	11.5	0.1	0.0				3.2	20.7	0.0
LnGrp Delay(d),s/veh	0.0	47.2	0.0	68.3	0.2	0.0				25.2	41.7	0.0
LnGrp LOS		D		E	A					C	D	
Approach Vol, veh/h		1124			880						1399	
Approach Delay, s/veh		47.2			22.2						40.0	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	24.0	46.4		49.6		70.4		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 20	39.1		* 48		63.1		
Max Q Clear Time (g_c+I1), s	20.8	38.1		39.9		2.0		
Green Ext Time (p_c), s	0.0	0.9		5.5		23.5		

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	70	70	180	50	0	0	0	0	120	0	20
Future Vol, veh/h	10	70	70	180	50	0	0	0	0	120	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	76	76	196	54	0	0	0	0	130	0	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	54	0	0	76	0	0				544	544	54
Stage 1	-	-	-	-	-	-				446	446	-
Stage 2	-	-	-	-	-	-				98	98	-
Critical Hdwy	4.12	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1523	-	0				500	446	1013
Stage 1	-	-	-	-	-	0				645	574	-
Stage 2	-	-	-	-	-	0				926	814	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1551	-	-	1523	-	-				432	0	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-				432	0	-
Stage 1	-	-	-	-	-	-				562	0	-
Stage 2	-	-	-	-	-	-				919	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	6	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	1551	-	-	1523	-	432	1013
HCM Lane V/C Ratio	0.007	-	-	0.128	-	0.302	0.021
HCM Control Delay (s)	7.3	-	-	7.7	-	16.9	8.6
HCM Lane LOS	A	-	-	A	-	C	A
HCM 95th %tile Q(veh)	0	-	-	0.4	-	1.3	0.1

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	140	0	0	140	340	90	0	70	0	0	0
Future Vol, veh/h	50	140	0	0	140	340	90	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	152	0	0	152	370	98	0	76	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	152	0	-	-	-	0	413	413	152
Stage 1	-	-	-	-	-	-	261	261	-
Stage 2	-	-	-	-	-	-	152	152	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1429	-	0	0	-	-	595	529	894
Stage 1	-	-	0	0	-	-	783	692	-
Stage 2	-	-	0	0	-	-	876	772	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1429	-	-	-	-	-	573	0	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	573	0	-
Stage 1	-	-	-	-	-	-	753	0	-
Stage 2	-	-	-	-	-	-	876	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	573	894	1429	-	-	-
HCM Lane V/C Ratio	0.171	0.085	0.038	-	-	-
HCM Control Delay (s)	12.6	9.4	7.6	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.6	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	120	0	0	180	200	10	10	130	0	0	0
Future Vol, veh/h	10	120	0	0	180	200	10	10	130	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	130	0	0	196	217	11	11	141	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.2	9.6	9.2
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	130	10	60	60	180	200
LT Vol	10	0	10	0	0	0	0
Through Vol	10	0	0	60	60	180	0
RT Vol	0	130	0	0	0	0	200
Lane Flow Rate	22	141	11	65	65	196	217
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.037	0.202	0.019	0.105	0.073	0.287	0.276
Departure Headway (Hd)	6.109	5.158	6.278	5.774	4.026	5.282	4.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	583	691	567	617	880	677	780
Service Time	3.879	2.927	4.05	3.546	1.797	3.04	2.335
HCM Lane V/C Ratio	0.038	0.204	0.019	0.105	0.074	0.29	0.278
HCM Control Delay	9.1	9.2	9.2	9.2	7.1	10.2	9.1
HCM Lane LOS	A	A	A	A	A	B	A
HCM 95th-tile Q	0.1	0.8	0.1	0.4	0.2	1.2	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	210	0	0	0	300	50	0	0	100	80
Future Volume (veh/h)	40	0	210	0	0	0	300	50	0	0	100	80
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	43	0	24				326	54	0	0	109	19
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	69	0	62				424	1165	0	0	408	345
Arrive On Green	0.04	0.00	0.04				0.24	0.63	0.00	0.00	0.22	0.22
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1576
Grp Volume(v), veh/h	43	0	24				326	54	0	0	109	19
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1576
Q Serve(g_s), s	0.6	0.0	0.4				4.1	0.3	0.0	0.0	1.2	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.4				4.1	0.3	0.0	0.0	1.2	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	69	0	62				424	1165	0	0	408	345
V/C Ratio(X)	0.62	0.00	0.39				0.77	0.05	0.00	0.00	0.27	0.06
Avail Cap(c_a), veh/h	1784	0	1593				1502	4708	0	0	4708	3983
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	11.2				8.5	1.7	0.0	0.0	7.7	7.4
Incr Delay (d2), s/veh	3.3	0.0	1.5				1.1	0.0	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3				2.1	0.2	0.0	0.0	0.6	0.1
LnGrp Delay(d),s/veh	14.6	0.0	12.6				9.6	1.8	0.0	0.0	8.1	7.4
LnGrp LOS	B		B				A	A			A	A
Approach Vol, veh/h		67						380			128	
Approach Delay, s/veh		13.9						8.5			8.0	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.9		4.9	9.7	9.2		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.3		2.6	6.1	3.2		
Green Ext Time (p_c), s		1.5		0.0	0.1	1.5		

Intersection Summary			
HCM 2010 Ctrl Delay			9.0
HCM 2010 LOS			A

Notes

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	220	10	0	10	20	10	20	20	10	10	20	270
Future Vol, veh/h	220	10	0	10	20	10	20	20	10	10	20	270
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	239	11	0	11	22	11	22	22	11	11	22	293
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.4	8.5	9.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	96%	25%	3%
Vol Thru, %	40%	4%	50%	7%
Vol Right, %	20%	0%	25%	90%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	230	40	300
LT Vol	20	220	10	10
Through Vol	20	10	20	20
RT Vol	10	0	10	270
Lane Flow Rate	54	250	43	326
Geometry Grp	1	1	1	1
Degree of Util (X)	0.076	0.348	0.06	0.383
Departure Headway (Hd)	5.015	5.01	5.006	4.225
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	715	709	851
Service Time	3.074	3.07	3.082	2.26
HCM Lane V/C Ratio	0.076	0.35	0.061	0.383
HCM Control Delay	8.5	10.8	8.4	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	1.6	0.2	1.8

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	120	30	150	120	10	30	10	190	10	10	10
Future Vol, veh/h	10	120	30	150	120	10	30	10	190	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	130	33	163	130	11	33	11	207	11	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	163	0	0	641	635	147	739	647	136
Stage 1	-	-	-	-	-	-	168	168	-	462	462	-
Stage 2	-	-	-	-	-	-	473	467	-	277	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1416	-	-	388	396	900	333	390	913
Stage 1	-	-	-	-	-	-	834	759	-	580	565	-
Stage 2	-	-	-	-	-	-	572	562	-	729	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1416	-	-	336	344	900	225	339	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	344	-	225	339	-
Stage 1	-	-	-	-	-	-	827	753	-	575	494	-
Stage 2	-	-	-	-	-	-	484	492	-	549	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	4.2	13	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	698	1442	-	-	1416	-	-	494
HCM Lane V/C Ratio	0.358	0.008	-	-	0.115	-	-	0.044
HCM Control Delay (s)	13	7.5	0	-	7.9	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.6	0	-	-	0.4	-	-	0.1

Intersection						
Int Delay, s/veh	5.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	190	200	30	120	160
Future Vol, veh/h	30	190	200	30	120	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	207	217	33	130	174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	669	234	0	0	250	0
Stage 1	234	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	423	805	-	-	1316	-
Stage 1	805	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	377	805	-	-	1316	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	697	1316	-
HCM Lane V/C Ratio	-	-	0.343	0.099	-
HCM Control Delay (s)	-	-	12.8	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	90	210	170	200	220	220	90	160	140	70	100
Future Volume (veh/h)	30	90	210	170	200	220	220	90	160	140	70	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	33	98	53	185	217	74	239	98	34	152	76	18
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	614	275	441	711	318	597	629	209	409	652	292
Arrive On Green	0.08	0.17	0.17	0.13	0.20	0.20	0.17	0.24	0.22	0.12	0.18	0.18
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	2611	868	3442	3539	1583
Grp Volume(v), veh/h	33	98	53	185	217	74	239	65	67	152	76	18
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1710	1721	1770	1583
Q Serve(g_s), s	0.4	1.1	1.4	2.3	2.5	1.9	2.9	1.4	1.5	1.9	0.8	0.4
Cycle Q Clear(g_c), s	0.4	1.1	1.4	2.3	2.5	1.9	2.9	1.4	1.5	1.9	0.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	288	614	275	441	711	318	597	426	412	409	652	292
V/C Ratio(X)	0.11	0.16	0.19	0.42	0.31	0.23	0.40	0.15	0.16	0.37	0.12	0.06
Avail Cap(c_a), veh/h	1165	3895	1742	1165	3895	1742	1384	1760	1700	1384	3520	1575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	16.6	16.7	19.0	16.1	15.8	17.3	14.1	14.3	19.2	16.1	15.9
Incr Delay (d2), s/veh	0.1	0.1	0.4	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.6	1.1	1.2	0.8	1.4	0.7	0.7	0.9	0.4	0.2
LnGrp Delay(d),s/veh	20.1	16.7	17.1	19.2	16.2	16.1	17.5	14.4	14.6	19.4	16.2	16.0
LnGrp LOS	C	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		184			476			371			246	
Approach Delay, s/veh		17.4			17.4			16.4			18.2	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	12.2	12.2	12.8	8.0	14.3	9.6	15.4				
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8				
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46				
Max Q Clear Time (g_c+I1), s	4.3	3.4	4.9	2.8	2.4	4.5	3.9	3.5				
Green Ext Time (p_c), s	0.1	2.0	0.1	2.1	0.0	2.0	0.1	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.3									
HCM 2010 LOS			B									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	430	100	30	500	200	80	140	60	110	120	30
Future Volume (veh/h)	90	430	100	30	500	200	80	140	60	110	120	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	0.96		0.94	0.96		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	98	467	50	33	543	214	87	152	22	120	130	29
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1475	639	35	925	363	245	397	561	248	250	49
Arrive On Green	0.06	0.42	0.42	0.02	0.37	0.36	0.38	0.38	0.38	0.39	0.39	0.37
Sat Flow, veh/h	1774	3539	1534	1774	2482	975	455	1048	1483	445	647	127
Grp Volume(v), veh/h	98	467	50	33	387	370	239	0	22	279	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1534	1774	1770	1688	1502	0	1483	1219	0	0
Q Serve(g_s), s	3.7	6.0	1.3	1.3	11.9	12.0	0.0	0.0	0.6	7.6	0.0	0.0
Cycle Q Clear(g_c), s	3.7	6.0	1.3	1.3	11.9	12.0	7.4	0.0	0.6	15.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.58	0.36		1.00	0.43		0.10
Lane Grp Cap(c), veh/h	113	1475	639	35	660	629	641	0	561	547	0	0
V/C Ratio(X)	0.87	0.32	0.08	0.93	0.59	0.59	0.37	0.00	0.04	0.51	0.00	0.00
Avail Cap(c_a), veh/h	524	2197	952	524	1099	1048	1105	0	1008	971	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.4	13.3	11.9	33.1	17.0	17.2	15.1	0.0	13.3	18.0	0.0	0.0
Incr Delay (d2), s/veh	7.3	0.2	0.1	29.0	1.0	1.1	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.9	0.6	0.9	6.0	5.8	3.3	0.0	0.3	4.4	0.0	0.0
LnGrp Delay(d),s/veh	38.7	13.4	12.0	62.1	18.1	18.3	15.3	0.0	13.3	18.3	0.0	0.0
LnGrp LOS	D	B	B	E	B	B	B		B	B		
Approach Vol, veh/h		615			790			261			279	
Approach Delay, s/veh		17.3			20.0			15.1			18.3	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.3	32.2		30.1	8.3	29.2		30.1
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46
Max Q Clear Time (g_c+I1), s	3.3	8.0		17.0	5.7	14.0		9.4
Green Ext Time (p_c), s	0.0	11.4		1.4	0.0	10.6		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	30	10	320	10	60	10	150	360	80	230	10
Future Vol, veh/h	30	30	10	320	10	60	10	150	360	80	230	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	33	11	348	11	65	11	163	391	87	250	11
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	13.3	27.7	20.2	15.3
HCM LOS	B	D	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	43%	100%	0%	41%	0%
Vol Thru, %	94%	0%	43%	0%	14%	59%	92%
Vol Right, %	0%	100%	14%	0%	86%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	360	70	320	70	195	125
LT Vol	10	0	30	320	0	80	0
Through Vol	150	0	30	0	10	115	115
RT Vol	0	360	10	0	60	0	10
Lane Flow Rate	174	391	76	348	76	212	136
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.348	0.702	0.178	0.759	0.142	0.452	0.28
Departure Headway (Hd)	7.208	6.457	8.424	7.86	6.736	7.68	7.411
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	560	425	459	532	468	485
Service Time	4.953	4.203	6.495	5.608	4.483	5.432	5.163
HCM Lane V/C Ratio	0.349	0.698	0.179	0.758	0.143	0.453	0.28
HCM Control Delay	13.8	23.1	13.3	31.5	10.6	16.7	13
HCM Lane LOS	B	C	B	D	B	C	B
HCM 95th-tile Q	1.5	5.6	0.6	6.4	0.5	2.3	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	0	200	0	0	0	210	370	0	0	560	260
Future Volume (veh/h)	270	0	200	0	0	0	210	370	0	0	560	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	0	47	0	0	0	228	402	0	0	609	193
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	629	272	3	6	3	280	2432	1088	3	868	722
Arrive On Green	0.19	0.00	0.18	0.00	0.00	0.00	0.16	0.69	0.00	0.00	0.47	0.47
Sat Flow, veh/h	1774	3539	1529	1774	3539	1583	1774	3539	1583	1774	1863	1551
Grp Volume(v), veh/h	293	0	47	0	0	0	228	402	0	0	609	193
Grp Sat Flow(s),veh/h/ln	1774	1770	1529	1774	1770	1583	1774	1770	1583	1774	1863	1551
Q Serve(g_s), s	10.1	0.0	1.6	0.0	0.0	0.0	7.8	2.5	0.0	0.0	16.3	4.8
Cycle Q Clear(g_c), s	10.1	0.0	1.6	0.0	0.0	0.0	7.8	2.5	0.0	0.0	16.3	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	629	272	3	6	3	280	2432	1088	3	868	722
V/C Ratio(X)	0.89	0.00	0.17	0.00	0.00	0.00	0.82	0.17	0.00	0.00	0.70	0.27
Avail Cap(c_a), veh/h	846	2308	997	451	1520	680	1016	3996	1788	169	1215	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	21.9	0.0	0.0	0.0	25.6	3.5	0.0	0.0	13.3	10.2
Incr Delay (d2), s/veh	3.3	0.0	0.1	0.0	0.0	0.0	2.2	0.1	0.0	0.0	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.7	0.0	0.0	0.0	4.0	1.3	0.0	0.0	8.6	2.1
LnGrp Delay(d),s/veh	28.3	0.0	22.0	0.0	0.0	0.0	27.8	3.6	0.0	0.0	14.5	10.5
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		340			0			630			802	
Approach Delay, s/veh		27.4			0.0			12.3			13.5	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	47.2	0.0	15.7	13.9	33.3	15.7	0.0
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	30.5	27.0
Max Q Clear Time (g_c+I1), s	0.0	4.5	0.0	3.6	9.8	18.3	12.1	0.0
Green Ext Time (p_c), s	0.0	15.2	0.0	0.0	0.1	10.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Notes

Intersection						
Int Delay, s/veh	6.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	280	300	200	180	40
Future Vol, veh/h	60	280	300	200	180	40
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	304	326	217	196	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	967	206	196	0	-	0
Stage 1	196	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	266	834	1376	-	-	0
Stage 1	836	-	-	-	-	0
Stage 2	418	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	202	827	1365	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	318	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	5.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1365	-	1004	-
HCM Lane V/C Ratio	0.239	-	0.368	-
HCM Control Delay (s)	8.5	-	10.7	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.9	-	1.7	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	70	100	20	20	100	260	40	10	130	10
Future Vol, veh/h	10	10	70	100	20	20	100	260	40	10	130	10
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	76	109	22	22	109	283	43	11	141	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	558	731	96	640	716	183	162	0	0	336	0	0
Stage 1	178	178	-	532	532	-	-	-	-	-	-	-
Stage 2	380	553	-	108	184	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	412	347	942	360	354	828	1414	-	-	1220	-	-
Stage 1	806	751	-	499	524	-	-	-	-	-	-	-
Stage 2	614	513	-	886	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	344	305	926	291	312	814	1402	-	-	1210	-	-
Mov Cap-2 Maneuver	344	305	-	291	312	-	-	-	-	-	-	-
Stage 1	723	737	-	447	470	-	-	-	-	-	-	-
Stage 2	511	460	-	787	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	22.7	2.1	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1402	-	-	330	815	293	530	1210	-	-
HCM Lane V/C Ratio	0.078	-	-	0.049	0.1	0.408	0.062	0.009	-	-
HCM Control Delay (s)	7.8	0.2	-	16.5	9.9	25.5	12.2	8	0	-
HCM Lane LOS	A	A	-	C	A	D	B	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	0.3	1.9	0.2	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	210	0	0	0	90	470	0	0	660	20
Future Vol, veh/h	20	0	210	0	0	0	90	470	0	0	660	20
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	228	0	0	0	98	511	0	0	717	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1199	1445	390	1076	1456	265	749	0	0	511	0	0
Stage 1	738	738	-	707	707	-	-	-	-	-	-	-
Stage 2	461	707	-	369	749	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	141	131	609	174	129	733	856	-	-	1050	-	-
Stage 1	376	422	-	392	436	-	-	-	-	-	-	-
Stage 2	550	436	-	623	417	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	122	109	599	94	107	727	849	-	-	1041	-	-
Mov Cap-2 Maneuver	122	109	-	94	107	-	-	-	-	-	-	-
Stage 1	313	418	-	329	366	-	-	-	-	-	-	-
Stage 2	458	366	-	382	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.8	0	2.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	849	-	-	447	-	1041	-	-
HCM Lane V/C Ratio	0.115	-	-	0.559	-	-	-	-
HCM Control Delay (s)	9.8	0.6	-	22.8	0	0	-	-
HCM Lane LOS	A	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	240	110	0	620	820	0	0	0	390	10	170
Future Volume (veh/h)	0	240	110	0	620	820	0	0	0	390	10	170
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	261	0	0	674	0				432	0	60
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2194	0	0	1527	683				1020	0	455
Arrive On Green	0.00	0.44	0.00	0.00	0.44	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	261	0	0	674	0				432	0	60
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	0.9	0.0	0.0	4.0	0.0				2.9	0.0	0.8
Cycle Q Clear(g_c), s	0.0	0.9	0.0	0.0	4.0	0.0				2.9	0.0	0.8
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2194	0	0	1527	683				1020	0	455
V/C Ratio(X)	0.00	0.12	0.00	0.00	0.44	0.00				0.42	0.00	0.13
Avail Cap(c_a), veh/h	0	10109	0	0	7036	3148				3690	0	1647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	0.0	0.0	5.7	0.0				8.6	0.0	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	1.9	0.0				1.5	0.0	0.4
LnGrp Delay(d),s/veh	0.0	4.9	0.0	0.0	5.8	0.0				8.7	0.0	7.9
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		261			674						492	
Approach Delay, s/veh		4.9			5.8						8.6	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		17.2		12.6		17.2		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		2.9		4.9		6.0		
Green Ext Time (p_c), s		4.2		0.9		4.2		

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	570	50	0	1290	440	150	0	510	0	0	0
Future Volume (vph)	10	570	50	0	1290	440	150	0	510	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frpb, ped/bikes		1.00			0.99			1.00	1.00			
Flpb, ped/bikes		1.00			1.00			1.00	1.00			
Frt		0.99			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4868			4715			1770	2787			
Flt Permitted		0.87			1.00			0.95	1.00			
Satd. Flow (perm)		4260			4715			1770	2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	620	54	0	1402	478	163	0	554	0	0	0
RTOR Reduction (vph)	0	10	0	0	115	0	0	0	144	0	0	0
Lane Group Flow (vph)	0	675	0	0	1765	0	0	163	410	0	0	0
Confl. Peds. (#/hr)			4			4						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		15.1			27.1			9.7	21.7			
Effective Green, g (s)		17.9			29.9			12.5	24.5			
Actuated g/C Ratio		0.36			0.59			0.25	0.49			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1512			2797			438	1354			
v/s Ratio Prot					c0.37			c0.09	0.15			
v/s Ratio Perm		0.16										
v/c Ratio		0.45			0.63			0.37	0.30			
Uniform Delay, d1		12.5			6.7			15.7	7.8			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		0.1			0.3			0.2	0.0			
Delay (s)		12.5			7.0			15.9	7.9			
Level of Service		B			A			B	A			
Approach Delay (s)		12.5			7.0			9.7			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	520	190	30	850	340	270	340	20	140	260	510
Future Volume (veh/h)	240	520	190	30	850	340	270	340	20	140	260	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	261	565	66	33	924	311	293	370	0	152	283	433
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	257	729	326	305	1155	388	580	871	390	422	1116	497
Arrive On Green	0.08	0.21	0.21	0.18	0.32	0.30	0.17	0.25	0.00	0.24	0.32	0.32
Sat Flow, veh/h	3343	3438	1538	1723	3654	1227	3442	3539	1583	1774	3539	1576
Grp Volume(v), veh/h	261	565	66	33	833	402	293	370	0	152	283	433
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1587	1721	1770	1583	1774	1770	1576
Q Serve(g_s), s	10.0	20.1	4.6	2.1	30.1	30.3	10.1	11.4	0.0	9.3	7.7	25.8
Cycle Q Clear(g_c), s	10.0	20.1	4.6	2.1	30.1	30.3	10.1	11.4	0.0	9.3	7.7	25.8
Prop In Lane	1.00		1.00	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	729	326	305	1041	502	580	871	390	422	1116	497
V/C Ratio(X)	1.01	0.78	0.20	0.11	0.80	0.80	0.51	0.42	0.00	0.36	0.25	0.87
Avail Cap(c_a), veh/h	257	1428	639	305	1292	623	580	871	390	422	1116	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	48.3	42.2	44.9	40.7	41.3	49.1	41.3	0.0	41.3	33.1	24.5
Incr Delay (d2), s/veh	57.5	1.7	0.3	0.2	3.0	6.1	0.7	1.5	0.0	0.5	0.5	18.6
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	9.7	2.0	1.0	14.1	14.2	4.9	5.8	0.0	4.6	3.9	13.7
LnGrp Delay(d),s/veh	117.6	50.0	42.5	45.0	43.7	47.4	49.8	42.8	0.0	41.8	33.7	43.1
LnGrp LOS	F	D	D	D	D	D	D	D		D	C	D
Approach Vol, veh/h		892			1268			663			868	
Approach Delay, s/veh		69.2			44.9			45.9			39.8	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.9	36.0	27.5	31.6	25.9	45.0	14.0	45.1
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	20.0	30.5	6.0	* 53	11.0	39.5	9.0	49.5
Max Q Clear Time (g_c+I1), s	11.3	13.4	4.1	22.1	12.1	27.8	12.0	32.3
Green Ext Time (p_c), s	1.0	2.1	1.3	3.9	0.0	2.7	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	20	20	240	20	30	20	420	260	20	330	20
Future Volume (veh/h)	20	20	20	240	20	30	20	420	260	20	330	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	22	2	277	0	0	22	457	0	22	359	20
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	54	93	562	0	251	65	1464	655	65	2039	112
Arrive On Green	0.06	0.06	0.06	0.16	0.00	0.00	0.04	0.41	0.00	0.04	0.41	0.38
Sat Flow, veh/h	909	909	1568	3548	0	1583	1774	3539	1583	1774	4932	272
Grp Volume(v), veh/h	44	0	2	277	0	0	22	457	0	22	246	133
Grp Sat Flow(s),veh/h/ln	1817	0	1568	1774	0	1583	1774	1770	1583	1774	1695	1813
Q Serve(g_s), s	1.1	0.0	0.1	3.4	0.0	0.0	0.6	4.2	0.0	0.6	2.2	2.3
Cycle Q Clear(g_c), s	1.1	0.0	0.1	3.4	0.0	0.0	0.6	4.2	0.0	0.6	2.2	2.3
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	108	0	93	562	0	251	65	1464	655	65	1402	750
V/C Ratio(X)	0.41	0.00	0.02	0.49	0.00	0.00	0.34	0.31	0.00	0.34	0.18	0.18
Avail Cap(c_a), veh/h	1169	0	1008	3018	0	1347	1141	3414	1527	1141	3271	1749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	21.3	18.5	0.0	0.0	22.6	9.5	0.0	22.6	8.9	9.0
Incr Delay (d2), s/veh	2.4	0.0	0.1	0.7	0.0	0.0	3.0	0.3	0.0	3.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.7	0.0	0.0	0.3	2.1	0.0	0.3	1.0	1.2
LnGrp Delay(d),s/veh	24.3	0.0	21.4	19.2	0.0	0.0	25.7	9.8	0.0	25.7	9.1	9.3
LnGrp LOS	C		C	B			C	A		C	A	A
Approach Vol, veh/h		46			277			479			401	
Approach Delay, s/veh		24.2			19.2			10.5			10.0	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	23.9		11.6	5.8	23.9		6.9
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.6	6.2		5.4	2.6	4.3		3.1
Green Ext Time (p_c), s	0.0	12.2		0.9	0.0	12.3		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		12.9
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	540	50	50	660	360	70	210	40	450	220	380
Future Volume (veh/h)	130	540	50	50	660	360	70	210	40	450	220	380
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	587	49	54	717	139	76	228	11	489	239	258
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	302	1304	109	164	1805	549	179	874	380	600	1307	571
Arrive On Green	0.09	0.41	0.38	0.05	0.37	0.37	0.05	0.25	0.25	0.17	0.37	0.37
Sat Flow, veh/h	3343	3207	267	3343	4940	1503	3442	3539	1539	3442	3539	1547
Grp Volume(v), veh/h	141	314	322	54	717	139	76	228	11	489	239	258
Grp Sat Flow(s),veh/h/ln	1672	1719	1755	1672	1647	1503	1721	1770	1539	1721	1770	1547
Q Serve(g_s), s	5.2	17.3	17.4	2.0	14.0	4.9	2.8	6.7	0.7	17.8	5.9	16.4
Cycle Q Clear(g_c), s	5.2	17.3	17.4	2.0	14.0	4.9	2.8	6.7	0.7	17.8	5.9	16.4
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	699	713	164	1805	549	179	874	380	600	1307	571
V/C Ratio(X)	0.47	0.45	0.45	0.33	0.40	0.25	0.42	0.26	0.03	0.82	0.18	0.45
Avail Cap(c_a), veh/h	302	699	713	283	1805	549	188	874	380	635	1307	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	28.0	28.2	59.7	30.6	9.6	59.7	39.4	37.1	51.7	27.7	31.0
Incr Delay (d2), s/veh	0.4	2.1	2.1	0.4	0.7	1.1	0.6	0.7	0.1	7.0	0.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.6	8.8	0.9	6.5	2.2	1.3	3.4	0.3	9.1	2.9	7.4
LnGrp Delay(d),s/veh	56.6	30.1	30.3	60.2	31.3	10.7	60.3	40.1	37.3	58.7	28.0	33.6
LnGrp LOS	E	C	C	E	C	B	E	D	D	E	C	C
Approach Vol, veh/h		777			910			315			986	
Approach Delay, s/veh		35.0			29.9			44.9			44.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	51.5	26.7	36.1	10.4	56.8	10.8	52.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	8.6	45.4	21.2	29.0	8.9	45.1	5.0	45.2
Max Q Clear Time (g_c+I1), s	7.2	16.0	19.8	8.7	4.0	19.4	4.8	18.4
Green Ext Time (p_c), s	0.0	1.7	0.1	0.5	0.0	1.1	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		37.7
HCM 2010 LOS		D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU No Proj AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	239	0.0	0.235	6.5	LOS A	1.1	27.6	0.60	0.57	29.5
8	T1	152	0.0	0.235	5.7	LOS A	1.1	27.6	0.59	0.54	24.8
18	R2	54	0.0	0.235	5.7	LOS A	1.1	27.6	0.59	0.54	36.1
Approach		446	0.0	0.235	6.1	LOS A	1.1	27.6	0.59	0.56	28.7
East: WB Boronda Rd											
1	L2	76	1.2	0.410	7.8	LOS A	2.2	56.3	0.61	0.55	29.7
6	T1	924	1.2	0.410	7.0	LOS A	2.4	60.5	0.59	0.51	33.0
16	R2	65	6.3	0.047	3.0	LOS A	0.2	6.2	0.40	0.23	33.9
Approach		1065	1.5	0.410	6.8	LOS A	2.4	60.5	0.58	0.50	32.8
North: SB McKinnon St											
7	L2	43	0.0	0.055	5.1	LOS A	0.2	6.0	0.65	0.57	33.4
4	T1	22	1.8	0.067	3.8	LOS A	0.3	8.3	0.65	0.54	31.7
14	R2	130	1.1	0.067	3.7	LOS A	0.3	8.3	0.63	0.53	32.8
Approach		196	0.9	0.067	4.0	LOS A	0.3	8.3	0.64	0.54	32.9
West: EB Boronda Rd											
5	L2	207	0.0	0.289	5.1	LOS A	1.4	34.0	0.27	0.15	32.3
2	T1	674	0.0	0.289	4.7	LOS A	1.4	34.7	0.25	0.14	35.1
12	R2	261	0.0	0.155	3.3	LOS A	0.7	18.3	0.20	0.09	30.3
Approach		1141	0.0	0.289	4.4	LOS A	1.4	34.7	0.24	0.13	34.0
All Vehicles		2848	0.6	0.410	5.6	LOS A	2.4	60.5	0.45	0.36	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU No Proj AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	207	0.0	0.150	3.8	LOS A	0.7	16.5	0.49	0.40	35.3
8	T1	1	0.0	0.001	3.6	LOS A	0.0	0.1	0.48	0.26	36.5
18	R2	120	0.0	0.087	3.3	LOS A	0.4	9.2	0.48	0.36	36.5
Approach		327	0.0	0.150	3.6	LOS A	0.7	16.5	0.49	0.39	35.7
East: WB Baronda Rd											
1	L2	98	0.0	0.420	7.3	LOS A	2.6	65.6	0.45	0.31	35.5
6	T1	946	0.9	0.420	7.1	LOS A	2.7	66.9	0.45	0.30	36.4
16	R2	1	0.0	0.420	6.9	LOS A	2.7	66.9	0.44	0.29	34.8
Approach		1045	0.8	0.420	7.1	LOS A	2.7	66.9	0.45	0.30	36.3
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.001	4.7	LOS A	0.0	0.2	0.64	0.39	34.4
4	T1	1	0.0	0.001	3.1	LOS A	0.0	0.1	0.63	0.34	36.2
14	R2	1	0.0	0.001	3.0	LOS A	0.0	0.1	0.59	0.31	36.5
Approach		3	0.0	0.001	3.6	LOS A	0.0	0.2	0.62	0.35	35.7
West: EB Boronda Rd											
5u	U	1	0.0	0.313	5.6	LOS A	1.8	44.8	0.28	0.14	37.8
5	L2	1	0.0	0.313	5.6	LOS A	1.8	44.8	0.28	0.14	36.4
2	T1	717	2.0	0.313	5.5	LOS A	1.8	45.1	0.28	0.14	37.0
12	R2	120	0.0	0.313	5.3	LOS A	1.8	45.1	0.27	0.14	35.9
Approach		839	1.7	0.313	5.5	LOS A	1.8	45.1	0.28	0.14	36.9
All Vehicles		2214	1.0	0.420	6.0	LOS A	2.7	66.9	0.39	0.25	36.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU No Proj AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Natividad Rd											
3	L2	130	0.0	0.107	3.9	LOS A	0.3	7.6	0.35	0.31	36.1
8	T1	185	1.6	0.097	4.7	LOS A	0.3	6.5	0.39	0.35	36.0
18	R2	293	0.0	0.175	0.0	LOS A	0.0	0.0	0.00	0.00	39.4
Approach		609	0.5	0.175	2.2	LOS A	0.3	7.6	0.19	0.17	37.5
East: WB Boronda Rd											
1	L2	304	0.0	0.277	5.6	LOS A	1.1	27.8	0.38	0.30	33.4
6	T1	728	0.6	0.277	5.3	LOS A	1.1	28.7	0.38	0.29	39.8
16	R2	272	1.6	0.197	4.2	LOS A	0.8	19.5	0.30	0.19	37.5
Approach		1304	0.7	0.277	5.1	LOS A	1.1	28.7	0.36	0.27	38.2
North: SB Natividad Rd											
7	L2	185	0.0	0.150	5.5	LOS A	0.5	12.8	0.53	0.53	35.9
4	T1	250	0.0	0.150	4.8	LOS A	0.5	13.7	0.52	0.50	35.6
14	R2	33	0.0	0.027	3.2	LOS A	0.1	2.2	0.43	0.32	39.5
Approach		467	0.0	0.150	5.0	LOS A	0.5	13.7	0.52	0.50	36.1
West: EB Boronda Rd											
5u	U	1	0.0	0.199	5.4	LOS A	0.7	18.0	0.47	0.44	38.6
5	L2	87	0.0	0.199	5.4	LOS A	0.7	18.0	0.47	0.44	38.3
2	T1	554	0.3	0.199	5.1	LOS A	0.8	18.9	0.47	0.43	39.7
12	R2	120	0.0	0.093	3.6	LOS A	0.3	8.1	0.38	0.28	38.0
Approach		762	0.2	0.199	4.9	LOS A	0.8	18.9	0.45	0.40	39.3
All Vehicles		3142	0.4	0.277	4.5	LOS A	1.1	28.7	0.38	0.32	38.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_CU No Proj AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	402	0.4	0.160	4.2	LOS A	0.7	18.4	0.49	0.39	32.9
8	T1	11	0.0	0.042	3.8	LOS A	0.2	4.1	0.47	0.35	35.3
18	R2	33	0.0	0.042	3.8	LOS A	0.2	4.1	0.47	0.35	34.6
Approach		446	0.4	0.160	4.2	LOS A	0.7	18.4	0.48	0.39	33.0
East: WB Boronda Rd											
1	L2	33	0.0	0.390	7.1	LOS A	1.7	42.3	0.45	0.39	34.1
6	T1	924	0.3	0.390	6.7	LOS A	1.7	43.6	0.44	0.37	35.4
16	R2	11	0.0	0.007	2.4	LOS A	0.0	0.6	0.06	0.01	36.2
Approach		967	0.3	0.390	6.7	LOS A	1.7	43.6	0.44	0.37	35.3
North: SB Independence Blvd (Future)											
7	L2	11	0.0	0.023	4.0	LOS A	0.1	2.3	0.59	0.47	35.1
4	T1	11	0.0	0.023	4.0	LOS A	0.1	2.3	0.59	0.47	33.5
14	R2	11	0.0	0.011	3.9	LOS A	0.0	1.1	0.58	0.43	35.3
Approach		33	0.0	0.023	4.0	LOS A	0.1	2.3	0.58	0.46	34.7
West: EB Boronda Rd											
5u	U	1	0.0	0.228	4.4	LOS A	1.3	31.4	0.18	0.07	37.2
5	L2	11	0.0	0.228	4.4	LOS A	1.3	31.4	0.18	0.07	36.1
2	T1	685	0.8	0.228	4.2	LOS A	1.3	31.8	0.18	0.07	36.5
12	R2	424	0.3	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1121	0.6	0.254	2.6	LOS A	1.3	31.8	0.11	0.04	36.6
All Vehicles		2566	0.4	0.390	4.4	LOS A	1.7	43.6	0.31	0.23	35.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	490	150	40	670	0	200	0	50	0	0	0
Future Volume (veh/h)	0	490	150	40	670	0	200	0	50	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	533	148	43	728	0	217	0	21	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	1	1787	494	55	2539	0	312	0	25	55	372	0
Arrive On Green	0.00	1.00	1.00	0.03	0.74	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1774	2643	730	1723	3529	0	1296	0	125	1385	1863	0
Grp Volume(v), veh/h	0	346	335	43	728	0	238	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1654	1723	1719	0	1422	0	0	1385	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	3.2	9.1	0.0	20.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.2	9.1	0.0	20.9	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.44	1.00		0.00	0.91		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	1	1162	1118	55	2539	0	337	0	0	55	372	0
V/C Ratio(X)	0.00	0.30	0.30	0.79	0.29	0.00	0.71	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	82	1162	1118	119	2539	0	578	0	0	290	688	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.98	0.98	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	62.5	5.6	0.0	50.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.7	21.3	0.3	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	1.9	4.3	0.0	8.5	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.6	0.7	83.8	5.9	0.0	52.7	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	F	A		D					
Approach Vol, veh/h		681			771			238			0	
Approach Delay, s/veh		0.7			10.3			52.7			0.0	
Approach LOS		A			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	91.9		30.0	0.0	100.0		30.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	61.0		48.0	6.0	64.0		48.0
Max Q Clear Time (g_c+I1), s	5.2	2.0		0.0	0.0	11.1		22.9
Green Ext Time (p_c), s	0.0	11.7		0.0	0.0	11.5		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	130	210	0
Future Vol, veh/h	10	10	0	130	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	0	141	228	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.1	8.5	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	0%	100%	0%	0%
Vol Thru, %	100%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	130	10	10	210
LT Vol	0	0	10	0	0
Through Vol	0	130	0	0	210
RT Vol	0	0	0	10	0
Lane Flow Rate	0	141	11	11	228
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0	0.184	0.018	0.014	0.284
Departure Headway (Hd)	4.685	4.685	5.921	4.712	4.479
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	759	608	764	794
Service Time	2.456	2.456	3.621	2.412	2.553
HCM Lane V/C Ratio	0	0.186	0.018	0.014	0.287
HCM Control Delay	7.5	8.5	8.7	7.5	9.3
HCM Lane LOS	N	A	A	A	A
HCM 95th-tile Q	0	0.7	0.1	0	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	330	140	300	310	250	40	480	320	200	660	100
Future Volume (veh/h)	110	330	140	300	310	250	40	480	320	200	660	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	359	23	326	337	69	43	522	274	217	717	41
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	808	334	373	637	531	275	1164	542	320	1430	429
Arrive On Green	0.10	0.23	0.23	0.21	0.34	0.34	0.16	0.34	0.33	0.09	0.28	0.28
Sat Flow, veh/h	1774	3539	1465	1774	1863	1553	1774	3390	1580	3442	5085	1526
Grp Volume(v), veh/h	120	359	23	326	337	69	43	522	274	217	717	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1465	1774	1863	1553	1774	1695	1580	1721	1695	1526
Q Serve(g_s), s	8.4	11.2	1.1	22.8	18.6	3.9	2.7	15.3	17.9	7.8	15.1	1.9
Cycle Q Clear(g_c), s	8.4	11.2	1.1	22.8	18.6	3.9	2.7	15.3	17.9	7.8	15.1	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	808	334	373	637	531	275	1164	542	320	1430	429
V/C Ratio(X)	0.70	0.44	0.07	0.87	0.53	0.13	0.16	0.45	0.51	0.68	0.50	0.10
Avail Cap(c_a), veh/h	292	998	413	430	669	558	275	1164	542	323	1430	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	42.4	17.7	48.9	33.8	29.0	46.8	32.6	34.3	56.2	38.5	18.3
Incr Delay (d2), s/veh	1.9	0.1	0.0	14.7	0.3	0.0	0.1	1.3	3.3	4.6	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.5	0.4	12.7	9.6	1.7	1.3	7.4	8.3	3.9	7.2	0.8
LnGrp Delay(d),s/veh	57.9	42.6	17.7	63.6	34.1	29.0	46.9	33.9	37.7	60.7	39.7	18.7
LnGrp LOS	E	D	B	E	C	C	D	C	D	E	D	B
Approach Vol, veh/h		502			732			839			975	
Approach Delay, s/veh		45.1			46.8			35.8			43.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	47.9	30.9	33.2	23.8	40.0	16.4	47.8
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	30.8	28.9	34.0	6.8	33.9	19.0	43.9
Max Q Clear Time (g_c+I1), s	9.8	19.9	24.8	13.2	4.7	17.1	10.4	20.6
Green Ext Time (p_c), s	0.0	1.7	0.1	1.5	0.6	1.8	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	0	400	0	0	0	380	570	0	0	1020	200
Future Volume (veh/h)	230	0	400	0	0	0	380	570	0	0	1020	200
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	980	0	980				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	250	0	92				413	620	0	0	1109	189
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	318	0	146				474	3677	0	2	1766	301
Arrive On Green	0.18	0.00	0.18				0.27	0.72	0.00	0.00	0.41	0.39
Sat Flow, veh/h	1811	0	833				1774	5253	0	1774	4357	742
Grp Volume(v), veh/h	250	0	92				413	620	0	0	863	435
Grp Sat Flow(s),veh/h/ln	906	0	833				1774	1695	0	1774	1695	1709
Q Serve(g_s), s	10.4	0.0	8.1				17.6	3.0	0.0	0.0	16.0	16.2
Cycle Q Clear(g_c), s	10.4	0.0	8.1				17.6	3.0	0.0	0.0	16.0	16.2
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.43
Lane Grp Cap(c), veh/h	318	0	146				474	3677	0	2	1374	693
V/C Ratio(X)	0.79	0.00	0.63				0.87	0.17	0.00	0.00	0.63	0.63
Avail Cap(c_a), veh/h	596	0	274				584	3863	0	135	1717	866
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	30.2				27.7	3.4	0.0	0.0	18.7	19.0
Incr Delay (d2), s/veh	4.3	0.0	4.4				14.2	0.0	0.0	0.0	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.8				10.5	1.4	0.0	0.0	7.5	7.7
LnGrp Delay(d),s/veh	35.4	0.0	34.6				41.8	3.5	0.0	0.0	19.2	20.0
LnGrp LOS	D		C				D	A			B	B
Approach Vol, veh/h		342						1033			1298	
Approach Delay, s/veh		35.2						18.8			19.5	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	61.1		17.9	25.1	36.0		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	0.0	5.0		12.4	19.6	18.2		
Green Ext Time (p_c), s	0.0	19.5		0.9	1.5	12.4		

Intersection Summary		
HCM 2010 Ctrl Delay		21.2
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	490	110	10	1000	60	200	90	20	70	120	520
Future Volume (veh/h)	200	490	110	10	1000	60	200	90	20	70	120	520
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	213	521	106	11	1064	61	213	96	12	74	128	247
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1495	303	75	1321	76	349	535	67	432	616	511
Arrive On Green	0.16	0.51	0.48	0.04	0.39	0.36	0.33	0.33	0.32	0.33	0.33	0.33
Sat Flow, veh/h	1774	2933	594	1774	3401	195	989	1618	202	1254	1863	1543
Grp Volume(v), veh/h	213	313	314	11	553	572	213	0	108	74	128	247
Grp Sat Flow(s),veh/h/ln	1774	1770	1758	1774	1770	1826	989	0	1821	1254	1863	1543
Q Serve(g_s), s	11.7	10.8	11.1	0.6	28.5	28.5	20.2	0.0	4.3	4.6	5.1	13.1
Cycle Q Clear(g_c), s	11.7	10.8	11.1	0.6	28.5	28.5	25.2	0.0	4.3	8.9	5.1	13.1
Prop In Lane	1.00		0.34	1.00		0.11	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	290	902	896	75	687	710	349	0	602	432	616	511
V/C Ratio(X)	0.73	0.35	0.35	0.15	0.81	0.81	0.61	0.00	0.18	0.17	0.21	0.48
Avail Cap(c_a), veh/h	451	1037	1030	156	743	767	398	0	694	495	710	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	14.9	15.3	47.3	27.9	28.0	33.7	0.0	24.4	27.5	24.6	27.3
Incr Delay (d2), s/veh	3.6	0.2	0.2	0.9	6.1	5.9	2.2	0.0	0.1	0.2	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	5.3	5.4	0.3	15.0	15.5	5.7	0.0	2.2	1.6	2.6	5.6
LnGrp Delay(d),s/veh	44.3	15.2	15.5	48.2	33.9	33.9	35.8	0.0	24.6	27.7	24.8	28.0
LnGrp LOS	D	B	B	D	C	C	D		C	C	C	C
Approach Vol, veh/h		840			1136			321			449	
Approach Delay, s/veh		22.7			34.1			32.0			27.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	56.2		37.9	20.7	43.8		37.9
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	2.6	13.1		15.1	13.7	30.5		27.2
Green Ext Time (p_c), s	0.0	14.8		3.6	0.4	6.5		2.7

Intersection Summary		
HCM 2010 Ctrl Delay		29.2
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	0	130	0	0	0	70	510	0	0	450	110
Future Volume (veh/h)	170	0	130	0	0	0	70	510	0	0	450	110
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	185	0	38	0	0	0	76	554	0	0	489	40
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	340	345	302	4	9	0	182	2096	0	4	1398	612
Arrive On Green	0.19	0.00	0.15	0.00	0.00	0.00	0.11	0.61	0.00	0.00	0.41	0.41
Sat Flow, veh/h	1747	1770	1552	1774	3632	0	1723	3529	0	1723	3438	1504
Grp Volume(v), veh/h	185	0	38	0	0	0	76	554	0	0	489	40
Grp Sat Flow(s),veh/h/ln	1747	1770	1552	1774	1770	0	1723	1719	0	1723	1719	1504
Q Serve(g_s), s	3.9	0.0	0.9	0.0	0.0	0.0	1.7	3.1	0.0	0.0	4.0	0.7
Cycle Q Clear(g_c), s	3.9	0.0	0.9	0.0	0.0	0.0	1.7	3.1	0.0	0.0	4.0	0.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	345	302	4	9	0	182	2096	0	4	1398	612
V/C Ratio(X)	0.54	0.00	0.13	0.00	0.00	0.00	0.42	0.26	0.00	0.00	0.35	0.07
Avail Cap(c_a), veh/h	982	995	872	1604	3200	0	674	3192	0	674	3192	1397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	14.4	0.0	0.0	0.0	17.1	3.7	0.0	0.0	8.4	7.4
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.0	0.0	0.0	1.5	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.4	0.0	0.0	0.0	0.9	1.4	0.0	0.0	1.9	0.3
LnGrp Delay(d),s/veh	16.2	0.0	14.6	0.0	0.0	0.0	18.7	3.8	0.0	0.0	8.6	7.4
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		223			0			630			529	
Approach Delay, s/veh		15.9			0.0			5.6			8.5	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	20.6		0.0	0.0	29.0		12.0
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0
Max Q Clear Time (g_c+I1), s	3.7	6.0		0.0	0.0	5.1		5.9
Green Ext Time (p_c), s	0.1	7.5		0.0	0.0	7.5		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		8.4
HCM 2010 LOS		A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1040	310	0	1350	320	0	0	0	230	0	440
Future Volume (veh/h)	0	1040	310	0	1350	320	0	0	0	230	0	440
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1095	0	0	1421	0				242	0	440
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1970	881	0	1970	0				1099	0	506
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1095	0	0	1421	0				242	0	440
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	14.9	0.0	0.0	22.4	0.0				3.8	0.0	19.5
Cycle Q Clear(g_c), s	0.0	14.9	0.0	0.0	22.4	0.0				3.8	0.0	19.5
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1970	881	0	1970	0				1099	0	506
V/C Ratio(X)	0.00	0.56	0.00	0.00	0.72	0.00				0.22	0.00	0.87
Avail Cap(c_a), veh/h	0	2586	1157	0	2586	0				1664	0	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	0.0	0.0	11.6	0.0				18.5	0.0	23.9
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.1	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.0	0.0	0.0	10.6	0.0				1.8	0.0	9.3
LnGrp Delay(d),s/veh	0.0	10.0	0.0	0.0	12.0	0.0				18.6	0.0	30.0
LnGrp LOS		B			B					B		C
Approach Vol, veh/h		1095			1421						682	
Approach Delay, s/veh		10.0			12.0						26.0	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		46.7		27.8		46.7		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		54.9		35.4		54.9		
Max Q Clear Time (g_c+I1), s		16.9		21.5		24.4		
Green Ext Time (p_c), s		19.2		1.7		17.2		

Intersection Summary		
HCM 2010 Ctrl Delay		14.3
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	930	340	0	1420	260	250	0	120	0	0	0
Future Volume (vph)	0	930	340	0	1420	260	250	0	120	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.98		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3344		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3344		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1011	370	0	1543	283	272	0	130	0	0	0
RTOR Reduction (vph)	0	0	111	0	13	0	0	0	103	0	0	0
Lane Group Flow (vph)	0	1011	259	0	1813	0	136	136	27	0	0	0
Confl. Peds. (#/hr)						3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.8	63.8		63.8		18.4	18.4	18.4			
Effective Green, g (s)		64.4	63.8		64.4		18.6	18.6	18.6			
Actuated g/C Ratio		0.71	0.70		0.71		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2433	1078		2366		343	343	323			
v/s Ratio Prot		0.29			c0.54		c0.08	0.08				
v/s Ratio Perm			0.17						0.02			
v/c Ratio		0.42	0.24		0.77		0.40	0.40	0.08			
Uniform Delay, d1		5.5	4.9		8.5		31.3	31.3	29.3			
Progression Factor		1.00	1.00		0.67		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		1.1		0.3	0.3	0.0			
Delay (s)		5.6	5.0		6.8		31.6	31.6	29.3			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		5.5			6.8			30.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	460	90	160	530	100	80	560	140	180	890	130
Future Volume (veh/h)	210	460	90	160	530	100	80	560	140	180	890	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	228	500	85	174	576	95	87	609	57	196	967	128
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	284	787	133	224	686	113	188	1386	615	296	1918	253
Arrive On Green	0.16	0.27	0.25	0.13	0.23	0.22	0.05	0.39	0.39	0.09	0.42	0.41
Sat Flow, veh/h	1723	2939	497	1723	2948	485	3442	3539	1571	3442	4536	599
Grp Volume(v), veh/h	228	291	294	174	335	336	87	609	57	196	722	373
Grp Sat Flow(s),veh/h/ln	1723	1719	1717	1723	1719	1713	1721	1770	1571	1721	1695	1745
Q Serve(g_s), s	16.3	19.1	19.4	12.5	23.8	24.0	3.1	16.2	2.9	7.1	20.0	20.2
Cycle Q Clear(g_c), s	16.3	19.1	19.4	12.5	23.8	24.0	3.1	16.2	2.9	7.1	20.0	20.2
Prop In Lane	1.00		0.29	1.00		0.28	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	284	460	460	224	400	399	188	1386	615	296	1433	737
V/C Ratio(X)	0.80	0.63	0.64	0.78	0.84	0.84	0.46	0.44	0.09	0.66	0.50	0.51
Avail Cap(c_a), veh/h	337	535	534	327	525	523	194	1386	615	296	1433	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	41.3	41.7	53.9	46.8	47.2	58.7	28.6	24.6	56.7	27.1	27.4
Incr Delay (d2), s/veh	9.4	1.1	1.2	3.8	7.1	7.5	0.7	1.0	0.3	4.4	1.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	9.2	9.3	6.2	12.1	12.2	1.5	8.1	1.3	3.6	9.6	10.2
LnGrp Delay(d),s/veh	60.9	42.4	42.9	57.7	53.9	54.6	59.3	29.6	24.9	61.1	28.4	29.9
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		813			845			753			1291	
Approach Delay, s/veh		47.8			55.0			32.7			33.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.1	20.6	38.3	11.0	58.1	25.1	33.8
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	34.8	22.2	37.7	5.1	38.6	22.9	37.0
Max Q Clear Time (g_c+I1), s	9.1	18.2	14.5	21.4	5.1	22.2	18.3	26.0
Green Ext Time (p_c), s	0.0	4.4	0.0	1.1	0.0	4.3	0.7	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	510	110	860	630	380	60	800	660	410	940	80
Future Volume (veh/h)	160	510	110	860	630	380	60	800	660	410	940	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	174	554	0	935	685	0	65	870	667	446	1022	83
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	195	729	326	758	1131	506	75	1172	1554	390	1332	108
Arrive On Green	0.11	0.21	0.00	0.23	0.33	0.00	0.04	0.33	0.33	0.11	0.40	0.38
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2757	3442	3315	269
Grp Volume(v), veh/h	174	554	0	935	685	0	65	870	667	446	545	560
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1815
Q Serve(g_s), s	14.1	21.4	0.0	32.0	23.6	0.0	5.1	30.8	19.8	16.0	37.6	37.7
Cycle Q Clear(g_c), s	14.1	21.4	0.0	32.0	23.6	0.0	5.1	30.8	19.8	16.0	37.6	37.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	195	729	326	758	1131	506	75	1172	1554	390	711	729
V/C Ratio(X)	0.89	0.76	0.00	1.23	0.61	0.00	0.86	0.74	0.43	1.14	0.77	0.77
Avail Cap(c_a), veh/h	195	828	370	758	1218	545	75	1304	1657	390	777	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	52.2	0.0	54.6	39.7	0.0	67.2	41.9	17.9	62.6	36.5	36.7
Incr Delay (d2), s/veh	35.1	3.4	0.0	116.5	0.6	0.0	57.7	1.9	0.1	90.7	4.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	10.5	0.0	27.0	11.3	0.0	3.7	15.3	7.5	12.5	19.1	19.6
LnGrp Delay(d),s/veh	96.8	55.6	0.0	171.1	40.3	0.0	124.9	43.8	18.1	153.3	40.5	40.6
LnGrp LOS	F	E		F	D		F	D	B	F	D	D
Approach Vol, veh/h		728			1620			1602			1551	
Approach Delay, s/veh		65.4			115.8			36.4			73.0	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	50.7	36.0	34.4	10.0	60.7	20.0	50.4
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	32.8	34.0	23.4	7.1	39.7	16.1	25.6
Green Ext Time (p_c), s	0.0	11.5	0.0	4.4	0.0	12.9	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	870	650	30	130	720	220	50	150	150	370	130	1430
Future Volume (veh/h)	870	650	30	130	720	220	50	150	150	370	130	1430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1812	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	946	707	31	141	783	0	54	163	40	402	141	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1082	1556	68	167	804	359	70	218	52	435	526	447
Arrive On Green	0.32	0.46	0.45	0.09	0.23	0.00	0.04	0.08	0.08	0.25	0.28	0.00
Sat Flow, veh/h	3343	3360	147	1774	3438	1538	1774	2835	678	1774	1863	1583
Grp Volume(v), veh/h	946	362	376	141	783	0	54	100	103	402	141	0
Grp Sat Flow(s),veh/h/ln	1672	1721	1786	1774	1719	1538	1774	1770	1743	1774	1863	1583
Q Serve(g_s), s	35.4	19.0	19.0	10.4	30.0	0.0	4.0	7.3	7.7	29.3	7.8	0.0
Cycle Q Clear(g_c), s	35.4	19.0	19.0	10.4	30.0	0.0	4.0	7.3	7.7	29.3	7.8	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	1082	797	827	167	804	359	70	136	134	435	526	447
V/C Ratio(X)	0.87	0.45	0.45	0.84	0.97	0.00	0.77	0.74	0.77	0.92	0.27	0.00
Avail Cap(c_a), veh/h	1412	857	889	281	804	359	214	213	210	435	526	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.3	24.2	24.3	59.1	50.4	0.0	63.1	59.9	60.1	48.9	36.9	0.0
Incr Delay (d2), s/veh	5.1	0.4	0.4	10.9	25.5	0.0	16.3	7.5	8.8	25.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	9.1	9.5	5.6	17.1	0.0	2.3	3.9	4.0	17.5	4.0	0.0
LnGrp Delay(d),s/veh	47.4	24.6	24.7	70.0	75.9	0.0	79.4	67.4	68.9	74.4	37.2	0.0
LnGrp LOS	D	C	C	E	E		E	E	E	E	D	
Approach Vol, veh/h		1684			924			257			543	
Approach Delay, s/veh		37.4			75.0			70.5			64.8	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	65.4	9.2	41.5	46.9	35.0	35.0	15.7
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	12.4	21.0	6.0	9.8	37.4	32.0	31.3	9.7
Green Ext Time (p_c), s	0.2	13.7	0.1	1.6	3.5	0.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	470	150	190	400	0	190	0	30	0	0	0
Future Volume (veh/h)	0	470	150	190	400	0	190	0	30	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	511	145	207	435	0	207	0	8	0	0	-11
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	4	1002	283	298	2181	0	365	364	315	4	4	371
Arrive On Green	0.00	0.38	0.36	0.17	0.63	0.00	0.21	0.00	0.19	0.00	0.00	0.00
Sat Flow, veh/h	1774	2628	741	1723	3529	0	1774	1770	1530	1774	3632	0
Grp Volume(v), veh/h	0	333	323	207	435	0	207	0	8	0	-11	-11
Grp Sat Flow(s),veh/h/ln	1774	1719	1650	1723	1719	0	1774	1770	1530	1774	1770	1583
Q Serve(g_s), s	0.0	7.4	7.6	5.6	2.6	0.0	5.2	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.4	7.6	5.6	2.6	0.0	5.2	0.0	0.2	0.0	0.0	0.0
Prop In Lane	1.00		0.45	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	4	656	629	298	2181	0	365	364	315	4	4	0
V/C Ratio(X)	0.00	0.51	0.51	0.69	0.20	0.00	0.57	0.00	0.03	0.00	-3.11	0.00
Avail Cap(c_a), veh/h	213	1203	1155	827	3644	0	1242	1238	1071	1242	1238	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.9	12.1	19.4	3.8	0.0	17.9	0.0	16.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	2.9	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.5	2.9	1.2	0.0	2.7	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	12.5	12.7	22.3	3.9	0.0	19.3	0.0	16.3	0.0	0.0	0.0
LnGrp LOS		B	B	C	A		B		B			
Approach Vol, veh/h		656			642			215			-22	
Approach Delay, s/veh		12.6			9.8			19.1			0.0	
Approach LOS		B			A			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	23.1		14.3	0.0	35.7		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	7.6	9.6		7.2	0.0	4.6		0.0
Green Ext Time (p_c), s	0.5	6.9		0.6	0.0	7.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	131.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	310	80	60	560	120	50	40	0	10	30	90
Future Vol, veh/h	90	310	80	60	560	120	50	40	0	10	30	90
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	337	87	65	609	130	54	43	0	11	33	98

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	645	275	102	487	324	63	140	0	0	53	0	0
Stage 1	113	113	-	162	162	-	-	-	-	-	-	-
Stage 2	532	162	-	325	162	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	385	632	953	491	~ 594	1002	1443	-	-	1553	-	-
Stage 1	892	802	-	840	764	-	-	-	-	-	-	-
Stage 2	531	764	-	687	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	594	937	234	~ 558	985	1431	-	-	1540	-	-
Mov Cap-2 Maneuver	-	594	-	234	~ 558	-	-	-	-	-	-	-
Stage 1	851	790	-	802	729	-	-	-	-	-	-	-
Stage 2	~ 73	729	-	352	752	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		255.6	4.2	0.6
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1431	-	-	-	679	536	1540	-	-
HCM Lane V/C Ratio	0.038	-	-	-	0.376	1.501	0.007	-	-
HCM Control Delay (s)	7.6	-	-	-	13.5	255.6	7.4	-	-
HCM Lane LOS	A	-	-	-	B	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	1.8	40.9	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	180	910	90	50	220	690	580	70	1090	20
Future Volume (veh/h)	20	40	180	910	90	50	220	690	580	70	1090	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	43	78	989	98	16	239	750	275	76	1185	21
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	158	995	538	456	393	1084	469	313	1342	24
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.22	0.31	0.31	0.18	0.26	0.24
Sat Flow, veh/h	1774	1863	1533	3442	1863	1577	1774	3539	1530	1774	5141	91
Grp Volume(v), veh/h	22	43	78	989	98	16	239	750	275	76	781	425
Grp Sat Flow(s),veh/h/ln	1774	1863	1533	1721	1863	1577	1774	1770	1530	1774	1695	1842
Q Serve(g_s), s	1.4	2.7	6.2	36.7	5.1	0.9	15.5	23.9	19.5	4.7	28.3	28.3
Cycle Q Clear(g_c), s	1.4	2.7	6.2	36.7	5.1	0.9	15.5	23.9	19.5	4.7	28.3	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	183	192	158	995	538	456	393	1084	469	313	885	481
V/C Ratio(X)	0.12	0.22	0.49	0.99	0.18	0.04	0.61	0.69	0.59	0.24	0.88	0.88
Avail Cap(c_a), veh/h	396	416	342	995	538	456	393	1084	469	313	885	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	52.7	54.2	45.4	34.1	32.7	44.8	39.1	37.6	45.4	45.4	45.5
Incr Delay (d2), s/veh	0.1	0.2	0.9	27.0	0.1	0.0	1.9	3.6	5.3	0.1	12.4	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	2.7	21.2	2.6	0.4	7.8	12.2	8.9	2.3	14.8	17.1
LnGrp Delay(d),s/veh	52.2	52.9	55.1	72.4	34.2	32.7	46.8	42.7	42.9	45.5	57.9	65.9
LnGrp LOS	D	D	E	E	C	C	D	D	D	D	E	E
Approach Vol, veh/h		143			1103			1264			1282	
Approach Delay, s/veh		54.0			68.4			43.5			59.8	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	43.2		17.2	32.4	37.4		41.0
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.1	37.1		27.0	10.9	31.3		34.9
Max Q Clear Time (g_c+I1), s	6.7	25.9		8.2	17.5	30.3		38.7
Green Ext Time (p_c), s	0.0	1.8		0.1	0.0	0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	10	120	20	20	30	70	970	10	30	1480	350
Future Volume (veh/h)	400	10	120	20	20	30	70	970	10	30	1480	350
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	435	11	53	22	22	15	76	1054	11	33	1609	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	6	510	35	31	11	125	1972	21	73	1841	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.31	0.07	0.55	0.53	0.04	0.52	0.00
Sat Flow, veh/h	687	17	1572	0	97	33	1774	3588	37	1774	3632	0
Grp Volume(v), veh/h	446	0	53	59	0	0	76	520	545	33	1609	0
Grp Sat Flow(s),veh/h/ln	705	0	1572	130	0	0	1774	1770	1856	1774	1770	0
Q Serve(g_s), s	0.0	0.0	3.3	0.0	0.0	0.0	5.9	26.5	26.6	2.6	56.7	0.0
Cycle Q Clear(g_c), s	46.0	0.0	3.3	46.0	0.0	0.0	5.9	26.5	26.6	2.6	56.7	0.0
Prop In Lane	0.98		1.00	0.37		0.25	1.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	279	0	510	77	0	0	125	972	1020	73	1841	0
V/C Ratio(X)	1.60	0.00	0.10	0.77	0.00	0.00	0.61	0.53	0.53	0.45	0.87	0.00
Avail Cap(c_a), veh/h	279	0	510	77	0	0	138	1012	1061	138	2023	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	33.4	40.0	0.0	0.0	63.9	20.4	20.4	66.4	29.9	0.0
Incr Delay (d2), s/veh	285.6	0.0	0.0	33.0	0.0	0.0	3.8	0.2	0.2	1.6	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.0	0.0	1.5	2.3	0.0	0.0	3.0	13.1	13.7	1.3	28.7	0.0
LnGrp Delay(d),s/veh	337.6	0.0	33.5	72.9	0.0	0.0	67.8	20.6	20.6	68.0	33.9	0.0
LnGrp LOS	F		C	E			E	C	C	E	C	
Approach Vol, veh/h		499			59			1141			1642	
Approach Delay, s/veh		305.3			72.9			23.7			34.6	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	81.9		50.0	14.0	77.7		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	4.6	28.6		48.0	7.9	58.7		48.0
Green Ext Time (p_c), s	0.0	19.6		0.0	0.0	12.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	380	30	20	680	280	40	300	40	220	320	390
Future Volume (veh/h)	210	380	30	20	680	280	40	300	40	220	320	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	228	413	30	22	739	112	43	326	10	239	348	194
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	339	1520	110	26	1354	582	54	652	291	351	492	417
Arrive On Green	0.10	0.47	0.46	0.01	0.38	0.38	0.03	0.18	0.18	0.10	0.27	0.27
Sat Flow, veh/h	3343	3239	234	1774	3539	1521	1774	3539	1578	3343	1810	1533
Grp Volume(v), veh/h	228	218	225	22	739	112	43	326	10	239	348	194
Grp Sat Flow(s),veh/h/ln	1672	1719	1755	1774	1770	1521	1774	1770	1578	1672	1810	1533
Q Serve(g_s), s	4.9	5.8	5.8	0.9	12.2	3.7	1.8	6.2	0.4	5.2	13.0	7.9
Cycle Q Clear(g_c), s	4.9	5.8	5.8	0.9	12.2	3.7	1.8	6.2	0.4	5.2	13.0	7.9
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	807	823	26	1354	582	54	652	291	351	492	417
V/C Ratio(X)	0.67	0.27	0.27	0.84	0.55	0.19	0.79	0.50	0.03	0.68	0.71	0.47
Avail Cap(c_a), veh/h	1339	838	855	711	1725	741	711	1465	653	1339	749	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	12.1	12.1	36.8	18.0	15.4	36.1	27.4	25.1	32.3	24.6	22.7
Incr Delay (d2), s/veh	2.3	0.2	0.2	47.7	0.3	0.2	22.0	0.6	0.0	2.3	1.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.8	2.9	0.8	6.0	1.6	1.2	3.1	0.2	2.5	6.7	3.4
LnGrp Delay(d),s/veh	34.8	12.3	12.3	84.5	18.4	15.6	58.1	28.0	25.1	34.6	26.5	23.5
LnGrp LOS	C	B	B	F	B	B	E	C	C	C	C	C
Approach Vol, veh/h		671			873			379			781	
Approach Delay, s/veh		19.9			19.7			31.4			28.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	39.1	6.3	24.4	11.6	32.6	11.9	18.8
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	2.9	7.8	3.8	15.0	6.9	14.2	7.2	8.2
Green Ext Time (p_c), s	0.0	9.3	0.1	4.0	0.7	8.4	0.7	4.6

Intersection Summary		
HCM 2010 Ctrl Delay		23.9
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	80	20	30	80	50	20	160	20	60	230	370
Future Volume (veh/h)	220	80	20	30	80	50	20	160	20	60	230	370
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1830	1900
Adj Flow Rate, veh/h	239	87	8	33	87	9	22	174	15	65	250	237
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	311	949	86	65	485	49	47	803	69	135	480	418
Arrive On Green	0.18	0.29	0.27	0.04	0.15	0.13	0.03	0.24	0.24	0.08	0.28	0.30
Sat Flow, veh/h	1774	3282	298	1774	3229	328	1774	3301	282	1723	1738	1515
Grp Volume(v), veh/h	239	46	49	33	47	49	22	93	96	65	250	237
Grp Sat Flow(s),veh/h/ln	1774	1770	1810	1774	1770	1788	1774	1770	1813	1723	1738	1515
Q Serve(g_s), s	6.6	1.0	1.0	0.9	1.2	1.2	0.6	2.1	2.2	1.8	6.2	6.8
Cycle Q Clear(g_c), s	6.6	1.0	1.0	0.9	1.2	1.2	0.6	2.1	2.2	1.8	6.2	6.8
Prop In Lane	1.00		0.16	1.00		0.18	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	311	512	523	65	266	269	47	430	441	135	480	418
V/C Ratio(X)	0.77	0.09	0.09	0.51	0.18	0.18	0.47	0.21	0.22	0.48	0.52	0.57
Avail Cap(c_a), veh/h	1911	1248	1276	521	1248	1260	521	1213	1243	540	1191	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	13.3	13.3	24.1	18.9	19.0	24.5	15.4	15.4	22.5	15.6	15.4
Incr Delay (d2), s/veh	4.0	0.1	0.1	6.0	0.3	0.3	7.3	0.2	0.2	2.6	0.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.5	0.5	0.6	0.6	0.6	0.4	1.1	1.1	1.0	3.1	2.9
LnGrp Delay(d),s/veh	24.1	13.3	13.4	30.2	19.2	19.4	31.8	15.7	15.7	25.1	16.5	16.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		334			129			211			552	
Approach Delay, s/veh		21.0			22.1			17.4			17.6	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	17.4	6.9	18.8	6.3	19.1	14.0	11.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	13.8	4.2	2.9	3.0	2.6	8.8	8.6	3.2
Green Ext Time (p_c), s	0.1	4.2	0.0	1.0	0.0	4.1	0.7	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	180	30	100	300	20	50	170	130	20	130	220
Future Volume (veh/h)	140	180	30	100	300	20	50	170	130	20	130	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	196	10	109	326	19	54	185	34	22	141	54
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	255	493	419	229	848	49	185	478	401	126	416	344
Arrive On Green	0.15	0.27	0.27	0.13	0.26	0.22	0.10	0.26	0.26	0.07	0.22	0.22
Sat Flow, veh/h	1723	1810	1538	1723	3294	191	1774	1863	1560	1774	1863	1543
Grp Volume(v), veh/h	152	196	10	109	169	176	54	185	34	22	141	54
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1766	1774	1863	1560	1774	1863	1543
Q Serve(g_s), s	4.9	5.3	0.3	3.5	4.9	4.9	1.7	4.9	1.0	0.7	3.8	1.7
Cycle Q Clear(g_c), s	4.9	5.3	0.3	3.5	4.9	4.9	1.7	4.9	1.0	0.7	3.8	1.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	493	419	229	442	454	185	478	401	126	416	344
V/C Ratio(X)	0.60	0.40	0.02	0.48	0.38	0.39	0.29	0.39	0.08	0.17	0.34	0.16
Avail Cap(c_a), veh/h	1036	1239	1053	489	922	947	326	1742	1459	326	1120	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	17.8	16.0	24.0	18.3	18.4	24.8	18.4	16.9	26.2	19.5	18.7
Incr Delay (d2), s/veh	2.2	0.5	0.0	1.5	0.5	0.5	0.9	0.5	0.1	0.7	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.7	0.1	1.8	2.4	2.5	0.9	2.6	0.4	0.4	2.0	0.7
LnGrp Delay(d),s/veh	26.1	18.3	16.0	25.6	18.9	19.0	25.6	18.9	17.0	26.8	20.0	18.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		358			454			273			217	
Approach Delay, s/veh		21.5			20.5			20.0			20.4	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	20.3	10.2	17.4	12.9	19.4	8.2	19.4
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	5.5	7.3	3.7	5.8	6.9	6.9	2.7	6.9
Green Ext Time (p_c), s	0.2	3.3	0.0	2.1	0.4	3.1	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	490	170	210	710	10	240	10	210	20	10	30
Future Volume (veh/h)	10	490	170	210	710	10	240	10	210	20	10	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	0.95		0.95	0.95		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	533	155	228	772	11	261	11	82	22	11	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	34	1038	300	286	1885	27	460	551	444	446	234	255
Arrive On Green	0.02	0.40	0.37	0.17	0.54	0.52	0.30	0.30	0.30	0.30	0.30	0.28
Sat Flow, veh/h	1723	2611	756	1723	3466	49	1315	1863	1501	1239	790	862
Grp Volume(v), veh/h	11	350	338	228	383	400	261	11	82	22	0	23
Grp Sat Flow(s),veh/h/ln	1723	1719	1648	1723	1719	1797	1315	1863	1501	1239	0	1653
Q Serve(g_s), s	0.5	13.1	13.4	10.8	11.1	11.2	15.1	0.4	3.5	1.1	0.0	0.9
Cycle Q Clear(g_c), s	0.5	13.1	13.4	10.8	11.1	11.2	15.9	0.4	3.5	1.4	0.0	0.9
Prop In Lane	1.00		0.46	1.00		0.03	1.00		1.00	1.00		0.52
Lane Grp Cap(c), veh/h	34	684	655	286	935	977	460	551	444	446	0	489
V/C Ratio(X)	0.32	0.51	0.52	0.80	0.41	0.41	0.57	0.02	0.18	0.05	0.00	0.05
Avail Cap(c_a), veh/h	627	1048	1005	424	935	977	703	896	722	675	0	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	19.4	19.9	34.2	11.4	11.4	27.1	21.3	22.4	21.8	0.0	21.6
Incr Delay (d2), s/veh	5.3	1.3	1.3	6.4	0.6	0.6	1.1	0.0	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.5	6.3	5.6	5.4	5.6	5.6	0.2	1.5	0.4	0.0	0.4
LnGrp Delay(d),s/veh	46.6	20.7	21.2	40.5	12.0	12.0	28.2	21.3	22.6	21.8	0.0	21.7
LnGrp LOS	D	C	C	D	B	B	C	C	C	C		C
Approach Vol, veh/h		699			1011			354			45	
Approach Delay, s/veh		21.3			18.5			26.7			21.8	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.1	37.9		29.2	5.7	50.4		29.2
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	12.8	15.4		3.4	2.5	13.2		17.9
Green Ext Time (p_c), s	0.4	16.5		1.4	0.0	18.1		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	400	20	100	680	130	40	100	100	110	100	80
Future Volume (veh/h)	20	400	20	100	680	130	40	100	100	110	100	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	435	20	109	739	82	43	109	16	120	109	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	1321	61	171	1569	687	366	384	304	220	231	197
Arrive On Green	0.04	0.38	0.36	0.10	0.44	0.44	0.21	0.21	0.21	0.12	0.12	0.00
Sat Flow, veh/h	1774	3443	158	1774	3539	1549	1774	1863	1475	1774	1863	1583
Grp Volume(v), veh/h	22	223	232	109	739	82	43	109	16	120	109	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1832	1774	1770	1549	1774	1863	1475	1774	1863	1583
Q Serve(g_s), s	1.0	7.5	7.6	5.0	12.4	2.6	1.7	4.2	0.7	5.4	4.6	0.0
Cycle Q Clear(g_c), s	1.0	7.5	7.6	5.0	12.4	2.6	1.7	4.2	0.7	5.4	4.6	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	679	703	171	1569	687	366	384	304	220	231	197
V/C Ratio(X)	0.34	0.33	0.33	0.64	0.47	0.12	0.12	0.28	0.05	0.54	0.47	0.00
Avail Cap(c_a), veh/h	231	963	997	546	2555	1118	756	794	628	546	573	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.7	18.4	18.4	36.7	16.5	13.8	27.3	28.3	26.9	34.8	34.4	0.0
Incr Delay (d2), s/veh	3.0	0.6	0.6	3.9	0.5	0.2	0.1	0.4	0.1	2.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.8	3.9	2.6	6.2	1.1	0.8	2.2	0.3	2.8	2.5	0.0
LnGrp Delay(d),s/veh	42.7	19.0	19.0	40.6	17.0	14.0	27.4	28.7	27.0	36.9	35.9	0.0
LnGrp LOS	D	B	B	D	B	B	C	C	C	D	D	
Approach Vol, veh/h		477			930			168			229	
Approach Delay, s/veh		20.1			19.5			28.2			36.4	
Approach LOS		C			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	36.4		14.5	7.1	41.5		21.4
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	7.0	9.6		7.4	3.0	14.4		6.2
Green Ext Time (p_c), s	0.2	18.5		0.8	0.0	21.1		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		22.6
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	100	40	260	220	20	70	280	210	10	540	250
Future Volume (veh/h)	120	100	40	260	220	20	70	280	210	10	540	250
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	130	109	5	283	239	0	76	304	129	11	587	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	653	30	346	511	434	330	818	339	94	1153	0
Arrive On Green	0.11	0.19	0.19	0.20	0.27	0.00	0.34	0.34	0.34	0.34	0.34	0.00
Sat Flow, veh/h	1774	3443	157	1774	1863	1583	823	2436	1011	20	3518	0
Grp Volume(v), veh/h	130	56	58	283	239	0	76	219	214	320	278	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1830	1774	1863	1583	823	1770	1677	1843	1610	0
Q Serve(g_s), s	3.0	1.1	1.1	6.6	4.6	0.0	3.5	4.0	4.2	0.0	5.9	0.0
Cycle Q Clear(g_c), s	3.0	1.1	1.1	6.6	4.6	0.0	9.4	4.0	4.2	5.9	5.9	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.60	0.03		0.00
Lane Grp Cap(c), veh/h	195	335	347	346	511	434	330	594	563	706	541	0
V/C Ratio(X)	0.67	0.17	0.17	0.82	0.47	0.00	0.23	0.37	0.38	0.45	0.51	0.00
Avail Cap(c_a), veh/h	827	1238	1280	1241	1737	1476	649	1279	1212	1403	1164	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.3	14.5	14.6	16.5	13.0	0.0	15.2	10.8	10.9	11.4	11.4	0.0
Incr Delay (d2), s/veh	1.5	0.1	0.1	1.8	0.2	0.0	0.1	0.1	0.2	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.5	0.6	3.3	2.4	0.0	0.8	2.0	1.9	3.1	2.7	0.0
LnGrp Delay(d),s/veh	19.8	14.6	14.6	18.4	13.2	0.0	15.4	10.9	11.0	11.6	11.7	0.0
LnGrp LOS	B	B	B	B	B		B	B	B	B	B	
Approach Vol, veh/h		244			522			509			598	
Approach Delay, s/veh		17.4			16.0			11.6			11.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	12.1		18.4	8.7	15.8		18.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	8.6	3.1		7.9	5.0	6.6		11.4
Green Ext Time (p_c), s	0.1	0.6		2.3	0.0	0.6		2.3

Intersection Summary		
HCM 2010 Ctrl Delay		13.6
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	170	110	370	400	30	110	410	380	70	630	200
Future Volume (veh/h)	70	170	110	370	400	30	110	410	380	70	630	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	76	185	35	402	435	12	120	446	134	76	685	183
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	118	511	95	457	1286	573	167	1148	504	114	1179	311
Arrive On Green	0.07	0.17	0.16	0.26	0.36	0.36	0.10	0.33	0.33	0.07	0.30	0.29
Sat Flow, veh/h	1774	2971	550	1774	3539	1577	1723	3438	1509	1723	3890	1024
Grp Volume(v), veh/h	76	109	111	402	435	12	120	446	134	76	578	290
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1770	1577	1723	1719	1509	1723	1647	1621
Q Serve(g_s), s	3.9	5.1	5.3	20.5	8.4	0.5	6.4	9.3	6.1	4.1	14.0	14.4
Cycle Q Clear(g_c), s	3.9	5.1	5.3	20.5	8.4	0.5	6.4	9.3	6.1	4.1	14.0	14.4
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	118	304	301	457	1286	573	167	1148	504	114	998	492
V/C Ratio(X)	0.64	0.36	0.37	0.88	0.34	0.02	0.72	0.39	0.27	0.66	0.58	0.59
Avail Cap(c_a), veh/h	584	677	670	584	1354	603	714	2045	898	201	998	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	34.4	34.7	33.5	21.8	19.2	41.2	24.0	22.9	42.9	27.7	28.3
Incr Delay (d2), s/veh	5.8	0.7	0.8	12.0	0.2	0.0	2.1	0.2	0.3	2.5	1.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.6	2.6	11.6	4.1	0.2	3.1	4.4	2.6	2.0	6.5	6.8
LnGrp Delay(d),s/veh	48.6	35.1	35.4	45.5	21.9	19.2	43.4	24.2	23.2	45.4	29.1	31.2
LnGrp LOS	D	D	D	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		296			849			700			944	
Approach Delay, s/veh		38.7			33.0			27.3			31.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	35.4	28.3	20.2	13.1	32.5	10.3	38.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5
Max Q Clear Time (g_c+I1), s	6.1	11.3	22.5	7.3	8.4	16.4	5.9	10.4
Green Ext Time (p_c), s	0.0	18.6	0.8	4.4	0.2	7.5	0.2	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	0	20	10	20	30	20	210	0	0	190	140
Future Vol, veh/h	80	0	20	10	20	30	20	210	0	0	190	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	87	0	22	11	22	33	22	228	0	0	207	152
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.6	8.8	9.5	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	0%	80%	17%	0%	0%
Vol Thru, %	78%	100%	0%	33%	100%	0%
Vol Right, %	0%	0%	20%	50%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	140	100	60	190	140
LT Vol	20	0	80	10	0	0
Through Vol	70	140	0	20	190	0
RT Vol	0	0	20	30	0	140
Lane Flow Rate	98	152	109	65	207	152
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.148	0.226	0.165	0.094	0.304	0.194
Departure Headway (Hd)	5.452	5.34	5.474	5.199	5.302	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	653	668	650	682	673	775
Service Time	3.223	3.111	3.55	3.283	3.067	2.361
HCM Lane V/C Ratio	0.15	0.228	0.168	0.095	0.308	0.196
HCM Control Delay	9.2	9.7	9.6	8.8	10.4	8.5
HCM Lane LOS	A	A	A	A	B	A
HCM 95th-tile Q	0.5	0.9	0.6	0.3	1.3	0.7

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	20	10	10	20	0
Future Vol, veh/h	170	20	10	10	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	185	22	11	11	22	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	55	11	22	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	941	1058	1593	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	934	1058	1593	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1593	-	934	1058	-	-
HCM Lane V/C Ratio	0.007	-	0.198	0.021	-	-
HCM Control Delay (s)	7.3	0	9.8	8.5	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	230	70	220	360	70	80	350	140	50	650	120
Future Volume (veh/h)	110	230	70	220	360	70	80	350	140	50	650	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	120	250	52	239	391	18	87	380	61	54	707	118
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	183	585	119	309	963	414	140	1303	576	98	1045	174
Arrive On Green	0.10	0.20	0.18	0.17	0.27	0.27	0.08	0.38	0.38	0.06	0.35	0.34
Sat Flow, veh/h	1774	2914	595	1774	3539	1520	1723	3438	1521	1723	2947	492
Grp Volume(v), veh/h	120	150	152	239	391	18	87	380	61	54	412	413
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1770	1520	1723	1719	1521	1723	1719	1720
Q Serve(g_s), s	5.5	6.3	6.5	10.9	7.7	0.7	4.1	6.5	2.2	2.6	17.2	17.3
Cycle Q Clear(g_c), s	5.5	6.3	6.5	10.9	7.7	0.7	4.1	6.5	2.2	2.6	17.2	17.3
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	183	356	349	309	963	414	140	1303	576	98	610	610
V/C Ratio(X)	0.65	0.42	0.44	0.77	0.41	0.04	0.62	0.29	0.11	0.55	0.68	0.68
Avail Cap(c_a), veh/h	427	666	655	484	1446	621	203	1961	867	218	994	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	29.5	29.9	33.4	25.2	22.7	37.7	18.4	17.0	38.9	23.2	23.4
Incr Delay (d2), s/veh	3.9	0.8	0.9	4.1	0.3	0.0	4.5	0.1	0.1	4.8	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.1	3.2	5.7	3.8	0.3	2.1	3.1	0.9	1.4	8.4	8.4
LnGrp Delay(d),s/veh	40.4	30.3	30.7	37.5	25.5	22.8	42.1	18.5	17.1	43.6	24.5	24.7
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		422			648			528			879	
Approach Delay, s/veh		33.4			29.8			22.2			25.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	21.0	10.9	34.0	12.8	27.0	8.8	36.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.6	30.4	8.5	47.5	18.9	33.1	9.2	46.8
Max Q Clear Time (g_c+I1), s	12.9	8.5	6.1	19.3	7.5	9.7	4.6	8.5
Green Ext Time (p_c), s	0.4	4.4	0.0	9.1	0.2	4.4	0.0	9.8

Intersection Summary		
HCM 2010 Ctrl Delay		27.4
HCM 2010 LOS		C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	840	1080	20	30	600
Future Volume (vph)	210	840	1080	20	30	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3429		1770	1583
Flt Permitted	0.15	1.00	1.00		0.95	1.00
Satd. Flow (perm)	263	3438	3429		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	913	1174	22	33	652
RTOR Reduction (vph)	0	0	1	0	0	380
Lane Group Flow (vph)	228	913	1195	0	33	272
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	59.2	63.8	48.2		18.4	18.4
Effective Green, g (s)	60.4	64.4	48.8		18.6	18.6
Actuated g/C Ratio	0.66	0.71	0.54		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	360	2433	1838		361	323
v/s Ratio Prot	c0.08	0.27	c0.35		0.02	
v/s Ratio Perm	0.34					c0.17
v/c Ratio	0.63	0.38	0.65		0.09	0.84
Uniform Delay, d1	10.1	5.3	15.0		29.3	34.8
Progression Factor	1.13	0.30	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.1	0.8		0.0	17.2
Delay (s)	13.9	1.7	15.9		29.4	52.0
Level of Service	B	A	B		C	D
Approach Delay (s)		4.1	15.9		50.9	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	220	20	1010	460	320	20	320	960	170	280	20
Future Volume (veh/h)	30	220	20	1010	460	320	20	320	960	170	280	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	33	239	18	1098	500	0	22	348	802	185	304	19
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	79	580	43	1198	1690	756	71	837	1629	315	975	61
Arrive On Green	0.04	0.17	0.16	0.36	0.49	0.00	0.04	0.24	0.24	0.09	0.30	0.28
Sat Flow, veh/h	1774	3339	250	3343	3438	1538	1723	3438	2707	3343	3288	205
Grp Volume(v), veh/h	33	126	131	1098	500	0	22	348	802	185	158	165
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1672	1719	1538	1723	1719	1354	1672	1719	1773
Q Serve(g_s), s	2.3	8.0	8.1	39.8	11.0	0.0	1.6	10.8	21.2	6.7	9.0	9.1
Cycle Q Clear(g_c), s	2.3	8.0	8.1	39.8	11.0	0.0	1.6	10.8	21.2	6.7	9.0	9.1
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	79	307	316	1198	1690	756	71	837	1629	315	510	526
V/C Ratio(X)	0.42	0.41	0.42	0.92	0.30	0.00	0.31	0.42	0.49	0.59	0.31	0.31
Avail Cap(c_a), veh/h	154	643	660	1214	2198	983	354	977	1739	818	556	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	46.6	46.7	38.8	19.2	0.0	59.0	40.3	14.3	55.0	34.5	34.7
Incr Delay (d2), s/veh	1.3	1.9	1.9	11.4	0.2	0.0	0.9	0.3	0.2	3.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.1	4.2	20.2	5.3	0.0	0.8	5.2	7.9	3.3	4.4	4.5
LnGrp Delay(d),s/veh	60.3	48.4	48.6	50.2	19.4	0.0	59.9	40.7	14.5	58.7	34.9	35.0
LnGrp LOS	E	D	D	D	B		E	D	B	E	C	C
Approach Vol, veh/h		290			1598			1172			508	
Approach Delay, s/veh		49.8			40.6			23.1			43.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.4	26.5	9.2	41.6	9.6	66.3	15.9	34.9
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	41.8	10.1	3.6	11.1	4.3	13.0	8.7	23.2
Green Ext Time (p_c), s	1.6	10.4	0.0	8.9	0.0	11.9	1.2	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	570	80	180	40	900	280	230	1120	20
Future Volume (veh/h)	0	0	20	570	80	180	40	900	280	230	1120	20
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				682	0	114	43	978	0	250	1217	21
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				898	0	395	284	1586	674	295	2292	40
Arrive On Green				0.25	0.00	0.25	0.43	0.43	0.00	0.17	0.64	0.64
Sat Flow, veh/h				3548	0	1561	448	3725	1583	1774	3560	61
Grp Volume(v), veh/h				682	0	114	43	978	0	250	605	633
Grp Sat Flow(s),veh/h/ln				1774	0	1561	448	1863	1583	1774	1770	1852
Q Serve(g_s), s				13.8	0.0	4.6	4.7	15.8	0.0	10.6	14.3	14.3
Cycle Q Clear(g_c), s				13.8	0.0	4.6	4.7	15.8	0.0	10.6	14.3	14.3
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h				898	0	395	284	1586	674	295	1139	1192
V/C Ratio(X)				0.76	0.00	0.29	0.15	0.62	0.00	0.85	0.53	0.53
Avail Cap(c_a), veh/h				1649	0	725	417	2694	1145	366	1736	1817
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				26.8	0.0	23.3	14.1	17.3	0.0	31.3	7.5	7.5
Incr Delay (d2), s/veh				0.5	0.0	0.1	0.1	0.1	0.0	15.4	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.8	0.0	2.0	0.6	8.0	0.0	6.5	6.9	7.3
LnGrp Delay(d),s/veh				27.3	0.0	23.5	14.2	17.5	0.0	46.7	7.6	7.6
LnGrp LOS				C		C	B	B		D	A	A
Approach Vol, veh/h					796			1021			1488	
Approach Delay, s/veh					26.7			17.3			14.2	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.9	37.0				53.9		23.6
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	12.6	17.8				16.3		15.8
Green Ext Time (p_c), s	0.4	15.1				16.9		1.5

Intersection Summary			
HCM 2010 Ctrl Delay			18.2
HCM 2010 LOS			B

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	790	0	0	430	750	960
Future Volume (vph)	790	0	0	430	750	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	859	0	0	467	815	1043
RTOR Reduction (vph)	0	0	0	83	0	599
Lane Group Flow (vph)	859	0	0	384	815	444
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	16.2			17.7	17.7	18.7
Effective Green, g (s)	17.2			18.7	18.7	18.7
Actuated g/C Ratio	0.39			0.43	0.43	0.43
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1955			1187	1462	1187
v/s Ratio Prot	c0.17			0.14	c0.24	0.16
v/s Ratio Perm						
v/c Ratio	0.44			0.32	0.56	0.37
Uniform Delay, d1	9.8			8.4	9.5	8.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.2	0.5	0.2
Delay (s)	10.0			8.5	9.9	8.8
Level of Service	A			A	A	A
Approach Delay (s)		10.0	8.5		9.3	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	580	620	340	290	640	250	590	270	250	210	400	750
Future Volume (veh/h)	580	620	340	290	640	250	590	270	250	210	400	750
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	630	674	321	315	696	0	641	293	143	228	435	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	371	565	269	302	1067	477	371	423	201	504	471	0
Arrive On Green	0.11	0.24	0.24	0.18	0.31	0.00	0.21	0.18	0.18	0.29	0.26	0.00
Sat Flow, veh/h	3442	2328	1109	1723	3438	1538	1774	2328	1109	1723	1810	0
Grp Volume(v), veh/h	630	512	483	315	696	0	641	221	215	228	435	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1667	1723	1719	1538	1774	1770	1667	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	26.0	0.0	31.0	17.3	18.0	16.0	34.7	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	26.0	0.0	31.0	17.3	18.0	16.0	34.7	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	371	430	405	302	1067	477	371	321	303	504	471	0
V/C Ratio(X)	1.70	1.19	1.19	1.04	0.65	0.00	1.73	0.69	0.71	0.45	0.92	0.00
Avail Cap(c_a), veh/h	371	430	405	302	1067	477	371	549	517	504	500	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	66.1	56.1	56.4	61.1	44.2	0.0	58.6	56.7	57.3	42.8	53.4	0.0
Incr Delay (d2), s/veh	324.6	107.4	108.5	63.2	2.7	0.0	338.7	9.1	10.6	0.2	25.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	30.4	28.7	17.6	12.8	0.0	50.0	9.3	9.2	7.6	20.7	0.0
LnGrp Delay(d),s/veh	390.8	163.6	164.9	124.3	46.9	0.0	397.3	65.9	67.9	43.0	78.8	0.0
LnGrp LOS	F	F	F	F	D		F	E	E	D	E	
Approach Vol, veh/h		1625			1011			1077			663	
Approach Delay, s/veh		252.0			71.0			263.6			66.5	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	35.0	43.3	20.0	50.0	47.3	30.9
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	18.0	38.0	33.0	36.7	18.0	28.0	18.0	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	15.2	2.6	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	184.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	830	0	0	1010	70	70	610	110	0	0	0
Future Volume (veh/h)	240	830	0	0	1010	70	70	610	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	261	902	0	0	1098	71	76	663	41			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	333	2359	0	0	1773	115	434	865	377			
Arrive On Green	0.19	1.00	0.00	0.00	0.53	0.52	0.24	0.24	0.24			
Sat Flow, veh/h	3442	3632	0	0	3468	218	1774	3539	1541			
Grp Volume(v), veh/h	261	902	0	0	575	594	76	663	41			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1824	1774	1770	1541			
Q Serve(g_s), s	6.5	0.0	0.0	0.0	20.6	20.6	3.0	15.7	1.9			
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.0	20.6	20.6	3.0	15.7	1.9			
Prop In Lane	1.00		0.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	333	2359	0	0	930	958	434	865	377			
V/C Ratio(X)	0.78	0.38	0.00	0.00	0.62	0.62	0.18	0.77	0.11			
Avail Cap(c_a), veh/h	344	2359	0	0	930	958	552	1101	479			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	35.4	0.0	0.0	0.0	15.0	15.1	26.8	31.6	26.4			
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	3.1	3.0	0.2	2.7	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.0	10.7	11.2	1.5	8.0	0.8			
LnGrp Delay(d),s/veh	36.5	0.0	0.0	0.0	18.1	18.1	27.1	34.3	26.5			
LnGrp LOS	D	A			B	B	C	C	C			
Approach Vol, veh/h		1163			1169			780				
Approach Delay, s/veh		8.2			18.1			33.2				
Approach LOS		A			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.0			12.7	51.3		26.0
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		53.1			* 8.8	40.1		27.8
Max Q Clear Time (g_c+I1), s		2.0			8.5	22.6		17.7
Green Ext Time (p_c), s		27.6			0.0	13.4		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	850	80	150	930	0	0	0	0	210	1290	490
Future Volume (veh/h)	0	850	80	150	930	0	0	0	0	210	1290	490
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	924	0	163	1011	0				228	1402	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1060	0	198	1612	0				219	1425	721
Arrive On Green	0.00	0.30	0.00	0.22	0.91	0.00				0.46	0.46	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				481	3127	1583
Grp Volume(v), veh/h	0	924	0	163	1011	0				871	759	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1839	1770	1583
Q Serve(g_s), s	0.0	22.3	0.0	7.9	5.3	0.0				41.0	36.8	0.0
Cycle Q Clear(g_c), s	0.0	22.3	0.0	7.9	5.3	0.0				41.0	36.8	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.26		1.00
Lane Grp Cap(c), veh/h	0	1060	0	198	1612	0				838	806	721
V/C Ratio(X)	0.00	0.87	0.00	0.82	0.63	0.00				1.04	0.94	0.00
Avail Cap(c_a), veh/h	0	1060	0	256	1612	0				838	806	721
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.72	0.72	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.9	0.0	34.1	2.4	0.0				24.5	23.3	0.0
Incr Delay (d2), s/veh	0.0	9.8	0.0	12.3	1.3	0.0				42.0	19.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.4	0.0	4.5	2.3	0.0				30.5	22.2	0.0
LnGrp Delay(d),s/veh	0.0	39.7	0.0	46.4	3.8	0.0				66.5	42.3	0.0
LnGrp LOS		D		D	A					F	D	
Approach Vol, veh/h		924			1174						1630	
Approach Delay, s/veh		39.7			9.7						55.3	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.0	31.0		45.0		45.0		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 13	23.1		* 41		40.1		
Max Q Clear Time (g_c+I1), s	9.9	24.3		43.0		7.3		
Green Ext Time (p_c), s	0.1	0.0		0.0		20.4		

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	550	290	570	390	110	260	940	670	120	630	140
Future Volume (veh/h)	230	550	290	570	390	110	260	940	670	120	630	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	598	190	620	424	103	283	1022	406	130	685	140
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	316	767	342	686	917	221	313	1244	557	160	775	158
Arrive On Green	0.09	0.22	0.22	0.21	0.33	0.32	0.18	0.35	0.35	0.09	0.26	0.25
Sat Flow, veh/h	3343	3438	1534	3343	2749	662	1774	3539	1583	1774	2927	598
Grp Volume(v), veh/h	250	598	190	620	264	263	283	1022	406	130	414	411
Grp Sat Flow(s),veh/h/ln	1672	1719	1534	1672	1719	1693	1774	1770	1583	1774	1770	1755
Q Serve(g_s), s	9.0	20.1	13.5	22.2	14.8	15.1	19.2	32.3	27.5	8.8	27.6	27.6
Cycle Q Clear(g_c), s	9.0	20.1	13.5	22.2	14.8	15.1	19.2	32.3	27.5	8.8	27.6	27.6
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	316	767	342	686	573	565	313	1244	557	160	469	465
V/C Ratio(X)	0.79	0.78	0.56	0.90	0.46	0.47	0.90	0.82	0.73	0.81	0.88	0.88
Avail Cap(c_a), veh/h	572	1008	450	844	574	565	448	1244	557	448	519	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	44.9	42.3	47.6	32.2	32.5	49.5	36.3	34.7	54.9	43.3	43.5
Incr Delay (d2), s/veh	3.3	2.0	0.5	10.2	0.2	0.2	13.3	4.5	4.8	3.8	15.3	15.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	9.8	5.8	11.2	7.1	7.1	10.6	16.5	12.8	4.5	15.5	15.4
LnGrp Delay(d),s/veh	57.7	46.9	42.8	57.9	32.4	32.7	62.8	40.8	39.6	58.6	58.6	59.1
LnGrp LOS	E	D	D	E	C	C	E	D	D	E	E	E
Approach Vol, veh/h		1038			1147			1711			955	
Approach Delay, s/veh		48.8			46.2			44.2			58.8	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	47.2	29.2	31.4	25.7	36.5	15.6	45.0
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	10.8	34.3	24.2	22.1	21.2	29.6	11.0	17.1
Green Ext Time (p_c), s	0.1	0.3	0.8	3.8	0.3	1.6	0.4	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	190.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	110	40	110	230	0	0	0	0	690	0	50
Future Vol, veh/h	0	110	40	110	230	0	0	0	0	690	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	116	42	116	242	0	0	0	0	726	0	53

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	116	0	0				590	590	242
Stage 1	-	-	-	-	-	-				474	474	-
Stage 2	-	-	-	-	-	-				116	116	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1473	-	0				~ 470	420	797
Stage 1	0	-	-	-	-	0				~ 626	558	-
Stage 2	0	-	-	-	-	0				909	800	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1473	-	-				~ 433	0	797
Mov Cap-2 Maneuver	-	-	-	-	-	-				~ 433	0	-
Stage 1	-	-	-	-	-	-				~ 577	0	-
Stage 2	-	-	-	-	-	-				909	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	$ 315.4
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1473	-	433	797
HCM Lane V/C Ratio	-	-	0.079	-	1.677	0.066
HCM Control Delay (s)	-	-	7.7	-	$ 337.5	9.8
HCM Lane LOS	-	-	A	-	F	A
HCM 95th %tile Q(veh)	-	-	0.3	-	43	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	780	0	0	190	460	150	0	70	0	0	0
Future Vol, veh/h	20	780	0	0	190	460	150	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	821	0	0	200	484	158	0	74	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	200	0	-	-	-	0	1063	1063	821
Stage 1	-	-	-	-	-	-	863	863	-
Stage 2	-	-	-	-	-	-	200	200	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1372	-	0	0	-	-	247	223	374
Stage 1	-	-	0	0	-	-	413	372	-
Stage 2	-	-	0	0	-	-	834	736	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1372	-	-	-	-	-	243	0	374
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	0	-
Stage 1	-	-	-	-	-	-	407	0	-
Stage 2	-	-	-	-	-	-	834	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	35.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	243	374	1372	-	-	-
HCM Lane V/C Ratio	0.65	0.197	0.015	-	-	-
HCM Control Delay (s)	43.7	17	7.7	-	-	-
HCM Lane LOS	E	C	A	-	-	-
HCM 95th %tile Q(veh)	4	0.7	0	-	-	-

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	320	0	0	260	180	10	10	230	0	0	0
Future Vol, veh/h	20	320	0	0	260	180	10	10	230	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	337	0	0	274	189	11	11	242	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.5	13	12.8
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	230	20	160	160	260	180
LT Vol	10	0	20	0	0	0	0
Through Vol	10	0	0	160	160	260	0
RT Vol	0	230	0	0	0	0	180
Lane Flow Rate	21	242	21	168	168	274	189
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.041	0.408	0.041	0.304	0.222	0.475	0.291
Departure Headway (Hd)	7.021	6.064	7.003	6.496	4.737	6.242	5.532
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	508	591	510	551	753	575	648
Service Time	4.785	3.828	4.766	4.259	2.499	3.998	3.288
HCM Lane V/C Ratio	0.041	0.409	0.041	0.305	0.223	0.477	0.292
HCM Control Delay	10.1	13	10.1	12.1	8.9	14.6	10.6
HCM Lane LOS	B	B	B	B	A	B	B
HCM 95th-tile Q	0.1	2	0.1	1.3	0.8	2.5	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	470	0	0	0	350	80	0	0	140	90
Future Volume (veh/h)	80	0	470	0	0	0	350	80	0	0	140	90
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	86	0	63				376	86	0	0	151	21
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	142	0	126				472	1188	0	0	430	365
Arrive On Green	0.08	0.00	0.08				0.27	0.64	0.00	0.00	0.23	0.23
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	86	0	63				376	86	0	0	151	21
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	1.3	0.0	1.1				5.6	0.5	0.0	0.0	1.9	0.3
Cycle Q Clear(g_c), s	1.3	0.0	1.1				5.6	0.5	0.0	0.0	1.9	0.3
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	142	0	126				472	1188	0	0	430	365
V/C Ratio(X)	0.61	0.00	0.50				0.80	0.07	0.00	0.00	0.35	0.06
Avail Cap(c_a), veh/h	1503	0	1341				1265	3964	0	0	3964	3369
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	12.5				9.7	1.9	0.0	0.0	9.1	8.5
Incr Delay (d2), s/veh	1.6	0.0	1.1				1.2	0.1	0.0	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.0				2.9	0.3	0.0	0.0	1.0	0.1
LnGrp Delay(d),s/veh	14.2	0.0	13.6				10.9	2.0	0.0	0.0	9.7	8.6
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		149						462			172	
Approach Delay, s/veh		13.9						9.2			9.5	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		22.1		6.3	11.5	10.5		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.5		3.3	7.6	3.9		
Green Ext Time (p_c), s		2.3		0.1	0.1	2.3		

Intersection Summary		
HCM 2010 Ctrl Delay		10.2
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	109.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	320	20	0	10	30	10	10	20	10	10	30	850
Future Vol, veh/h	320	20	0	10	30	10	10	20	10	10	30	850
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	348	22	0	11	33	11	11	22	11	11	33	924
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	21.2	11.2	10.3	153.5
HCM LOS	C	B	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	94%	20%	1%
Vol Thru, %	50%	6%	60%	3%
Vol Right, %	25%	0%	20%	96%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	340	50	890
LT Vol	10	320	10	10
Through Vol	20	20	30	30
RT Vol	10	0	10	850
Lane Flow Rate	43	370	54	967
Geometry Grp	1	1	1	1
Degree of Util (X)	0.076	0.637	0.1	1.281
Departure Headway (Hd)	6.79	6.872	7.413	4.767
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	531	528	486	755
Service Time	4.79	4.872	5.413	2.849
HCM Lane V/C Ratio	0.081	0.701	0.111	1.281
HCM Control Delay	10.3	21.2	11.2	153.5
HCM Lane LOS	B	C	B	F
HCM 95th-tile Q	0.2	4.4	0.3	36

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	80	30	370	170	10	20	10	180	10	20	20
Future Vol, veh/h	10	80	30	370	170	10	20	10	180	10	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	87	33	402	185	11	22	11	196	11	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	120	0	0	1141	1125	105	1225	1136	190
Stage 1	-	-	-	-	-	-	125	125	-	995	995	-
Stage 2	-	-	-	-	-	-	1016	1000	-	230	141	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1377	-	-	1468	-	-	178	205	949	156	202	852
Stage 1	-	-	-	-	-	-	879	792	-	295	323	-
Stage 2	-	-	-	-	-	-	287	321	-	773	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1377	-	-	1466	-	-	116	141	947	88	139	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	141	-	88	139	-
Stage 1	-	-	-	-	-	-	871	785	-	292	224	-
Stage 2	-	-	-	-	-	-	175	222	-	598	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	5.6	18.8	33.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	485	1377	-	-	1466	-	-	178
HCM Lane V/C Ratio	0.471	0.008	-	-	0.274	-	-	0.305
HCM Control Delay (s)	18.8	7.6	0	-	8.4	0	-	33.9
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	2.5	0	-	-	1.1	-	-	1.2

Intersection						
Int Delay, s/veh	5.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	230	250	20	150	580
Future Vol, veh/h	30	230	250	20	150	580
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	250	272	22	163	630

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1240	283	0	0	293	0
Stage 1	283	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	193	756	-	-	1269	-
Stage 1	765	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	756	-	-	1269	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.7	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	522	1269	-
HCM Lane V/C Ratio	-	-	0.541	0.128	-
HCM Control Delay (s)	-	-	19.7	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.2	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	360	830	170	90	140	220	110	290	300	180	80
Future Volume (veh/h)	190	360	830	170	90	140	220	110	290	300	180	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	192	364	590	172	91	67	222	111	36	303	182	12
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1579	705	310	1499	667	362	374	116	436	571	256
Arrive On Green	0.10	0.45	0.45	0.09	0.42	0.42	0.11	0.14	0.13	0.13	0.16	0.16
Sat Flow, veh/h	3442	3539	1581	3442	3539	1575	3442	2649	824	3442	3539	1583
Grp Volume(v), veh/h	192	364	590	172	91	67	222	73	74	303	182	12
Grp Sat Flow(s),veh/h/ln	1721	1770	1581	1721	1770	1575	1721	1770	1704	1721	1770	1583
Q Serve(g_s), s	4.3	5.2	26.9	3.9	1.2	2.1	5.0	3.0	3.2	6.9	3.7	0.5
Cycle Q Clear(g_c), s	4.3	5.2	26.9	3.9	1.2	2.1	5.0	3.0	3.2	6.9	3.7	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	354	1579	705	310	1499	667	362	250	241	436	571	256
V/C Ratio(X)	0.54	0.23	0.84	0.55	0.06	0.10	0.61	0.29	0.31	0.70	0.32	0.05
Avail Cap(c_a), veh/h	674	2253	1007	674	2253	1003	801	1018	980	801	2036	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	14.0	20.0	35.6	13.9	14.2	35.0	31.4	31.7	34.2	30.3	28.9
Incr Delay (d2), s/veh	0.5	0.1	4.8	0.6	0.0	0.0	0.6	1.0	1.1	0.7	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.5	12.6	1.9	0.6	0.9	2.4	1.5	1.6	3.3	1.9	0.2
LnGrp Delay(d),s/veh	35.3	14.1	24.7	36.2	13.9	14.2	35.6	32.4	32.8	34.9	30.8	29.1
LnGrp LOS	D	B	C	D	B	B	D	C	C	C	C	C
Approach Vol, veh/h		1146			330			369			497	
Approach Delay, s/veh		23.1			25.6			34.4			33.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	40.4	12.6	17.3	12.4	39.4	14.3	15.5
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46
Max Q Clear Time (g_c+I1), s	5.9	28.9	7.0	5.7	6.3	4.1	8.9	5.2
Green Ext Time (p_c), s	0.1	6.2	0.1	3.4	0.1	7.2	0.2	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	950	230	40	370	170	70	30	30	120	10	10
Future Volume (veh/h)	200	950	230	40	370	170	70	30	30	120	10	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	215	1022	174	43	398	140	75	32	7	129	11	8
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	1975	881	46	1141	397	318	118	312	305	25	12
Arrive On Green	0.14	0.56	0.56	0.03	0.44	0.43	0.20	0.20	0.20	0.21	0.21	0.19
Sat Flow, veh/h	1774	3539	1579	1774	2576	895	1064	593	1569	907	120	59
Grp Volume(v), veh/h	215	1022	174	43	272	266	107	0	7	148	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1579	1774	1770	1701	1656	0	1569	1086	0	0
Q Serve(g_s), s	6.8	10.3	3.1	1.4	5.8	6.0	0.0	0.0	0.2	5.3	0.0	0.0
Cycle Q Clear(g_c), s	6.8	10.3	3.1	1.4	5.8	6.0	3.0	0.0	0.2	8.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.53	0.70		1.00	0.87		0.05
Lane Grp Cap(c), veh/h	250	1975	881	46	784	754	436	0	312	342	0	0
V/C Ratio(X)	0.86	0.52	0.20	0.94	0.35	0.35	0.25	0.00	0.02	0.43	0.00	0.00
Avail Cap(c_a), veh/h	617	2586	1154	617	1293	1243	1336	0	1256	1168	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	7.9	6.3	28.0	10.5	10.7	19.6	0.0	18.5	22.4	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.3	0.1	24.9	0.3	0.4	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.0	1.4	1.0	2.9	2.8	1.5	0.0	0.1	2.2	0.0	0.0
LnGrp Delay(d),s/veh	27.5	8.2	6.4	52.8	10.9	11.0	19.7	0.0	18.5	22.8	0.0	0.0
LnGrp LOS	C	A	A	D	B	B	B		B	C		
Approach Vol, veh/h		1411			581			114			148	
Approach Delay, s/veh		10.9			14.0			19.7			22.8	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	36.1		15.9	12.1	29.5		15.9
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46
Max Q Clear Time (g_c+I1), s	3.4	12.3		10.4	8.8	8.0		5.0
Green Ext Time (p_c), s	0.0	15.7		0.6	0.1	16.9		0.6

Intersection Summary		
HCM 2010 Ctrl Delay		12.9
HCM 2010 LOS		B

Notes

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	10	190	10	40	10	230	280	100	380	0
Future Vol, veh/h	20	10	10	190	10	40	10	230	280	100	380	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	11	207	11	43	11	250	304	109	413	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	11.8	15.4	14.5	15.4
HCM LOS	B	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	50%	100%	0%	44%	0%
Vol Thru, %	96%	0%	25%	0%	20%	56%	100%
Vol Right, %	0%	100%	25%	0%	80%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	280	40	190	50	227	253
LT Vol	10	0	20	190	0	100	0
Through Vol	230	0	10	0	10	127	253
RT Vol	0	280	10	0	40	0	0
Lane Flow Rate	261	304	43	207	54	246	275
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.471	0.488	0.096	0.447	0.101	0.459	0.496
Departure Headway (Hd)	6.504	5.77	7.969	7.796	6.714	6.711	6.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	621	453	461	530	535	551
Service Time	4.288	3.553	5.969	5.583	4.5	4.495	4.27
HCM Lane V/C Ratio	0.475	0.49	0.095	0.449	0.102	0.46	0.499
HCM Control Delay	15	14	11.8	16.8	10.3	15.1	15.6
HCM Lane LOS	B	B	B	C	B	C	C
HCM 95th-tile Q	2.5	2.7	0.3	2.3	0.3	2.4	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	0	410	0	0	0	320	390	0	0	460	250
Future Volume (veh/h)	270	0	410	0	0	0	320	390	0	0	460	250
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	0	328	0	0	0	348	424	0	0	500	154
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	848	369	2	44	20	391	2304	1031	2	707	587
Arrive On Green	0.18	0.00	0.24	0.00	0.00	0.00	0.22	0.65	0.00	0.00	0.38	0.38
Sat Flow, veh/h	1774	3539	1538	1774	3539	1583	1774	3539	1583	1774	1863	1547
Grp Volume(v), veh/h	293	0	328	0	0	0	348	424	0	0	500	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1538	1774	1770	1583	1774	1770	1583	1774	1863	1547
Q Serve(g_s), s	12.6	0.0	16.0	0.0	0.0	0.0	14.8	3.7	0.0	0.0	17.7	5.3
Cycle Q Clear(g_c), s	12.6	0.0	16.0	0.0	0.0	0.0	14.8	3.7	0.0	0.0	17.7	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	848	369	2	44	20	391	2304	1031	2	707	587
V/C Ratio(X)	0.91	0.00	0.89	0.00	0.00	0.00	0.89	0.18	0.00	0.00	0.71	0.26
Avail Cap(c_a), veh/h	707	1865	810	365	1183	529	821	3230	1445	137	982	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	28.6	0.0	0.0	0.0	29.4	5.4	0.0	0.0	20.5	16.6
Incr Delay (d2), s/veh	4.0	0.0	3.0	0.0	0.0	0.0	2.8	0.1	0.0	0.0	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	7.1	0.0	0.0	0.0	7.6	1.8	0.0	0.0	9.3	2.3
LnGrp Delay(d),s/veh	35.1	0.0	31.6	0.0	0.0	0.0	32.3	5.5	0.0	0.0	22.0	16.9
LnGrp LOS	D		C				C	A			C	B
Approach Vol, veh/h		621			0			772			654	
Approach Delay, s/veh		33.2			0.0			17.6			20.8	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	54.6	0.0	23.1	21.1	33.5	18.2	5.0
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	31.5	26.0
Max Q Clear Time (g_c+I1), s	0.0	5.7	0.0	18.0	16.8	19.7	14.6	0.0
Green Ext Time (p_c), s	0.0	13.6	0.0	0.2	0.1	9.5	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

Intersection						
Int Delay, s/veh	15.2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	310	120	220	580	90
Future Vol, veh/h	90	310	120	220	580	90
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	337	130	239	630	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1020	640	630	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	247	474	950	-	-	0
Stage 1	530	-	-	-	-	0
Stage 2	654	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	213	470	942	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.5	3.3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	942	-	488	-
HCM Lane V/C Ratio	0.138	-	0.891	-
HCM Control Delay (s)	9.4	-	47.5	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	0.5	-	9.9	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	10	150	100	20	20	70	360	80	10	320	10
Future Vol, veh/h	10	10	150	100	20	20	70	360	80	10	320	10
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	163	109	22	22	76	391	87	11	348	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	754	1025	199	808	987	259	369	0	0	488	0	0
Stage 1	385	385	-	597	597	-	-	-	-	-	-	-
Stage 2	369	640	-	211	390	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	298	234	809	272	246	740	1186	-	-	1071	-	-
Stage 1	610	609	-	456	490	-	-	-	-	-	-	-
Stage 2	623	468	-	771	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	207	796	189	218	728	1176	-	-	1062	-	-
Mov Cap-2 Maneuver	243	207	-	189	218	-	-	-	-	-	-	-
Stage 1	551	596	-	412	443	-	-	-	-	-	-	-
Stage 2	519	423	-	589	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	43.2	1.3	0.3
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1176	-	-	230	729	191	409	1062	-	-
HCM Lane V/C Ratio	0.065	-	-	0.071	0.231	0.626	0.08	0.01	-	-
HCM Control Delay (s)	8.3	0.3	-	21.8	11.4	51	14.6	8.4	0.1	-
HCM Lane LOS	A	A	-	C	B	F	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.9	3.6	0.3	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	170	0	0	0	180	640	0	0	780	30
Future Vol, veh/h	10	0	170	0	0	0	180	640	0	0	780	30
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	92	94	92	92	92	94	94	92	92	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	181	0	0	0	191	681	0	0	830	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1589	1920	451	1489	1936	350	872	0	0	681	0	0
Stage 1	856	856	-	1064	1064	-	-	-	-	-	-	-
Stage 2	733	1064	-	425	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	72	66	556	86	65	646	769	-	-	907	-	-
Stage 1	319	373	-	238	298	-	-	-	-	-	-	-
Stage 2	378	298	-	578	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	39	547	39	38	641	763	-	-	899	-	-
Mov Cap-2 Maneuver	49	39	-	39	38	-	-	-	-	-	-	-
Stage 1	189	370	-	142	178	-	-	-	-	-	-	-
Stage 2	224	178	-	384	363	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	0	3.6	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	763	-	-	350	-	899	-	-
HCM Lane V/C Ratio	0.251	-	-	0.547	-	-	-	-
HCM Control Delay (s)	11.3	1.5	-	27	0	0	-	-
HCM Lane LOS	B	A	-	D	A	A	-	-
HCM 95th %tile Q(veh)	1	-	-	3.1	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	830	230	0	720	710	0	0	0	650	10	210
Future Volume (veh/h)	0	830	230	0	720	710	0	0	0	650	10	210
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	856	0	0	742	0				677	0	83
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2365	0	0	1646	736				1133	0	505
Arrive On Green	0.00	0.48	0.00	0.00	0.48	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	856	0	0	742	0				677	0	83
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	4.3	0.0	0.0	5.7	0.0				6.4	0.0	1.5
Cycle Q Clear(g_c), s	0.0	4.3	0.0	0.0	5.7	0.0				6.4	0.0	1.5
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2365	0	0	1646	736				1133	0	505
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.45	0.00				0.60	0.00	0.16
Avail Cap(c_a), veh/h	0	7610	0	0	5296	2369				2778	0	1240
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.5	0.0	0.0	6.9	0.0				11.3	0.0	9.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	0.0	0.0	2.7	0.0				3.1	0.0	0.7
LnGrp Delay(d),s/veh	0.0	6.5	0.0	0.0	6.9	0.0				11.5	0.0	9.7
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		856			742						760	
Approach Delay, s/veh		6.5			6.9						11.3	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		23.0		16.6		23.0		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		6.3		8.4		7.7		
Green Ext Time (p_c), s		8.5		1.5		8.5		

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1280	190	0	1300	550	130	0	1210	0	0	0
Future Volume (vph)	10	1280	190	0	1300	550	130	0	1210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4843			4720			1770	2787			
Flt Permitted		0.91			1.00			0.95	1.00			
Satd. Flow (perm)		4416			4720			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1320	196	0	1340	567	134	0	1247	0	0	0
RTOR Reduction (vph)	0	18	0	0	74	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	1508	0	0	1833	0	0	134	1228	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		40.5			78.3			11.1	48.9			
Effective Green, g (s)		43.3			81.1			13.9	51.7			
Actuated g/C Ratio		0.42			0.79			0.13	0.50			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1856			3716			238	1398			
v/s Ratio Prot					0.39			0.08	c0.44			
v/s Ratio Perm		c0.34										
v/c Ratio		0.81			0.49			0.56	0.88			
Uniform Delay, d1		26.3			3.8			41.7	22.9			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		2.7			0.0			1.8	6.4			
Delay (s)		29.0			3.8			43.5	29.2			
Level of Service		C			A			D	C			
Approach Delay (s)		29.0			3.8			30.6			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	103.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1300	500	70	830	450	690	520	120	380	720	330
Future Volume (veh/h)	690	1300	500	70	830	450	690	520	120	380	720	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	711	1340	259	72	856	389	711	536	0	392	742	229
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	514	1349	602	93	985	446	966	817	365	580	980	427
Arrive On Green	0.15	0.39	0.39	0.05	0.30	0.28	0.28	0.23	0.00	0.33	0.28	0.28
Sat Flow, veh/h	3343	3438	1535	1723	3325	1506	3442	3539	1583	1774	3539	1543
Grp Volume(v), veh/h	711	1340	259	72	848	397	711	536	0	392	742	229
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1538	1721	1770	1583	1774	1770	1543
Q Serve(g_s), s	20.0	50.5	16.0	5.4	31.7	31.9	24.3	17.8	0.0	24.8	24.9	13.9
Cycle Q Clear(g_c), s	20.0	50.5	16.0	5.4	31.7	31.9	24.3	17.8	0.0	24.8	24.9	13.9
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	514	1349	602	93	975	456	966	817	365	580	980	427
V/C Ratio(X)	1.38	0.99	0.43	0.78	0.87	0.87	0.74	0.66	0.00	0.68	0.76	0.54
Avail Cap(c_a), veh/h	514	1349	602	93	975	456	966	817	365	580	980	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.3	28.9	60.7	43.4	44.1	42.4	45.3	0.0	37.8	43.0	28.9
Incr Delay (d2), s/veh	177.2	14.4	0.2	32.9	8.5	16.7	3.0	4.1	0.0	3.1	5.5	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	26.5	6.8	3.4	15.5	15.7	12.0	9.2	0.0	12.7	12.9	6.5
LnGrp Delay(d),s/veh	232.2	53.7	29.1	93.6	51.9	60.8	45.3	49.4	0.0	40.9	48.5	33.7
LnGrp LOS	F	D	C	F	D	E	D	D		D	D	C
Approach Vol, veh/h		2310			1317			1247			1363	
Approach Delay, s/veh		105.9			56.9			47.1			43.8	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.0	34.0	11.5	55.0	41.0	40.0	24.0	42.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	25.0	28.5	6.0	* 50	19.0	34.5	19.0	36.5
Max Q Clear Time (g_c+I1), s	26.8	19.8	7.4	52.5	26.3	26.9	22.0	33.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	3.4	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	70.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	90	140	540	100	70	140	870	310	100	1250	20
Future Volume (veh/h)	50	90	140	540	100	70	140	870	310	100	1250	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	97	20	658	0	0	151	935	0	108	1344	21
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	158	207	795	0	355	197	1473	659	151	2012	31
Arrive On Green	0.13	0.13	0.13	0.22	0.00	0.00	0.11	0.42	0.00	0.09	0.39	0.38
Sat Flow, veh/h	654	1176	1541	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	151	0	20	658	0	0	151	935	0	108	884	481
Grp Sat Flow(s),veh/h/ln	1830	0	1541	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	8.9	0.0	1.3	20.2	0.0	0.0	9.4	23.9	0.0	6.8	24.6	24.6
Cycle Q Clear(g_c), s	8.9	0.0	1.3	20.2	0.0	0.0	9.4	23.9	0.0	6.8	24.6	24.6
Prop In Lane	0.36		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	246	0	207	795	0	355	197	1473	659	151	1323	721
V/C Ratio(X)	0.61	0.00	0.10	0.83	0.00	0.00	0.77	0.63	0.00	0.72	0.67	0.67
Avail Cap(c_a), veh/h	497	0	418	1274	0	568	481	1473	659	481	1380	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	43.3	42.2	0.0	0.0	49.3	26.5	0.0	50.9	28.7	28.8
Incr Delay (d2), s/veh	2.5	0.0	0.2	2.6	0.0	0.0	6.1	1.3	0.0	6.2	1.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.6	10.2	0.0	0.0	4.9	11.9	0.0	3.6	11.7	13.0
LnGrp Delay(d),s/veh	49.1	0.0	43.5	44.8	0.0	0.0	55.4	27.7	0.0	57.1	30.4	31.8
LnGrp LOS	D		D	D			E	C		E	C	C
Approach Vol, veh/h		171			658			1086			1473	
Approach Delay, s/veh		48.4			44.8			31.6			32.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	51.5		29.6	16.7	48.6		19.4
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	8.8	25.9		22.2	11.4	26.6		10.9
Green Ext Time (p_c), s	0.2	17.8		2.2	0.4	16.5		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	950	110	160	520	220	210	460	110	390	450	210
Future Volume (veh/h)	230	950	110	160	520	220	210	460	110	390	450	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	245	1011	110	170	553	102	223	489	28	415	479	71
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	551	1515	165	270	1984	604	270	847	368	416	977	426
Arrive On Green	0.16	0.49	0.46	0.08	0.40	0.40	0.08	0.24	0.24	0.12	0.28	0.28
Sat Flow, veh/h	3343	3119	339	3343	4940	1504	3442	3539	1538	3442	3539	1541
Grp Volume(v), veh/h	245	557	564	170	553	102	223	489	28	415	479	71
Grp Sat Flow(s),veh/h/ln	1672	1719	1739	1672	1647	1504	1721	1770	1538	1721	1770	1541
Q Serve(g_s), s	8.6	32.1	32.2	6.4	9.8	5.7	8.3	15.9	1.5	15.7	14.7	4.5
Cycle Q Clear(g_c), s	8.6	32.1	32.2	6.4	9.8	5.7	8.3	15.9	1.5	15.7	14.7	4.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	551	835	844	270	1984	604	270	847	368	416	977	426
V/C Ratio(X)	0.44	0.67	0.67	0.63	0.28	0.17	0.83	0.58	0.08	1.00	0.49	0.17
Avail Cap(c_a), veh/h	551	835	844	283	1984	604	270	847	368	416	977	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	25.4	25.7	57.9	26.2	25.0	59.0	43.7	26.8	57.1	39.4	35.7
Incr Delay (d2), s/veh	0.2	4.2	4.2	3.0	0.4	0.6	17.5	2.9	0.4	43.7	1.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	16.1	16.4	3.1	4.5	2.4	4.6	8.1	0.7	10.0	7.4	2.0
LnGrp Delay(d),s/veh	49.1	29.6	29.9	60.8	26.6	25.6	76.6	46.5	27.2	100.8	41.1	36.5
LnGrp LOS	D	C	C	E	C	C	E	D	C	F	D	D
Approach Vol, veh/h		1366			825			740			965	
Approach Delay, s/veh		33.2			33.5			54.8			66.5	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.6	56.2	19.7	35.1	14.5	67.3	14.9	39.9
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.8	* 6.8
Max Green Setting (Gmax), s	12.9	50.1	12.2	29.0	8.9	54.1	8.1	* 33
Max Q Clear Time (g_c+I1), s	10.6	11.8	17.7	17.9	8.4	34.2	10.3	16.7
Green Ext Time (p_c), s	0.8	1.3	0.0	0.9	0.0	2.2	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.6
HCM 2010 LOS	D

Notes

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU No Proj PM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB McKinnon St											
3	L2	207	0.0	0.156	5.8	LOS A	0.8	18.8	0.63	0.58	30.1
8	T1	11	0.0	0.156	5.2	LOS A	0.8	18.8	0.62	0.56	24.1
18	R2	54	0.0	0.156	5.2	LOS A	0.8	18.8	0.62	0.56	35.1
Approach		272	0.0	0.156	5.7	LOS A	0.8	18.8	0.63	0.58	31.1
East: WB Boronda Rd											
1	L2	130	0.0	0.369	6.2	LOS A	2.1	52.6	0.42	0.29	30.1
6	T1	924	0.4	0.369	5.8	LOS A	2.2	54.6	0.41	0.27	33.4
16	R2	11	0.0	0.006	2.1	LOS A	0.0	0.7	0.08	0.01	34.3
Approach		1065	0.3	0.369	5.8	LOS A	2.2	54.6	0.41	0.27	33.0
North: SB McKinnon St											
7	L2	11	0.0	0.013	4.6	LOS A	0.1	1.4	0.62	0.48	33.6
4	T1	11	0.0	0.014	3.1	LOS A	0.1	1.6	0.61	0.43	32.0
14	R2	22	0.0	0.014	3.1	LOS A	0.1	1.6	0.60	0.41	33.1
Approach		43	0.0	0.014	3.5	LOS A	0.1	1.6	0.60	0.43	33.0
West: EB Boronda Rd											
5	L2	11	0.0	0.364	5.9	LOS A	1.9	47.8	0.30	0.18	33.2
2	T1	1087	0.0	0.364	5.6	LOS A	2.0	48.9	0.29	0.17	35.1
12	R2	467	0.0	0.284	4.5	LOS A	1.5	36.8	0.26	0.14	29.5
Approach		1565	0.0	0.364	5.2	LOS A	2.0	48.9	0.28	0.16	34.1
All Vehicles		2946	0.1	0.369	5.4	LOS A	2.2	54.6	0.36	0.24	33.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	196	0.0	0.150	4.0	LOS A	0.7	18.0	0.56	0.46	35.2
8	T1	1	0.0	0.001	3.8	LOS A	0.0	0.1	0.54	0.30	36.4
18	R2	130	0.0	0.100	3.6	LOS A	0.5	11.7	0.54	0.43	36.4
Approach		327	0.0	0.150	3.8	LOS A	0.7	18.0	0.55	0.45	35.7
East: WB Baronda Rd											
1	L2	98	0.0	0.400	7.0	LOS A	2.5	62.0	0.44	0.29	35.6
6	T1	902	0.3	0.400	6.8	LOS A	2.5	63.1	0.43	0.28	36.5
16	R2	1	0.0	0.400	6.6	LOS A	2.5	63.1	0.43	0.28	34.9
Approach		1001	0.3	0.400	6.8	LOS A	2.5	63.1	0.43	0.28	36.4
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.001	4.6	LOS A	0.0	0.1	0.62	0.38	34.5
4	T1	1	0.0	0.001	3.1	LOS A	0.0	0.1	0.61	0.33	36.3
14	R2	1	0.0	0.001	2.9	LOS A	0.0	0.1	0.57	0.30	36.5
Approach		3	0.0	0.001	3.5	LOS A	0.0	0.1	0.60	0.34	35.7
West: EB Boronda Rd											
5u	U	1	0.0	0.427	6.9	LOS A	2.8	69.1	0.32	0.17	37.3
5	L2	1	0.0	0.427	6.9	LOS A	2.8	69.1	0.32	0.17	35.9
2	T1	859	0.4	0.427	6.8	LOS A	2.8	69.7	0.32	0.16	36.6
12	R2	293	0.0	0.427	6.6	LOS A	2.8	69.7	0.31	0.16	35.4
Approach		1154	0.3	0.427	6.8	LOS A	2.8	69.7	0.31	0.16	36.3
All Vehicles		2486	0.2	0.427	6.4	LOS A	2.8	69.7	0.39	0.25	36.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	130	0.0	0.159	6.0	LOS A	0.5	12.2	0.54	0.54	35.0
8	T1	261	0.0	0.139	5.1	LOS A	0.5	11.4	0.51	0.50	35.9
18	R2	457	0.0	0.273	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		848	0.0	0.273	2.5	LOS A	0.5	12.2	0.24	0.24	37.4
East: WB Boronda Rd											
1	L2	228	0.0	0.285	5.7	LOS A	1.2	29.2	0.40	0.32	34.0
6	T1	815	0.2	0.285	5.5	LOS A	1.2	30.2	0.40	0.31	39.5
16	R2	174	0.0	0.125	3.6	LOS A	0.5	12.1	0.30	0.18	38.2
Approach		1217	0.1	0.285	5.3	LOS A	1.2	30.2	0.38	0.29	38.6
North: SB Natividad Rd											
7	L2	370	0.3	0.333	7.9	LOS A	1.3	33.6	0.59	0.61	34.7
4	T1	587	0.0	0.333	6.9	LOS A	1.4	34.4	0.58	0.59	34.2
14	R2	65	7.5	0.060	3.8	LOS A	0.2	5.3	0.46	0.39	38.9
Approach		1022	0.6	0.333	7.1	LOS A	1.4	34.4	0.58	0.58	34.8
West: EB Boronda Rd											
5u	U	1	0.0	0.328	8.2	LOS A	1.4	34.5	0.63	0.64	38.3
5	L2	22	0.0	0.328	8.2	LOS A	1.4	34.5	0.63	0.64	37.9
2	T1	859	0.0	0.328	7.6	LOS A	1.4	35.8	0.62	0.63	38.7
12	R2	130	0.0	0.111	4.0	LOS A	0.4	10.5	0.47	0.40	37.7
Approach		1012	0.0	0.328	7.1	LOS A	1.4	35.8	0.60	0.60	38.6
All Vehicles		4099	0.2	0.333	5.6	LOS A	1.4	35.8	0.46	0.43	37.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_CU No Proj PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	359	0.0	0.159	4.6	LOS A	0.8	20.6	0.60	0.53	32.7
8	T1	11	0.0	0.053	4.0	LOS A	0.2	5.9	0.58	0.46	35.1
18	R2	43	0.0	0.053	4.0	LOS A	0.2	5.9	0.58	0.46	34.5
Approach		413	0.0	0.159	4.5	LOS A	0.8	20.6	0.60	0.52	32.9
East: WB Boronda Rd											
1	L2	22	0.0	0.369	6.8	LOS A	1.6	41.1	0.44	0.36	34.4
6	T1	891	0.2	0.369	6.4	LOS A	1.7	42.4	0.43	0.35	35.5
16	R2	11	0.0	0.007	2.4	LOS A	0.0	0.6	0.07	0.01	36.2
Approach		924	0.2	0.369	6.4	LOS A	1.7	42.4	0.43	0.34	35.5
North: SB Independence Blvd (Future)											
7	L2	11	0.0	0.022	3.9	LOS A	0.1	2.2	0.56	0.45	35.2
4	T1	11	0.0	0.022	3.9	LOS A	0.1	2.2	0.56	0.45	33.6
14	R2	11	0.0	0.011	3.8	LOS A	0.0	1.1	0.56	0.41	35.3
Approach		33	0.0	0.022	3.9	LOS A	0.1	2.2	0.56	0.44	34.8
West: EB Boronda Rd											
5u	U	1	0.0	0.366	5.8	LOS A	2.4	59.1	0.19	0.07	36.6
5	L2	11	0.0	0.366	5.8	LOS A	2.4	59.1	0.19	0.07	35.5
2	T1	1120	0.1	0.366	5.5	LOS A	2.4	59.4	0.18	0.07	35.9
12	R2	500	0.0	0.299	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1632	0.1	0.366	3.8	LOS A	2.4	59.4	0.13	0.05	36.1
All Vehicles		3001	0.1	0.369	4.7	LOS A	2.4	59.4	0.29	0.21	35.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	900	170	50	810	0	80	0	20	0	0	0
Future Volume (veh/h)	0	900	170	50	810	0	80	0	20	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	938	170	52	844	0	83	0	0	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	1	2217	402	66	2873	0	201	0	0	55	192	0
Arrive On Green	0.00	1.00	1.00	0.04	0.84	0.00	0.10	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	2893	524	1723	3529	0	1412	0	0	1412	1863	0
Grp Volume(v), veh/h	0	557	551	52	844	0	83	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1698	1723	1719	0	1412	0	0	1412	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	3.9	7.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.9	7.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.31	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	1	1317	1301	66	2873	0	201	0	0	55	192	0
V/C Ratio(X)	0.00	0.42	0.42	0.78	0.29	0.00	0.41	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	82	1317	1301	133	2873	0	425	0	0	279	487	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.95	0.95	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	62.0	2.3	0.0	55.6	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.0	17.9	0.3	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	2.2	3.4	0.0	2.9	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.9	1.0	79.8	2.6	0.0	57.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	E	A		E					
Approach Vol, veh/h		1108			896			83			0	
Approach Delay, s/veh		1.0			7.1			57.0			0.0	
Approach LOS		A			A			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	103.6		17.4	0.0	112.6		17.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	74.0		34.0	6.0	78.0		34.0
Max Q Clear Time (g_c+I1), s	5.9	2.0		0.0	0.0	9.0		9.3
Green Ext Time (p_c), s	0.0	21.3		0.0	0.0	21.1		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		5.8
HCM 2010 LOS		A

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	260	200	0
Future Vol, veh/h	10	10	0	260	200	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	0	283	217	0
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.5	10.2	9.6
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	0%	100%	0%	0%
Vol Thru, %	100%	100%	0%	0%	100%
Vol Right, %	0%	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	260	10	10	200
LT Vol	0	0	10	0	0
Through Vol	0	260	0	0	200
RT Vol	0	0	0	10	0
Lane Flow Rate	0	283	11	11	217
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0	0.367	0.019	0.015	0.284
Departure Headway (Hd)	4.68	4.68	6.234	5.022	4.708
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	760	577	715	767
Service Time	2.46	2.46	3.946	2.734	2.712
HCM Lane V/C Ratio	0	0.372	0.019	0.015	0.283
HCM Control Delay	7.5	10.2	9.1	7.8	9.6
HCM Lane LOS	N	B	A	A	A
HCM 95th-tile Q	0	1.7	0.1	0	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	210	60	220	190	230	120	1220	250	180	1350	200
Future Volume (veh/h)	190	210	60	220	190	230	120	1220	250	180	1350	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	200	221	9	232	200	88	126	1284	245	189	1421	136
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	567	245	261	313	261	395	2145	409	231	1756	537
Arrive On Green	0.14	0.16	0.16	0.15	0.17	0.17	0.22	0.50	0.48	0.07	0.35	0.35
Sat Flow, veh/h	1774	3539	1527	1774	1863	1555	1774	4284	817	3442	5085	1554
Grp Volume(v), veh/h	200	221	9	232	200	88	126	1016	513	189	1421	136
Grp Sat Flow(s),veh/h/ln	1774	1770	1527	1774	1863	1555	1774	1695	1711	1721	1695	1554
Q Serve(g_s), s	14.0	7.2	0.4	16.4	12.8	6.4	7.6	27.3	27.6	6.9	32.5	5.2
Cycle Q Clear(g_c), s	14.0	7.2	0.4	16.4	12.8	6.4	7.6	27.3	27.6	6.9	32.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	247	567	245	261	313	261	395	1698	857	231	1756	537
V/C Ratio(X)	0.81	0.39	0.04	0.89	0.64	0.34	0.32	0.60	0.60	0.82	0.81	0.25
Avail Cap(c_a), veh/h	247	1081	466	261	584	487	395	1698	857	231	1756	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	48.1	17.5	53.6	49.6	47.0	41.6	22.8	23.2	58.9	38.1	12.4
Incr Delay (d2), s/veh	17.0	0.2	0.0	28.4	0.8	0.3	0.2	1.6	3.1	18.8	4.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.5	0.2	10.1	6.7	2.8	3.8	13.1	13.8	3.9	15.8	2.4
LnGrp Delay(d),s/veh	70.4	48.3	17.6	82.0	50.4	47.2	41.8	24.3	26.3	77.7	42.2	13.5
LnGrp LOS	E	D	B	F	D	D	D	C	C	E	D	B
Approach Vol, veh/h		430			520			1655			1746	
Approach Delay, s/veh		58.0			64.0			26.3			43.8	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	68.1	22.8	24.5	32.5	48.2	21.8	25.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	6.5	43.4	16.7	37.0	7.8	42.1	15.7	38.0
Max Q Clear Time (g_c+I1), s	8.9	29.6	18.4	9.2	9.6	34.5	16.0	14.8
Green Ext Time (p_c), s	0.0	3.8	0.0	0.9	0.0	2.9	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	0	320	0	0	0	410	990	0	0	790	100
Future Volume (veh/h)	240	0	320	0	0	0	410	990	0	0	790	100
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	258	0	55				441	1065	0	0	849	91
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	419	0	193				518	3869	0	3	1914	204
Arrive On Green	0.12	0.00	0.12				0.29	0.76	0.00	0.00	0.41	0.39
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4665	498
Grp Volume(v), veh/h	258	0	55				441	1065	0	0	616	324
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1773
Q Serve(g_s), s	4.9	0.0	2.2				16.0	4.3	0.0	0.0	8.9	9.1
Cycle Q Clear(g_c), s	4.9	0.0	2.2				16.0	4.3	0.0	0.0	8.9	9.1
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	419	0	193				518	3869	0	3	1391	727
V/C Ratio(X)	0.62	0.00	0.29				0.85	0.28	0.00	0.00	0.44	0.45
Avail Cap(c_a), veh/h	1312	0	603				676	4472	0	156	1988	1039
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	27.3				22.8	2.5	0.0	0.0	14.5	14.7
Incr Delay (d2), s/veh	1.5	0.0	0.8				10.7	0.0	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.0				9.4	2.0	0.0	0.0	4.2	4.5
LnGrp Delay(d),s/veh	29.9	0.0	28.1				33.5	2.5	0.0	0.0	14.7	15.1
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		313						1506			940	
Approach Delay, s/veh		29.6						11.6			14.9	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	55.9		12.3	23.9	32.0		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	0.0	6.3		6.9	18.0	11.1		
Green Ext Time (p_c), s	0.0	20.6		1.0	1.9	15.4		

Intersection Summary		
HCM 2010 Ctrl Delay		14.7
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1040	230	20	800	80	190	130	30	80	130	200
Future Volume (veh/h)	280	1040	230	20	800	80	190	130	30	80	130	200
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	298	1106	234	21	851	79	202	138	22	85	138	52
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	1542	325	92	1224	114	357	473	75	351	564	467
Arrive On Green	0.21	0.53	0.50	0.05	0.37	0.35	0.30	0.30	0.29	0.30	0.30	0.30
Sat Flow, veh/h	1774	2909	612	1774	3272	304	1167	1562	249	1199	1863	1543
Grp Volume(v), veh/h	298	671	669	21	460	470	202	0	160	85	138	52
Grp Sat Flow(s),veh/h/ln	1774	1770	1751	1774	1770	1806	1167	0	1811	1199	1863	1543
Q Serve(g_s), s	16.7	30.0	30.7	1.2	23.0	23.1	16.5	0.0	7.1	6.1	5.8	2.5
Cycle Q Clear(g_c), s	16.7	30.0	30.7	1.2	23.0	23.1	22.3	0.0	7.1	13.2	5.8	2.5
Prop In Lane	1.00		0.35	1.00		0.17	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	369	938	929	92	662	676	357	0	548	351	564	467
V/C Ratio(X)	0.81	0.71	0.72	0.23	0.70	0.70	0.57	0.00	0.29	0.24	0.24	0.11
Avail Cap(c_a), veh/h	441	1015	1005	153	728	743	439	0	675	435	695	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	18.6	19.1	47.6	27.7	27.9	35.8	0.0	28.0	32.9	27.4	26.3
Incr Delay (d2), s/veh	9.0	2.2	2.3	1.2	2.6	2.5	1.4	0.0	0.3	0.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	15.1	15.4	0.6	11.7	12.0	5.5	0.0	3.6	2.1	3.0	1.1
LnGrp Delay(d),s/veh	48.4	20.8	21.4	48.8	30.3	30.4	37.2	0.0	28.3	33.3	27.7	26.4
LnGrp LOS	D	C	C	D	C	C	D		C	C	C	C
Approach Vol, veh/h		1638			951			362			275	
Approach Delay, s/veh		26.1			30.8			33.3			29.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	59.5		35.7	25.8	43.1		35.7
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	13.2	32.7		15.2	18.7	25.1		24.3
Green Ext Time (p_c), s	0.0	16.2		3.0	0.4	11.3		2.5

Intersection Summary		
HCM 2010 Ctrl Delay		28.5
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	0	130	0	0	0	100	500	0	0	630	190
Future Volume (veh/h)	190	0	130	0	0	0	100	500	0	0	630	190
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	200	0	36	0	0	0	105	526	0	0	663	102
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	340	344	302	4	8	0	205	2185	0	4	1484	650
Arrive On Green	0.19	0.00	0.15	0.00	0.00	0.00	0.12	0.64	0.00	0.00	0.43	0.43
Sat Flow, veh/h	1747	1770	1553	1774	3632	0	1723	3529	0	1723	3438	1505
Grp Volume(v), veh/h	200	0	36	0	0	0	105	526	0	0	663	102
Grp Sat Flow(s),veh/h/ln	1747	1770	1553	1774	1770	0	1723	1719	0	1723	1719	1505
Q Serve(g_s), s	4.9	0.0	0.9	0.0	0.0	0.0	2.7	3.1	0.0	0.0	6.4	1.9
Cycle Q Clear(g_c), s	4.9	0.0	0.9	0.0	0.0	0.0	2.7	3.1	0.0	0.0	6.4	1.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	344	302	4	8	0	205	2185	0	4	1484	650
V/C Ratio(X)	0.59	0.00	0.12	0.00	0.00	0.00	0.51	0.24	0.00	0.00	0.45	0.16
Avail Cap(c_a), veh/h	853	864	758	1393	2779	0	585	2773	0	585	2773	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	16.5	0.0	0.0	0.0	19.5	3.7	0.0	0.0	9.4	8.2
Incr Delay (d2), s/veh	1.6	0.0	0.2	0.0	0.0	0.0	2.0	0.1	0.0	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.4	0.0	0.0	0.0	1.4	1.5	0.0	0.0	3.0	0.8
LnGrp Delay(d),s/veh	18.9	0.0	16.7	0.0	0.0	0.0	21.4	3.7	0.0	0.0	9.6	8.3
LnGrp LOS	B		B				C	A			A	A
Approach Vol, veh/h		236			0			631			765	
Approach Delay, s/veh		18.5			0.0			6.7			9.5	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	24.3		0.0	0.0	34.0		13.2
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0
Max Q Clear Time (g_c+I1), s	4.7	8.4		0.0	0.0	5.1		6.9
Green Ext Time (p_c), s	0.1	8.9		0.0	0.0	9.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1590	480	0	1430	140	0	0	0	440	0	410
Future Volume (veh/h)	0	1590	480	0	1430	140	0	0	0	440	0	410
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1674	0	0	1505	0				463	0	413
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2082	931	0	2082	0				1038	0	477
Arrive On Green	0.00	0.61	0.00	0.00	0.61	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1674	0	0	1505	0				463	0	413
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	32.2	0.0	0.0	26.4	0.0				9.3	0.0	21.2
Cycle Q Clear(g_c), s	0.0	32.2	0.0	0.0	26.4	0.0				9.3	0.0	21.2
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2082	931	0	2082	0				1038	0	477
V/C Ratio(X)	0.00	0.80	0.00	0.00	0.72	0.00				0.45	0.00	0.87
Avail Cap(c_a), veh/h	0	2239	1002	0	2239	0				1441	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	0.0	0.0	11.9	0.0				24.2	0.0	28.4
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.0	0.9	0.0				0.2	0.0	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.7	0.0	0.0	12.6	0.0				4.5	0.0	10.2
LnGrp Delay(d),s/veh	0.0	14.9	0.0	0.0	12.8	0.0				24.5	0.0	36.2
LnGrp LOS		B			B					C		D
Approach Vol, veh/h		1674			1505						876	
Approach Delay, s/veh		14.9			12.8						30.0	
Approach LOS		B			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		56.1		29.9		56.1						
Change Period (Y+Rc), s		5.1		4.6		5.1						
Max Green Setting (Gmax), s		54.9		35.4		54.9						
Max Q Clear Time (g_c+I1), s		34.2		23.2		28.4						
Green Ext Time (p_c), s		16.8		2.1		20.4						
Intersection Summary												
HCM 2010 Ctrl Delay			17.4									
HCM 2010 LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1490	540	0	1000	230	570	0	360	0	0	0
Future Volume (vph)	0	1490	540	0	1000	230	570	0	360	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.97		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1499		3323		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1499		3323		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1585	574	0	1064	245	606	0	383	0	0	0
RTOR Reduction (vph)	0	0	191	0	19	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	1585	383	0	1290	0	303	303	331	0	0	0
Confl. Peds. (#/hr)			2			4						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.6	63.6		63.6		22.9	22.9	22.9			
Effective Green, g (s)		64.2	63.6		64.2		23.1	23.1	23.1			
Actuated g/C Ratio		0.67	0.67		0.67		0.24	0.24	0.24			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2316	1000		2238		407	407	383			
v/s Ratio Prot		c0.46			0.39		0.18	0.18				
v/s Ratio Perm			0.26						c0.21			
v/c Ratio		0.68	0.38		0.58		0.74	0.74	0.86			
Uniform Delay, d1		9.4	7.1		8.3		33.4	33.4	34.6			
Progression Factor		1.00	1.00		0.70		1.00	1.00	1.00			
Incremental Delay, d2		0.9	0.2		0.2		6.3	6.3	17.3			
Delay (s)		10.3	7.3		6.1		39.7	39.7	51.9			
Level of Service		B	A		A		D	D	D			
Approach Delay (s)		9.5			6.1			44.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	13.4
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	720	110	620	550	620	160	920	940	480	760	70
Future Volume (veh/h)	110	720	110	620	550	620	160	920	940	480	760	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	112	735	102	633	561	491	163	939	724	490	776	63
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	145	851	118	269	613	536	268	1245	555	296	1723	139
Arrive On Green	0.08	0.28	0.26	0.16	0.35	0.34	0.08	0.35	0.35	0.09	0.36	0.34
Sat Flow, veh/h	1723	3028	420	1723	1736	1518	3442	3539	1578	3442	4790	387
Grp Volume(v), veh/h	112	417	420	633	555	497	163	939	724	490	548	291
Grp Sat Flow(s),veh/h/ln	1723	1719	1729	1723	1719	1535	1721	1770	1578	1721	1695	1787
Q Serve(g_s), s	8.1	29.5	29.5	20.0	39.5	39.7	5.9	30.0	45.0	11.0	15.8	16.0
Cycle Q Clear(g_c), s	8.1	29.5	29.5	20.0	39.5	39.7	5.9	30.0	45.0	11.0	15.8	16.0
Prop In Lane	1.00		0.24	1.00		0.99	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	145	483	486	269	607	542	268	1245	555	296	1220	643
V/C Ratio(X)	0.77	0.86	0.86	2.35	0.92	0.92	0.61	0.75	1.30	1.66	0.45	0.45
Avail Cap(c_a), veh/h	145	525	528	269	649	579	368	1245	555	296	1220	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	43.7	43.9	54.0	39.6	40.6	57.1	36.6	41.5	58.5	31.3	31.5
Incr Delay (d2), s/veh	20.1	12.2	12.2	619.3	16.5	18.1	0.8	4.3	149.7	310.1	1.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	15.7	15.8	55.8	21.4	19.6	2.8	15.3	42.7	18.0	7.6	8.3
LnGrp Delay(d),s/veh	77.4	55.9	56.2	673.3	56.1	58.8	57.9	40.9	191.2	368.6	32.5	33.8
LnGrp LOS	E	E	E	F	E	E	E	D	F	F	C	C
Approach Vol, veh/h		949			1685			1826			1329	
Approach Delay, s/veh		58.6			288.7			102.0			156.7	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	49.0	24.0	40.0	14.0	50.0	14.8	49.2
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	39.8	17.9	37.0	11.6	37.1	8.7	46.2
Max Q Clear Time (g_c+I1), s	13.0	47.0	22.0	31.5	7.9	18.0	10.1	41.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	5.4	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	161.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	760	90	890	690	540	90	760	890	440	750	90
Future Volume (veh/h)	110	760	90	890	690	540	90	760	890	440	750	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	116	800	0	937	726	0	95	800	915	463	789	89
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	154	802	359	734	1261	564	73	1148	1515	378	1258	142
Arrive On Green	0.09	0.23	0.00	0.22	0.37	0.00	0.04	0.32	0.32	0.11	0.39	0.38
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2757	3442	3201	361
Grp Volume(v), veh/h	116	800	0	937	726	0	95	800	915	463	436	442
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1378	1721	1770	1792
Q Serve(g_s), s	9.6	33.9	0.0	32.0	24.7	0.0	6.0	28.8	32.8	16.0	28.9	29.0
Cycle Q Clear(g_c), s	9.6	33.9	0.0	32.0	24.7	0.0	6.0	28.8	32.8	16.0	28.9	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	154	802	359	734	1261	564	73	1148	1515	378	695	704
V/C Ratio(X)	0.75	1.00	0.00	1.28	0.58	0.00	1.30	0.70	0.60	1.23	0.63	0.63
Avail Cap(c_a), veh/h	189	802	359	734	1261	564	73	1262	1604	378	753	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	55.9	0.0	56.9	37.0	0.0	69.9	43.0	22.4	64.9	35.6	35.9
Incr Delay (d2), s/veh	9.5	31.2	0.0	135.0	0.6	0.0	205.7	1.4	0.5	123.0	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	19.5	0.0	28.4	11.8	0.0	7.1	14.2	12.6	14.0	14.4	14.6
LnGrp Delay(d),s/veh	74.4	87.1	0.0	191.9	37.6	0.0	275.6	44.4	22.9	187.9	36.9	37.1
LnGrp LOS	E	F		F	D		F	D	C	F	D	D
Approach Vol, veh/h		916			1663			1810			1341	
Approach Delay, s/veh		85.4			124.6			45.6			89.1	
Approach LOS		F			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	51.3	36.0	38.5	10.0	61.3	17.0	57.5
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	34.8	34.0	35.9	8.0	31.0	11.6	26.7
Green Ext Time (p_c), s	0.0	10.0	0.0	0.0	0.0	15.1	0.0	9.1

Intersection Summary		
HCM 2010 Ctrl Delay		85.1
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1250	840	20	150	950	340	10	130	130	200	80	1060
Future Volume (veh/h)	1250	840	20	150	950	340	10	130	130	200	80	1060
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1316	884	20	158	1000	0	11	137	14	211	84	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1415	1931	44	186	834	373	18	203	20	259	370	314
Arrive On Green	0.42	0.56	0.55	0.10	0.24	0.00	0.01	0.06	0.06	0.15	0.20	0.00
Sat Flow, veh/h	3343	3439	78	1774	3438	1538	1774	3247	328	1774	1863	1583
Grp Volume(v), veh/h	1316	442	462	158	1000	0	11	74	77	211	84	0
Grp Sat Flow(s),veh/h/ln	1672	1720	1797	1774	1719	1538	1774	1770	1805	1774	1863	1583
Q Serve(g_s), s	47.8	19.4	19.4	11.2	31.0	0.0	0.8	5.2	5.3	14.7	4.8	0.0
Cycle Q Clear(g_c), s	47.8	19.4	19.4	11.2	31.0	0.0	0.8	5.2	5.3	14.7	4.8	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	1415	966	1009	186	834	373	18	111	113	259	370	314
V/C Ratio(X)	0.93	0.46	0.46	0.85	1.20	0.00	0.61	0.67	0.68	0.81	0.23	0.00
Avail Cap(c_a), veh/h	1466	966	1009	292	834	373	222	222	226	451	452	384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.0	16.5	16.6	56.2	48.4	0.0	63.0	58.6	58.6	52.8	43.0	0.0
Incr Delay (d2), s/veh	10.6	0.3	0.3	13.1	100.9	0.0	29.3	6.8	7.1	6.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	9.3	9.7	6.2	26.3	0.0	0.5	2.8	2.9	7.6	2.5	0.0
LnGrp Delay(d),s/veh	45.6	16.9	16.9	69.3	149.3	0.0	92.3	65.3	65.7	58.9	43.3	0.0
LnGrp LOS	D	B	B	E	F		F	E	E	E	D	
Approach Vol, veh/h		2220			1158			162			295	
Approach Delay, s/veh		33.9			138.3			67.3			54.5	
Approach LOS		C			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	75.7	5.3	29.4	58.1	35.0	21.2	13.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	13.2	21.4	2.8	6.8	49.8	33.0	16.7	7.3
Green Ext Time (p_c), s	0.2	19.3	0.0	1.1	2.3	0.0	0.5	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	68.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	400	240	550	370	0	170	0	110	0	0	0
Future Volume (veh/h)	0	400	240	550	370	0	170	0	110	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	421	195	579	389	0	179	0	22	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	3	693	317	596	2437	0	312	311	268	3	5	0
Arrive On Green	0.00	0.31	0.29	0.35	0.71	0.00	0.18	0.00	0.16	0.00	0.00	0.00
Sat Flow, veh/h	1774	2271	1039	1723	3529	0	1774	1770	1525	1774	3632	0
Grp Volume(v), veh/h	0	317	299	579	389	0	179	0	22	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1591	1723	1719	0	1774	1770	1525	1774	1770	0
Q Serve(g_s), s	0.0	10.9	11.2	22.9	2.6	0.0	6.4	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.9	11.2	22.9	2.6	0.0	6.4	0.0	0.9	0.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	3	525	485	596	2437	0	312	311	268	3	5	0
V/C Ratio(X)	0.00	0.61	0.62	0.97	0.16	0.00	0.57	0.00	0.08	0.00	0.00	0.00
Avail Cap(c_a), veh/h	153	868	803	596	2628	0	895	893	770	895	1786	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.5	20.9	22.3	3.3	0.0	26.2	0.0	24.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.3	29.5	0.0	0.0	1.7	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.3	5.1	15.7	1.2	0.0	3.3	0.0	0.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	21.7	22.2	51.8	3.3	0.0	27.9	0.0	24.5	0.0	0.0	0.0
LnGrp LOS		C	C	D	A		C		C			
Approach Vol, veh/h		616			968			201			0	
Approach Delay, s/veh		21.9			32.3			27.5			0.0	
Approach LOS		C			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	25.2		16.2	0.0	53.2		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	24.9	13.2		8.4	0.0	4.6		0.0
Green Ext Time (p_c), s	0.0	6.0		0.6	0.0	7.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		28.2
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	620	90	120	430	120	100	50	0	0	40	260
Future Vol, veh/h	80	620	90	120	430	120	100	50	0	0	40	260
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	674	98	130	467	130	109	54	0	0	43	283

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	776	477	205	863	618	74	336	0	0	64	0	0
Stage 1	195	195	-	282	282	-	-	-	-	-	-	-
Stage 2	581	282	-	581	336	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	315	~ 487	836	275	~ 405	988	1223	-	-	1538	-	-
Stage 1	807	739	-	725	678	-	-	-	-	-	-	-
Stage 2	499	678	-	499	642	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 436	822	-	~ 362	972	1213	-	-	1525	-	-
Mov Cap-2 Maneuver	-	~ 436	-	-	~ 362	-	-	-	-	-	-	-
Stage 1	728	733	-	654	612	-	-	-	-	-	-	-
Stage 2	92	~ 612	-	~ 35	637	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			5.5	0
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1213	-	-	-	488	-	1525	-	-
HCM Lane V/C Ratio	0.09	-	-	-	0.891	-	-	-	-
HCM Control Delay (s)	8.3	-	-	-	47.5	-	0	-	-
HCM Lane LOS	A	-	-	-	E	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	9.9	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	210	680	220	110	500	1260	800	120	1230	30
Future Volume (veh/h)	40	70	210	680	220	110	500	1260	800	120	1230	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	76	19	739	239	31	543	1370	480	130	1337	31
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	165	137	862	466	391	517	1700	727	98	1250	29
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.29	0.48	0.48	0.06	0.24	0.23
Sat Flow, veh/h	1774	1863	1540	3442	1863	1561	1774	3539	1513	1774	5111	119
Grp Volume(v), veh/h	43	76	19	739	239	31	543	1370	480	130	887	481
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1721	1863	1561	1774	1770	1513	1774	1695	1839
Q Serve(g_s), s	2.9	5.0	1.5	26.2	14.1	1.9	37.3	42.0	30.9	7.1	31.3	31.3
Cycle Q Clear(g_c), s	2.9	5.0	1.5	26.2	14.1	1.9	37.3	42.0	30.9	7.1	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	157	165	137	862	466	391	517	1700	727	98	829	450
V/C Ratio(X)	0.27	0.46	0.14	0.86	0.51	0.08	1.05	0.81	0.66	1.32	1.07	1.07
Avail Cap(c_a), veh/h	396	416	344	971	525	440	517	1700	727	98	829	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	55.4	53.8	45.8	41.3	36.7	45.4	28.2	25.3	60.5	48.3	48.4
Incr Delay (d2), s/veh	0.3	0.7	0.2	6.4	0.3	0.0	53.5	4.2	4.7	199.1	51.6	62.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	0.6	13.2	7.3	0.8	25.9	21.5	13.9	8.9	20.6	23.7
LnGrp Delay(d),s/veh	54.8	56.2	54.0	52.2	41.6	36.7	98.9	32.4	30.0	259.6	100.0	110.7
LnGrp LOS	D	E	D	D	D	D	F	C	C	F	F	F
Approach Vol, veh/h		138			1009			2393			1498	
Approach Delay, s/veh		55.4			49.2			47.0			117.3	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	65.5		15.4	41.3	35.3		36.1
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.0	38.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	9.1	44.0		7.0	39.3	33.3		28.2
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	68.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	20	90	10	20	20	210	1510	20	20	1060	620
Future Volume (veh/h)	390	20	90	10	20	20	210	1510	20	20	1060	620
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	424	22	39	11	22	17	228	1641	22	22	1152	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	7	534	33	60	31	144	1915	26	62	1731	0
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.33	0.08	0.54	0.52	0.04	0.49	0.00
Sat Flow, veh/h	421	22	1569	0	178	91	1774	3576	48	1774	3632	0
Grp Volume(v), veh/h	446	0	39	50	0	0	228	811	852	22	1152	0
Grp Sat Flow(s),veh/h/ln	443	0	1569	269	0	0	1774	1770	1854	1774	1770	0
Q Serve(g_s), s	0.0	0.0	2.3	0.0	0.0	0.0	11.0	53.1	53.4	1.6	33.3	0.0
Cycle Q Clear(g_c), s	46.0	0.0	2.3	46.0	0.0	0.0	11.0	53.1	53.4	1.6	33.3	0.0
Prop In Lane	0.95		1.00	0.22		0.34	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	203	0	534	124	0	0	144	948	993	62	1731	0
V/C Ratio(X)	2.20	0.00	0.07	0.40	0.00	0.00	1.58	0.86	0.86	0.35	0.67	0.00
Avail Cap(c_a), veh/h	203	0	534	124	0	0	144	1061	1112	144	2122	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.4	0.0	30.1	36.0	0.0	0.0	62.0	26.9	27.0	63.7	26.1	0.0
Incr Delay (d2), s/veh	555.7	0.0	0.0	0.8	0.0	0.0	290.7	5.9	5.7	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.8	0.0	1.0	1.3	0.0	0.0	17.0	27.5	28.8	0.8	16.2	0.0
LnGrp Delay(d),s/veh	606.2	0.0	30.1	36.8	0.0	0.0	352.7	32.8	32.7	64.9	26.5	0.0
LnGrp LOS	F		C	D			F	C	C	E	C	
Approach Vol, veh/h		485			50			1891			1174	
Approach Delay, s/veh		559.8			36.8			71.3			27.2	
Approach LOS		F			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	76.3		50.0	15.0	70.1		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	3.6	55.4		48.0	13.0	35.3		48.0
Green Ext Time (p_c), s	0.0	14.5		0.0	0.0	20.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		122.3
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	730	70	50	510	260	90	390	60	340	260	330
Future Volume (veh/h)	370	730	70	50	510	260	90	390	60	340	260	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	394	777	70	53	543	77	96	415	13	362	277	98
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	505	1371	124	69	1125	479	126	697	307	469	503	421
Arrive On Green	0.15	0.43	0.42	0.04	0.32	0.32	0.07	0.20	0.20	0.14	0.28	0.28
Sat Flow, veh/h	3343	3189	287	1774	3539	1506	1774	3539	1559	3343	1810	1515
Grp Volume(v), veh/h	394	419	428	53	543	77	96	415	13	362	277	98
Grp Sat Flow(s),veh/h/ln	1672	1719	1757	1774	1770	1506	1774	1770	1559	1672	1810	1515
Q Serve(g_s), s	9.9	16.1	16.1	2.6	10.8	3.2	4.7	9.4	0.6	9.2	11.4	4.4
Cycle Q Clear(g_c), s	9.9	16.1	16.1	2.6	10.8	3.2	4.7	9.4	0.6	9.2	11.4	4.4
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	739	756	69	1125	479	126	697	307	469	503	421
V/C Ratio(X)	0.78	0.57	0.57	0.77	0.48	0.16	0.76	0.60	0.04	0.77	0.55	0.23
Avail Cap(c_a), veh/h	1144	739	756	607	1473	627	607	1251	551	1144	640	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	18.8	18.9	41.8	24.1	21.5	40.0	32.0	28.5	36.3	27.0	24.4
Incr Delay (d2), s/veh	2.7	1.0	1.0	16.3	0.3	0.2	9.2	0.8	0.1	2.7	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.8	7.9	1.6	5.3	1.4	2.6	4.6	0.3	4.4	5.8	1.9
LnGrp Delay(d),s/veh	38.5	19.8	19.9	58.0	24.4	21.7	49.3	32.8	28.6	39.1	27.9	24.7
LnGrp LOS	D	B	B	E	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1241			673			524			737	
Approach Delay, s/veh		25.8			26.8			35.7			33.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	41.7	10.2	28.4	17.2	31.9	16.3	22.3
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	4.6	18.1	6.7	13.4	11.9	12.8	11.2	11.4
Green Ext Time (p_c), s	0.1	8.8	0.2	4.0	1.3	8.3	1.1	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	80	30	30	350	130	30	250	40	50	170	570
Future Volume (veh/h)	550	80	30	30	350	130	30	250	40	50	170	570
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1821	1900
Adj Flow Rate, veh/h	598	87	19	33	380	117	33	272	34	54	185	232
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	644	1565	332	53	545	165	53	652	81	86	373	324
Arrive On Green	0.36	0.54	0.53	0.03	0.21	0.20	0.03	0.21	0.21	0.05	0.22	0.23
Sat Flow, veh/h	1774	2907	617	1774	2654	805	1774	3171	392	1723	1730	1502
Grp Volume(v), veh/h	598	52	54	33	251	246	33	151	155	54	185	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1754	1774	1770	1689	1774	1770	1793	1723	1730	1502
Q Serve(g_s), s	33.0	1.4	1.5	1.9	13.4	13.8	1.9	7.5	7.7	3.1	9.6	14.6
Cycle Q Clear(g_c), s	33.0	1.4	1.5	1.9	13.4	13.8	1.9	7.5	7.7	3.1	9.6	14.6
Prop In Lane	1.00		0.35	1.00		0.48	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	644	953	945	53	364	347	53	364	369	86	373	324
V/C Ratio(X)	0.93	0.05	0.06	0.62	0.69	0.71	0.62	0.41	0.42	0.63	0.50	0.72
Avail Cap(c_a), veh/h	957	953	945	261	625	596	261	607	616	270	594	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	11.2	11.3	48.9	37.5	37.9	48.9	35.2	35.2	47.5	35.1	36.6
Incr Delay (d2), s/veh	11.2	0.0	0.0	11.5	2.4	2.7	11.5	0.8	0.8	7.4	1.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	0.7	0.7	1.1	6.8	6.7	1.1	3.8	3.9	1.7	4.7	6.3
LnGrp Delay(d),s/veh	42.4	11.2	11.3	60.4	39.9	40.5	60.4	35.9	36.0	55.0	36.2	39.6
LnGrp LOS	D	B	B	E	D	D	E	D	D	D	D	D
Approach Vol, veh/h		704			530			339			471	
Approach Delay, s/veh		37.7			41.5			38.3			40.0	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	26.0	8.0	58.9	8.0	27.0	42.0	25.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	5.1	9.7	3.9	3.5	3.9	16.6	35.0	15.8
Green Ext Time (p_c), s	0.1	4.4	0.0	3.8	0.0	4.0	2.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	420	20	120	600	70	10	160	130	20	80	260
Future Volume (veh/h)	430	420	20	120	600	70	10	160	130	20	80	260
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	457	447	10	128	638	69	11	170	23	21	85	51
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	534	883	751	200	918	99	77	283	237	101	308	261
Arrive On Green	0.31	0.49	0.49	0.12	0.29	0.27	0.04	0.15	0.15	0.06	0.17	0.17
Sat Flow, veh/h	1723	1810	1538	1723	3124	337	1774	1863	1557	1774	1863	1578
Grp Volume(v), veh/h	457	447	10	128	351	356	11	170	23	21	85	51
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1742	1774	1863	1557	1774	1863	1578
Q Serve(g_s), s	21.3	14.4	0.3	6.1	15.5	15.6	0.5	7.3	1.1	1.0	3.4	2.4
Cycle Q Clear(g_c), s	21.3	14.4	0.3	6.1	15.5	15.6	0.5	7.3	1.1	1.0	3.4	2.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	534	883	751	200	505	512	77	283	237	101	308	261
V/C Ratio(X)	0.86	0.51	0.01	0.64	0.69	0.70	0.14	0.60	0.10	0.21	0.28	0.20
Avail Cap(c_a), veh/h	725	883	751	343	645	654	228	1220	1020	228	784	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	14.9	11.3	36.1	26.8	27.0	39.4	33.8	31.2	38.5	31.2	30.8
Incr Delay (d2), s/veh	7.5	0.5	0.0	3.4	2.3	2.3	0.8	2.0	0.2	1.0	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	7.2	0.1	3.1	7.6	7.8	0.3	3.9	0.5	0.5	1.8	1.1
LnGrp Delay(d),s/veh	35.2	15.4	11.3	39.5	29.0	29.3	40.2	35.9	31.4	39.5	31.7	31.1
LnGrp LOS	D	B	B	D	C	C	D	D	C	D	C	C
Approach Vol, veh/h		914			835			204			157	
Approach Delay, s/veh		25.2			30.7			35.6			32.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	45.7	7.7	18.1	30.5	29.1	8.8	17.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	8.1	16.4	2.5	5.4	23.3	17.6	3.0	9.3
Green Ext Time (p_c), s	0.2	7.6	0.0	1.7	1.1	5.2	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	690	120	170	610	30	330	20	360	30	10	50
Future Volume (veh/h)	70	690	120	170	610	30	330	20	360	30	10	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.95	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	719	113	177	635	29	344	21	139	31	10	49
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	113	1231	193	229	1610	73	471	606	507	459	88	433
Arrive On Green	0.07	0.41	0.39	0.13	0.48	0.46	0.33	0.33	0.33	0.33	0.33	0.31
Sat Flow, veh/h	1723	2971	467	1723	3340	152	1319	1863	1557	1205	271	1330
Grp Volume(v), veh/h	73	416	416	177	326	338	344	21	139	31	0	59
Grp Sat Flow(s),veh/h/ln	1723	1719	1719	1723	1719	1773	1319	1863	1557	1205	0	1601
Q Serve(g_s), s	3.9	17.6	17.7	9.4	11.5	11.5	23.3	0.7	6.2	1.7	0.0	2.5
Cycle Q Clear(g_c), s	3.9	17.6	17.7	9.4	11.5	11.5	25.8	0.7	6.2	2.4	0.0	2.5
Prop In Lane	1.00		0.27	1.00		0.09	1.00		1.00	1.00		0.83
Lane Grp Cap(c), veh/h	113	712	712	229	829	855	471	606	507	459	0	521
V/C Ratio(X)	0.65	0.58	0.58	0.77	0.39	0.39	0.73	0.03	0.27	0.07	0.00	0.11
Avail Cap(c_a), veh/h	567	948	948	384	829	855	615	810	677	591	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	21.3	21.6	39.5	15.6	15.7	31.3	21.7	23.6	22.5	0.0	22.6
Incr Delay (d2), s/veh	6.1	1.6	1.6	5.5	0.7	0.6	3.1	0.0	0.3	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	8.6	8.7	4.8	5.6	5.8	8.9	0.4	2.7	0.6	0.0	1.1
LnGrp Delay(d),s/veh	49.1	23.0	23.2	45.0	16.3	16.3	34.4	21.7	23.8	22.6	0.0	22.7
LnGrp LOS	D	C	C	D	B	B	C	C	C	C		C
Approach Vol, veh/h		905			841			504			90	
Approach Delay, s/veh		25.2			22.3			31.0			22.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.5	43.1		34.7	10.2	49.4		34.7
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	11.4	19.7		4.5	5.9	13.5		27.8
Green Ext Time (p_c), s	0.3	17.3		2.3	0.2	18.2		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	840	70	210	480	180	50	190	290	300	0	50
Future Volume (veh/h)	30	840	70	210	480	180	50	190	290	300	0	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	32	903	71	226	516	91	54	204	86	323	0	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1124	88	271	1620	719	335	351	276	351	368	313
Arrive On Green	0.03	0.34	0.32	0.15	0.46	0.46	0.19	0.19	0.19	0.20	0.00	0.00
Sat Flow, veh/h	1774	3313	260	1774	3539	1570	1774	1863	1465	1774	1863	1583
Grp Volume(v), veh/h	32	482	492	226	516	91	54	204	86	323	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1804	1774	1770	1570	1774	1863	1465	1774	1863	1583
Q Serve(g_s), s	2.3	32.6	32.6	16.3	12.2	4.4	3.3	13.1	6.7	23.5	0.0	0.0
Cycle Q Clear(g_c), s	2.3	32.6	32.6	16.3	12.2	4.4	3.3	13.1	6.7	23.5	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	600	612	271	1620	719	335	351	276	351	368	313
V/C Ratio(X)	0.53	0.80	0.80	0.83	0.32	0.13	0.16	0.58	0.31	0.92	0.00	0.00
Avail Cap(c_a), veh/h	148	619	631	351	1642	728	486	510	401	351	368	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.4	39.5	39.6	54.1	22.6	20.5	44.6	48.6	46.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	6.9	8.5	8.4	12.6	0.2	0.2	0.2	1.5	0.6	28.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	17.4	17.7	8.9	6.0	1.9	1.7	6.9	2.7	14.3	0.0	0.0
LnGrp Delay(d),s/veh	69.4	48.0	48.0	66.7	22.9	20.7	44.9	50.1	46.6	80.5	0.0	0.0
LnGrp LOS	E	D	D	E	C	C	D	D	D	F		
Approach Vol, veh/h		1006			833			344			323	
Approach Delay, s/veh		48.7			34.5			48.4			80.5	
Approach LOS		D			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.1	48.6		30.0	8.5	64.2		28.8
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	18.3	34.6		25.5	4.3	14.2		15.1
Green Ext Time (p_c), s	0.3	8.0		0.0	0.0	27.5		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	220	50	160	410	20	30	630	310	0	270	210
Future Volume (veh/h)	310	220	50	160	410	20	30	630	310	0	270	210
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	313	222	34	162	414	0	30	636	256	0	273	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	1151	174	203	531	451	403	784	315	0	1127	0
Arrive On Green	0.20	0.37	0.37	0.11	0.28	0.00	0.32	0.32	0.32	0.00	0.32	0.00
Sat Flow, veh/h	1774	3079	464	1774	1863	1583	1098	2462	990	0	3725	0
Grp Volume(v), veh/h	313	126	130	162	414	0	30	457	435	0	273	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1863	1583	1098	1770	1682	0	1770	0
Q Serve(g_s), s	10.6	3.0	3.1	5.5	12.7	0.0	1.3	14.7	14.8	0.0	3.5	0.0
Cycle Q Clear(g_c), s	10.6	3.0	3.1	5.5	12.7	0.0	4.8	14.7	14.8	0.0	3.5	0.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.59	0.00		0.00
Lane Grp Cap(c), veh/h	361	661	663	203	531	451	403	564	536	0	1127	0
V/C Ratio(X)	0.87	0.19	0.20	0.80	0.78	0.00	0.07	0.81	0.81	0.00	0.24	0.00
Avail Cap(c_a), veh/h	571	854	856	857	1199	1019	601	883	839	0	1766	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	23.9	13.1	13.1	26.8	20.4	0.0	17.4	19.5	19.5	0.0	15.6	0.0
Incr Delay (d2), s/veh	5.1	0.1	0.1	2.7	1.0	0.0	0.0	1.5	1.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	1.4	1.5	2.9	6.6	0.0	0.4	7.3	7.0	0.0	1.7	0.0
LnGrp Delay(d),s/veh	29.0	13.2	13.2	29.5	21.4	0.0	17.4	21.0	21.1	0.0	15.7	0.0
LnGrp LOS	C	B	B	C	C		B	C	C		B	
Approach Vol, veh/h		569			576			922			273	
Approach Delay, s/veh		21.9			23.7			20.9			15.7	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	27.2		23.8	16.6	21.7		23.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	12.5	5.1		5.5	12.6	14.7		16.8
Green Ext Time (p_c), s	0.1	1.3		2.7	0.1	1.3		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	350	70	240	260	30	340	850	590	40	430	190
Future Volume (veh/h)	170	350	70	240	260	30	340	850	590	40	430	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	177	365	61	250	271	7	354	885	292	42	448	147
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	229	614	102	303	864	386	400	1454	636	87	893	282
Arrive On Green	0.13	0.20	0.19	0.17	0.24	0.24	0.23	0.42	0.42	0.05	0.24	0.23
Sat Flow, veh/h	1774	3034	502	1774	3539	1583	1723	3438	1504	1723	3706	1168
Grp Volume(v), veh/h	177	211	215	250	271	7	354	885	292	42	396	199
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1583	1723	1719	1504	1723	1647	1581
Q Serve(g_s), s	10.0	11.2	11.5	14.1	6.5	0.3	20.6	20.8	14.4	2.5	10.8	11.4
Cycle Q Clear(g_c), s	10.0	11.2	11.5	14.1	6.5	0.3	20.6	20.8	14.4	2.5	10.8	11.4
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	229	358	357	303	864	386	400	1454	636	87	794	381
V/C Ratio(X)	0.77	0.59	0.60	0.83	0.31	0.02	0.89	0.61	0.46	0.49	0.50	0.52
Avail Cap(c_a), veh/h	530	614	613	530	1228	549	648	1855	812	183	889	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	37.5	37.8	41.6	32.1	29.8	38.5	23.3	21.5	48.0	34.0	34.7
Incr Delay (d2), s/veh	5.5	1.6	1.6	5.7	0.2	0.0	5.3	0.4	0.5	1.6	1.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	5.6	5.8	7.4	3.2	0.2	10.4	9.9	6.1	1.2	5.0	5.3
LnGrp Delay(d),s/veh	49.3	39.1	39.4	47.3	32.3	29.8	43.8	23.7	22.0	49.5	35.0	37.1
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		603			528			1531			637	
Approach Delay, s/veh		42.2			39.4			28.0			36.6	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	47.9	21.7	25.0	28.1	29.0	17.4	29.3
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5
Max Q Clear Time (g_c+I1), s	4.5	22.8	16.1	13.5	22.6	13.4	12.0	8.5
Green Ext Time (p_c), s	0.0	17.8	0.6	4.2	0.5	9.6	0.4	4.4

Intersection Summary		
HCM 2010 Ctrl Delay		34.1
HCM 2010 LOS		C

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	210	0	20	0	0	0	20	560	0	0	120	70
Future Vol, veh/h	210	0	20	0	0	0	20	560	0	0	120	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	228	0	22	0	0	0	22	609	0	0	130	76
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.3	0	15.4	10
HCM LOS	B	-	C	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	0%	91%	0%	0%	0%
Vol Thru, %	90%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	9%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	207	373	230	0	120	70
LT Vol	20	0	210	0	0	0
Through Vol	187	373	0	0	120	0
RT Vol	0	0	20	0	0	70
Lane Flow Rate	225	406	250	0	130	76
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.354	0.634	0.417	0	0.225	0.116
Departure Headway (Hd)	5.676	5.627	5.998	6.45	6.2	5.488
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	636	641	600	0	579	653
Service Time	3.401	3.352	4.029	4.5	3.935	3.223
HCM Lane V/C Ratio	0.354	0.633	0.417	0	0.225	0.116
HCM Control Delay	11.5	17.6	13.3	9.5	10.7	8.9
HCM Lane LOS	B	C	B	N	B	A
HCM 95th-tile Q	1.6	4.5	2	0	0.9	0.4

Intersection	
Int Delay, s/veh	17.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	610	20	20	20	10	0
Future Vol, veh/h	610	20	20	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	663	22	22	22	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	76	5	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	915	1068	1607	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	902	1068	1607	-	-	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	3.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1607	-	902	1068	-	-
HCM Lane V/C Ratio	0.014	-	0.735	0.02	-	-
HCM Control Delay (s)	7.3	0	19.2	8.4	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	6.8	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	690	100	180	610	170	210	570	290	80	350	140
Future Volume (veh/h)	290	690	100	180	610	170	210	570	290	80	350	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	296	704	93	184	622	43	214	582	180	82	357	108
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	354	1021	135	239	928	407	265	1076	475	127	605	180
Arrive On Green	0.20	0.33	0.31	0.13	0.26	0.26	0.15	0.31	0.31	0.07	0.23	0.22
Sat Flow, veh/h	1774	3120	412	1774	3539	1554	1723	3438	1519	1723	2601	775
Grp Volume(v), veh/h	296	399	398	184	622	43	214	582	180	82	234	231
Grp Sat Flow(s),veh/h/ln	1774	1770	1762	1774	1770	1554	1723	1719	1519	1723	1719	1656
Q Serve(g_s), s	16.9	20.7	20.8	10.6	16.6	2.2	12.7	14.8	9.7	4.9	12.8	13.2
Cycle Q Clear(g_c), s	16.9	20.7	20.8	10.6	16.6	2.2	12.7	14.8	9.7	4.9	12.8	13.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	354	579	577	239	928	407	265	1076	475	127	400	385
V/C Ratio(X)	0.84	0.69	0.69	0.77	0.67	0.11	0.81	0.54	0.38	0.65	0.59	0.60
Avail Cap(c_a), veh/h	538	768	765	314	1090	479	294	1310	579	152	513	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	30.8	31.0	44.1	34.9	29.5	43.1	30.0	28.3	47.5	36.0	36.4
Incr Delay (d2), s/veh	6.9	1.7	1.7	8.2	1.3	0.1	14.0	0.4	0.5	6.9	1.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	10.4	10.3	5.7	8.3	1.0	7.0	7.1	4.1	2.6	6.2	6.2
LnGrp Delay(d),s/veh	47.5	32.5	32.7	52.3	36.1	29.7	57.1	30.4	28.8	54.5	37.3	37.9
LnGrp LOS	D	C	C	D	D	C	E	C	C	D	D	D
Approach Vol, veh/h		1093			849			976			547	
Approach Delay, s/veh		36.6			39.3			36.0			40.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	38.5	20.2	28.5	25.1	31.7	11.8	37.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	17.2	44.3	16.5	30.0	30.5	31.0	7.8	38.7
Max Q Clear Time (g_c+I1), s	12.6	22.8	14.7	15.2	18.9	18.6	6.9	16.8
Green Ext Time (p_c), s	0.2	9.8	0.1	6.4	0.7	7.1	0.0	7.7

Intersection Summary		
HCM 2010 Ctrl Delay		37.7
HCM 2010 LOS		D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	480	1370	940	30	40	290
Future Volume (vph)	480	1370	940	30	40	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3422		1770	1583
Flt Permitted	0.11	1.00	1.00		0.95	1.00
Satd. Flow (perm)	206	3438	3422		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	505	1442	989	32	42	305
RTOR Reduction (vph)	0	0	3	0	0	231
Lane Group Flow (vph)	505	1442	1018	0	42	74
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	59.0	63.6	34.6		22.9	22.9
Effective Green, g (s)	60.2	64.2	35.2		23.1	23.1
Actuated g/C Ratio	0.63	0.67	0.37		0.24	0.24
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	527	2316	1263		429	383
v/s Ratio Prot	c0.25	0.42	0.30		0.02	
v/s Ratio Perm	c0.35					c0.05
v/c Ratio	0.96	0.62	0.81		0.10	0.19
Uniform Delay, d1	26.5	8.7	27.0		28.0	28.7
Progression Factor	0.89	0.52	1.00		1.00	1.00
Incremental Delay, d2	22.5	0.4	3.9		0.0	0.1
Delay (s)	46.1	4.9	30.9		28.1	28.8
Level of Service	D	A	C		C	C
Approach Delay (s)		15.6	30.9		28.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	12.2
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	400	20	670	550	620	30	580	1010	660	520	40
Future Volume (veh/h)	50	400	20	670	550	620	30	580	1010	660	520	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	52	412	19	691	567	0	31	598	961	680	536	38
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	83	724	33	833	1429	639	72	801	1300	671	1278	90
Arrive On Green	0.05	0.21	0.20	0.25	0.42	0.00	0.04	0.23	0.23	0.20	0.39	0.38
Sat Flow, veh/h	1774	3446	159	3343	3438	1538	1723	3438	2684	3343	3257	230
Grp Volume(v), veh/h	52	211	220	691	567	0	31	598	961	680	282	292
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1672	1719	1538	1723	1719	1342	1672	1719	1769
Q Serve(g_s), s	4.4	16.5	16.6	30.2	17.8	0.0	2.7	24.9	36.0	31.0	18.4	18.6
Cycle Q Clear(g_c), s	4.4	16.5	16.6	30.2	17.8	0.0	2.7	24.9	36.0	31.0	18.4	18.6
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	83	372	386	833	1429	639	72	801	1300	671	674	694
V/C Ratio(X)	0.62	0.57	0.57	0.83	0.40	0.00	0.43	0.75	0.74	1.01	0.42	0.42
Avail Cap(c_a), veh/h	126	527	547	996	1803	807	290	801	1300	671	674	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	54.7	54.8	54.9	31.6	0.0	72.2	55.0	32.2	61.7	34.1	34.2
Incr Delay (d2), s/veh	2.8	2.9	2.8	6.5	0.4	0.0	1.5	3.8	2.3	38.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.4	8.7	14.7	8.5	0.0	1.3	12.3	16.8	17.8	8.9	9.2
LnGrp Delay(d),s/veh	75.1	57.6	57.6	61.4	32.0	0.0	73.8	58.8	34.5	99.8	34.5	34.7
LnGrp LOS	E	E	E	E	C		E	E	C	F	C	C
Approach Vol, veh/h		483			1258			1590			1254	
Approach Delay, s/veh		59.5			48.1			44.4			69.9	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.5	37.0	10.4	64.6	11.3	68.2	35.0	40.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	32.2	18.6	4.7	20.6	6.4	19.8	33.0	38.0
Green Ext Time (p_c), s	4.3	12.3	0.0	11.6	0.0	16.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	290	120	450	40	1310	520	330	760	30
Future Volume (veh/h)	0	0	30	290	120	450	40	1310	520	330	760	30
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				216	251	276	42	1379	0	347	800	30
Adj No. of Lanes				1	1	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				406	427	357	386	1751	744	305	2383	89
Arrive On Green				0.23	0.23	0.23	0.47	0.47	0.00	0.17	0.68	0.68
Sat Flow, veh/h				1774	1863	1561	658	3725	1583	1774	3479	130
Grp Volume(v), veh/h				216	251	276	42	1379	0	347	407	423
Grp Sat Flow(s),veh/h/ln				1774	1863	1561	658	1863	1583	1774	1770	1839
Q Serve(g_s), s				9.9	11.2	15.4	3.4	29.0	0.0	16.0	8.8	8.8
Cycle Q Clear(g_c), s				9.9	11.2	15.4	3.4	29.0	0.0	16.0	8.8	8.8
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h				406	427	357	386	1751	744	305	1212	1260
V/C Ratio(X)				0.53	0.59	0.77	0.11	0.79	0.00	1.14	0.34	0.34
Avail Cap(c_a), veh/h				686	721	604	473	2242	953	305	1445	1502
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				31.5	32.0	33.6	14.0	20.7	0.0	38.5	6.0	6.0
Incr Delay (d2), s/veh				0.4	0.5	1.4	0.0	1.1	0.0	94.1	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	5.8	6.8	0.6	15.0	0.0	15.8	4.2	4.4
LnGrp Delay(d),s/veh				31.9	32.4	35.0	14.0	21.8	0.0	132.6	6.1	6.1
LnGrp LOS				C	C	C	B	C		F	A	A
Approach Vol, veh/h					743			1421			1177	
Approach Delay, s/veh					33.2			21.6			43.4	
Approach LOS					C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	47.7				67.7		25.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	18.0	31.0				10.8		17.4
Green Ext Time (p_c), s	0.0	12.8				17.3		1.6

Intersection Summary			
HCM 2010 Ctrl Delay			31.9
HCM 2010 LOS			C

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1160	0	0	710	440	640
Future Volume (vph)	1160	0	0	710	440	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1261	0	0	772	478	696
RTOR Reduction (vph)	0	0	0	23	0	402
Lane Group Flow (vph)	1261	0	0	749	478	294
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	21.1			21.0	21.0	22.0
Effective Green, g (s)	22.1			22.0	22.0	22.0
Actuated g/C Ratio	0.42			0.42	0.42	0.42
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2116			1176	1449	1176
v/s Ratio Prot	c0.25			c0.27	0.14	0.11
v/s Ratio Perm						
v/c Ratio	0.60			0.64	0.33	0.25
Uniform Delay, d1	11.6			11.9	10.1	9.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			1.1	0.1	0.1
Delay (s)	12.0			13.0	10.2	9.8
Level of Service	B			B	B	A
Approach Delay (s)		12.0	13.0		10.0	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	640	330	350	800	320	300	360	730	280	250	570
Future Volume (veh/h)	540	640	330	350	800	320	300	360	730	280	250	570
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	581	688	312	376	860	0	323	387	567	301	269	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	367	568	257	299	1054	472	357	543	485	299	496	0
Arrive On Green	0.11	0.24	0.23	0.17	0.31	0.00	0.20	0.31	0.30	0.17	0.27	0.00
Sat Flow, veh/h	3442	2365	1073	1723	3438	1538	1774	1770	1580	1723	1810	0
Grp Volume(v), veh/h	581	515	485	376	860	0	323	387	567	301	269	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1668	1723	1719	1538	1774	1770	1580	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	29.1	46.0	26.0	19.0	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	29.1	46.0	26.0	19.0	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	367	425	400	299	1054	472	357	543	485	299	496	0
V/C Ratio(X)	1.58	1.21	1.21	1.26	0.82	0.00	0.90	0.71	1.17	1.01	0.54	0.00
Avail Cap(c_a), veh/h	367	425	400	299	1054	472	367	543	485	299	496	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.0	57.0	57.3	62.0	48.1	0.0	58.5	46.1	52.5	62.0	46.4	0.0
Incr Delay (d2), s/veh	274.9	115.4	116.5	140.7	6.5	0.0	24.0	6.9	96.7	54.0	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	31.2	29.5	24.0	17.4	0.0	15.5	15.2	33.1	16.8	10.0	0.0
LnGrp Delay(d),s/veh	341.9	172.4	173.8	202.7	54.5	0.0	82.5	53.0	149.2	116.1	49.8	0.0
LnGrp LOS	F	F	F	F	D		F	D	F	F	D	
Approach Vol, veh/h		1581			1236			1277			570	
Approach Delay, s/veh		235.1			99.6			103.2			84.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	34.2	45.8	20.0	50.0	30.0	50.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	28.0	38.0	28.7	21.0	18.0	36.7	28.0	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	144.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	1200	0	0	680	240	160	970	110	0	0	0
Future Volume (veh/h)	410	1200	0	0	680	240	160	970	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	423	1237	0	0	701	229	165	1000	78			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	470	2091	0	0	1100	359	607	1212	524			
Arrive On Green	0.27	1.00	0.00	0.00	0.42	0.41	0.34	0.34	0.34			
Sat Flow, veh/h	3442	3632	0	0	2706	853	1774	3539	1531			
Grp Volume(v), veh/h	423	1237	0	0	475	455	165	1000	78			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1697	1774	1770	1531			
Q Serve(g_s), s	14.2	0.0	0.0	0.0	25.5	25.6	8.1	31.1	4.2			
Cycle Q Clear(g_c), s	14.2	0.0	0.0	0.0	25.5	25.6	8.1	31.1	4.2			
Prop In Lane	1.00		0.00	0.00		0.50	1.00		1.00			
Lane Grp Cap(c), veh/h	470	2091	0	0	745	714	607	1212	524			
V/C Ratio(X)	0.90	0.59	0.00	0.00	0.64	0.64	0.27	0.83	0.15			
Avail Cap(c_a), veh/h	470	2091	0	0	745	714	724	1445	625			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	42.8	0.0	0.0	0.0	27.5	27.7	28.6	36.2	27.3			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	4.1	4.3	0.3	3.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	0.0	0.0	0.0	13.3	12.8	4.0	15.8	1.8			
LnGrp Delay(d),s/veh	45.3	0.1	0.0	0.0	31.6	32.0	28.9	39.8	27.5			
LnGrp LOS	D	A			C	C	C	D	C			
Approach Vol, veh/h		1660			930			1243				
Approach Delay, s/veh		11.6			31.8			37.6				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		74.9			20.4	54.5		45.1
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		62.1			* 16	41.7		48.8
Max Q Clear Time (g_c+I1), s		2.0			16.2	27.6		33.1
Green Ext Time (p_c), s		32.7			0.0	11.6		7.8

Intersection Summary			
HCM 2010 Ctrl Delay			24.9
HCM 2010 LOS			C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1360	30	180	660	0	0	0	0	240	910	350
Future Volume (veh/h)	0	1360	30	180	660	0	0	0	0	240	910	350
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1432	0	189	695	0				253	958	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1404	0	218	1957	0				273	1095	602
Arrive On Green	0.00	0.40	0.00	0.25	1.00	0.00				0.38	0.38	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				718	2879	1583
Grp Volume(v), veh/h	0	1432	0	189	695	0				644	567	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1827	1770	1583
Q Serve(g_s), s	0.0	47.6	0.0	12.3	0.0	0.0				40.5	35.1	0.0
Cycle Q Clear(g_c), s	0.0	47.6	0.0	12.3	0.0	0.0				40.5	35.1	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.39		1.00
Lane Grp Cap(c), veh/h	0	1404	0	218	1957	0				695	673	602
V/C Ratio(X)	0.00	1.02	0.00	0.87	0.36	0.00				0.93	0.84	0.00
Avail Cap(c_a), veh/h	0	1404	0	310	1957	0				716	693	620
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.73	0.73	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	36.2	0.0	44.3	0.0	0.0				35.6	33.9	0.0
Incr Delay (d2), s/veh	0.0	29.2	0.0	13.5	0.4	0.0				18.0	9.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	28.9	0.0	6.8	0.1	0.0				23.9	18.9	0.0
LnGrp Delay(d),s/veh	0.0	65.4	0.0	57.8	0.4	0.0				53.6	43.1	0.0
LnGrp LOS		F		E	A					D	D	
Approach Vol, veh/h		1432			884						1211	
Approach Delay, s/veh		65.4			12.7						48.7	
Approach LOS		E			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.8	51.6		49.6		70.4		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 21	39.1		* 47		64.1		
Max Q Clear Time (g_c+I1), s	14.3	49.6		42.5		2.0		
Green Ext Time (p_c), s	0.3	0.0		3.0		34.0		

Intersection Summary		
HCM 2010 Ctrl Delay		46.4
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	440	220	550	500	160	390	690	450	240	690	200
Future Volume (veh/h)	370	440	220	550	500	160	390	690	450	240	690	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	402	478	117	598	543	151	424	750	196	261	750	199
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	458	646	289	656	655	181	408	1184	529	289	736	195
Arrive On Green	0.14	0.19	0.19	0.20	0.25	0.24	0.23	0.33	0.33	0.16	0.27	0.26
Sat Flow, veh/h	3343	3438	1538	3343	2651	734	1774	3539	1580	1774	2754	731
Grp Volume(v), veh/h	402	478	117	598	351	343	424	750	196	261	482	467
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1666	1774	1770	1580	1774	1770	1716
Q Serve(g_s), s	15.9	17.7	9.0	23.6	26.1	26.3	31.0	24.1	12.7	19.5	36.0	36.0
Cycle Q Clear(g_c), s	15.9	17.7	9.0	23.6	26.1	26.3	31.0	24.1	12.7	19.5	36.0	36.0
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	458	646	289	656	425	412	408	1184	529	289	473	458
V/C Ratio(X)	0.88	0.74	0.41	0.91	0.83	0.83	1.04	0.63	0.37	0.90	1.02	1.02
Avail Cap(c_a), veh/h	521	919	411	769	523	507	408	1184	529	408	473	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.0	51.6	48.1	53.0	48.0	48.4	51.9	37.8	34.0	55.4	49.4	49.6
Incr Delay (d2), s/veh	14.0	0.9	0.3	12.7	7.3	8.0	54.9	1.1	0.4	14.8	46.3	46.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	8.5	3.8	12.0	13.3	13.0	21.3	12.0	5.6	10.8	23.5	22.9
LnGrp Delay(d),s/veh	71.0	52.5	48.4	65.7	55.3	56.3	106.8	39.0	34.5	70.1	95.6	96.6
LnGrp LOS	E	D	D	E	E	E	F	D	C	E	F	F
Approach Vol, veh/h		997			1292			1370			1210	
Approach Delay, s/veh		59.5			60.4			59.3			90.5	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	49.1	30.4	29.3	35.0	40.0	22.4	37.3
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	21.5	26.1	25.6	19.7	33.0	38.0	17.9	28.3
Green Ext Time (p_c), s	0.3	6.4	0.6	4.1	0.0	0.0	0.3	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	67.4
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	70	70	180	50	0	0	0	0	137	0	20
Future Vol, veh/h	10	70	70	180	50	0	0	0	0	137	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	76	76	196	54	0	0	0	0	149	0	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	54	0	0	76	0	0				544	544	54
Stage 1	-	-	-	-	-	-				446	446	-
Stage 2	-	-	-	-	-	-				98	98	-
Critical Hdwy	4.12	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1523	-	0				500	446	1013
Stage 1	-	-	-	-	-	0				645	574	-
Stage 2	-	-	-	-	-	0				926	814	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1551	-	-	1523	-	-				432	0	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-				432	0	-
Stage 1	-	-	-	-	-	-				562	0	-
Stage 2	-	-	-	-	-	-				919	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	6	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	1551	-	-	1523	-	432	1013
HCM Lane V/C Ratio	0.007	-	-	0.128	-	0.345	0.021
HCM Control Delay (s)	7.3	-	-	7.7	-	17.7	8.6
HCM Lane LOS	A	-	-	A	-	C	A
HCM 95th %tile Q(veh)	0	-	-	0.4	-	1.5	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	157	0	0	140	363	90	0	70	0	0	0
Future Vol, veh/h	50	157	0	0	140	363	90	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	171	0	0	152	395	98	0	76	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	152	0	-	-	-	0	431	431	171
Stage 1	-	-	-	-	-	-	279	279	-
Stage 2	-	-	-	-	-	-	152	152	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1429	-	0	0	-	-	581	517	873
Stage 1	-	-	0	0	-	-	768	680	-
Stage 2	-	-	0	0	-	-	876	772	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1429	-	-	-	-	-	559	0	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	559	0	-
Stage 1	-	-	-	-	-	-	739	0	-
Stage 2	-	-	-	-	-	-	876	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.8	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	559	873	1429	-	-	-
HCM Lane V/C Ratio	0.175	0.087	0.038	-	-	-
HCM Control Delay (s)	12.8	9.5	7.6	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.6	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	204	0	0	180	313	10	10	130	0	0	0
Future Vol, veh/h	10	204	0	0	180	313	10	10	130	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	222	0	0	196	340	11	11	141	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.1	11.4	10.1
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	130	10	102	102	180	313
LT Vol	10	0	10	0	0	0	0
Through Vol	10	0	0	102	102	180	0
RT Vol	0	130	0	0	0	0	313
Lane Flow Rate	22	141	11	111	111	196	340
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.041	0.226	0.02	0.189	0.135	0.305	0.463
Departure Headway (Hd)	6.709	5.754	6.641	6.136	4.384	5.606	4.9
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	534	625	539	585	816	646	738
Service Time	4.445	3.49	4.376	3.871	2.119	3.306	2.6
HCM Lane V/C Ratio	0.041	0.226	0.02	0.19	0.136	0.303	0.461
HCM Control Delay	9.7	10.2	9.5	10.3	7.8	10.7	11.8
HCM Lane LOS	A	B	A	B	A	B	B
HCM 95th-tile Q	0.1	0.9	0.1	0.7	0.5	1.3	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	294	0	0	0	413	50	0	0	100	80
Future Volume (veh/h)	40	0	294	0	0	0	413	50	0	0	100	80
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	43	0	33				449	54	0	0	109	16
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	81	0	73				551	1227	0	0	374	316
Arrive On Green	0.05	0.00	0.05				0.31	0.66	0.00	0.00	0.20	0.20
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1575
Grp Volume(v), veh/h	43	0	33				449	54	0	0	109	16
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1575
Q Serve(g_s), s	0.6	0.0	0.6				6.3	0.3	0.0	0.0	1.3	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.6				6.3	0.3	0.0	0.0	1.3	0.2
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	81	0	73				551	1227	0	0	374	316
V/C Ratio(X)	0.53	0.00	0.45				0.81	0.04	0.00	0.00	0.29	0.05
Avail Cap(c_a), veh/h	1571	0	1402				1323	4145	0	0	4145	3506
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	12.6				8.6	1.6	0.0	0.0	9.2	8.7
Incr Delay (d2), s/veh	2.0	0.0	1.6				1.1	0.0	0.0	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5				3.2	0.2	0.0	0.0	0.7	0.1
LnGrp Delay(d),s/veh	14.6	0.0	14.2				9.7	1.7	0.0	0.0	9.7	8.8
LnGrp LOS	B		B				A	A			A	A
Approach Vol, veh/h		76						503			125	
Approach Delay, s/veh		14.4						8.9			9.6	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.9		5.2	12.4	9.4		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.3		2.6	8.3	3.3		
Green Ext Time (p_c), s		1.5		0.0	0.2	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	231	10	0	10	20	10	20	31	10	10	20	287
Future Vol, veh/h	231	10	0	10	20	10	20	31	10	10	20	287
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	251	11	0	11	22	11	22	34	11	11	22	312
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.2	8.5	8.7	10.3
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	96%	25%	3%
Vol Thru, %	51%	4%	50%	6%
Vol Right, %	16%	0%	25%	91%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	241	40	317
LT Vol	20	231	10	10
Through Vol	31	10	20	20
RT Vol	10	0	10	287
Lane Flow Rate	66	262	43	345
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.37	0.062	0.409
Departure Headway (Hd)	5.088	5.084	5.106	4.276
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	702	693	837
Service Time	3.159	3.155	3.195	2.322
HCM Lane V/C Ratio	0.094	0.373	0.062	0.412
HCM Control Delay	8.7	11.2	8.5	10.3
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.3	1.7	0.2	2

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	120	30	167	120	10	30	10	201	10	10	10
Future Vol, veh/h	10	120	30	167	120	10	30	10	201	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	130	33	182	130	11	33	11	218	11	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	163	0	0	678	672	147	782	684	136
Stage 1	-	-	-	-	-	-	168	168	-	499	499	-
Stage 2	-	-	-	-	-	-	510	504	-	283	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1416	-	-	366	377	900	312	371	913
Stage 1	-	-	-	-	-	-	834	759	-	554	544	-
Stage 2	-	-	-	-	-	-	546	541	-	724	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1416	-	-	313	322	900	204	317	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	322	-	204	317	-
Stage 1	-	-	-	-	-	-	827	753	-	550	468	-
Stage 2	-	-	-	-	-	-	453	465	-	536	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	4.5	13.4	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	688	1442	-	-	1416	-	-	471
HCM Lane V/C Ratio	0.381	0.008	-	-	0.128	-	-	0.046
HCM Control Delay (s)	13.4	7.5	0	-	7.9	0	-	13
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0	-	-	0.4	-	-	0.1

Intersection						
Int Delay, s/veh	5.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	190	211	41	120	177
Future Vol, veh/h	30	190	211	41	120	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	207	229	45	130	192

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	705	252	0	0	274	0
Stage 1	252	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	403	787	-	-	1289	-
Stage 1	790	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	357	787	-	-	1289	-
Mov Cap-2 Maneuver	357	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	676	1289	-
HCM Lane V/C Ratio	-	-	0.354	0.101	-
HCM Control Delay (s)	-	-	13.2	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	120	210	170	241	333	220	90	160	224	70	100
Future Volume (veh/h)	30	120	210	170	241	333	220	90	160	224	70	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	33	130	55	185	262	115	239	98	32	243	76	19
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	639	286	438	735	329	592	592	186	460	646	289
Arrive On Green	0.08	0.18	0.18	0.13	0.21	0.21	0.17	0.22	0.21	0.13	0.18	0.18
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	2653	832	3442	3539	1583
Grp Volume(v), veh/h	33	130	55	185	262	115	239	64	66	243	76	19
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1716	1721	1770	1583
Q Serve(g_s), s	0.4	1.5	1.4	2.4	3.0	3.0	2.9	1.4	1.5	3.1	0.9	0.5
Cycle Q Clear(g_c), s	0.4	1.5	1.4	2.4	3.0	3.0	2.9	1.4	1.5	3.1	0.9	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	287	639	286	438	735	329	592	395	383	460	646	289
V/C Ratio(X)	0.11	0.20	0.19	0.42	0.36	0.35	0.40	0.16	0.17	0.53	0.12	0.07
Avail Cap(c_a), veh/h	1155	3860	1727	1155	3860	1727	1371	1744	1691	1371	3488	1561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	16.6	16.6	19.2	16.2	16.1	17.6	14.9	15.1	19.3	16.3	16.1
Incr Delay (d2), s/veh	0.1	0.2	0.4	0.2	0.2	0.4	0.2	0.3	0.3	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.6	1.1	1.5	1.3	1.4	0.7	0.7	1.5	0.4	0.2
LnGrp Delay(d),s/veh	20.3	16.8	17.0	19.4	16.3	16.5	17.7	15.2	15.5	19.6	16.4	16.3
LnGrp LOS	C	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		218			562			369			338	
Approach Delay, s/veh		17.4			17.4			16.9			18.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	12.6	12.2	12.8	8.0	14.7	10.4	14.6
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46
Max Q Clear Time (g_c+I1), s	4.4	3.5	4.9	2.9	2.4	5.0	5.1	3.5
Green Ext Time (p_c), s	0.1	2.6	0.1	2.1	0.0	2.6	0.1	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	544	100	30	654	363	80	140	60	231	120	30
Future Volume (veh/h)	90	544	100	30	654	363	80	140	60	231	120	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.94	0.96		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	98	591	47	33	711	335	87	152	28	251	130	31
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1520	660	34	896	422	265	441	635	329	145	34
Arrive On Green	0.06	0.43	0.43	0.02	0.38	0.38	0.43	0.43	0.43	0.43	0.43	0.42
Sat Flow, veh/h	1774	3539	1535	1774	2335	1100	506	1038	1494	628	337	79
Grp Volume(v), veh/h	98	591	47	33	539	507	239	0	28	412	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1535	1774	1770	1665	1544	0	1494	1044	0	0
Q Serve(g_s), s	5.4	11.3	1.8	1.8	26.7	26.8	0.0	0.0	1.1	28.9	0.0	0.0
Cycle Q Clear(g_c), s	5.4	11.3	1.8	1.8	26.7	26.8	9.7	0.0	1.1	38.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.66	0.36		1.00	0.61		0.08
Lane Grp Cap(c), veh/h	115	1520	660	34	679	639	706	0	635	507	0	0
V/C Ratio(X)	0.85	0.39	0.07	0.98	0.79	0.79	0.34	0.00	0.04	0.81	0.00	0.00
Avail Cap(c_a), veh/h	359	1520	660	359	751	707	768	0	694	554	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.8	19.3	16.6	48.5	27.0	27.2	19.0	0.0	16.7	31.5	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.2	0.1	38.3	5.6	6.0	0.1	0.0	0.0	7.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.5	0.8	1.3	14.1	13.3	4.4	0.0	0.5	11.8	0.0	0.0
LnGrp Delay(d),s/veh	52.2	19.5	16.7	86.8	32.7	33.2	19.1	0.0	16.7	38.9	0.0	0.0
LnGrp LOS	D	B	B	F	C	C	B		B	D		
Approach Vol, veh/h		736			1079			267			412	
Approach Delay, s/veh		23.7			34.6			18.8			38.9	
Approach LOS		C			C			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	46.5		46.6	10.4	42.0		46.6				
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5				
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46				
Max Q Clear Time (g_c+I1), s	3.8	13.3		40.6	7.4	28.8		11.7				
Green Ext Time (p_c), s	0.0	15.3		0.9	0.0	8.6		1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			30.4									
HCM 2010 LOS			C									
Notes												

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	30	10	320	10	60	10	150	360	80	230	10
Future Vol, veh/h	30	30	10	320	10	60	10	150	360	80	230	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	33	11	348	11	65	11	163	391	87	250	11
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	13.3	27.7	20.2	15.3
HCM LOS	B	D	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	6%	0%	43%	100%	0%	41%	0%
Vol Thru, %	94%	0%	43%	0%	14%	59%	92%
Vol Right, %	0%	100%	14%	0%	86%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	360	70	320	70	195	125
LT Vol	10	0	30	320	0	80	0
Through Vol	150	0	30	0	10	115	115
RT Vol	0	360	10	0	60	0	10
Lane Flow Rate	174	391	76	348	76	212	136
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.348	0.702	0.178	0.759	0.142	0.452	0.28
Departure Headway (Hd)	7.208	6.457	8.424	7.86	6.736	7.68	7.411
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	560	425	459	532	468	485
Service Time	4.953	4.203	6.495	5.608	4.483	5.432	5.163
HCM Lane V/C Ratio	0.349	0.698	0.179	0.758	0.143	0.453	0.28
HCM Control Delay	13.8	23.1	13.3	31.5	10.6	16.7	13
HCM Lane LOS	B	C	B	D	B	C	B
HCM 95th-tile Q	1.5	5.6	0.6	6.4	0.5	2.3	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	235	200	0	317	0	210	370	0	0	560	260
Future Volume (veh/h)	270	235	200	0	317	0	210	370	0	0	560	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	255	82	0	345	0	228	402	0	0	609	174
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	1283	561	2	535	239	261	1969	881	2	691	574
Arrive On Green	0.18	0.36	0.36	0.00	0.15	0.00	0.15	0.56	0.00	0.00	0.37	0.37
Sat Flow, veh/h	1774	3539	1547	1774	3539	1583	1774	3539	1583	1774	1863	1547
Grp Volume(v), veh/h	293	255	82	0	345	0	228	402	0	0	609	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	1770	1583	1774	1770	1583	1774	1863	1547
Q Serve(g_s), s	17.0	5.2	3.7	0.0	9.6	0.0	13.2	6.0	0.0	0.0	32.0	8.3
Cycle Q Clear(g_c), s	17.0	5.2	3.7	0.0	9.6	0.0	13.2	6.0	0.0	0.0	32.0	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	1283	561	2	535	239	261	1969	881	2	691	574
V/C Ratio(X)	0.93	0.20	0.15	0.00	0.65	0.00	0.87	0.20	0.00	0.00	0.88	0.30
Avail Cap(c_a), veh/h	509	1386	606	271	913	408	610	2401	1074	102	730	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	22.9	22.5	0.0	41.8	0.0	43.7	11.6	0.0	0.0	30.8	23.3
Incr Delay (d2), s/veh	11.9	0.0	0.0	0.0	1.3	0.0	3.5	0.2	0.0	0.0	11.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	2.5	1.6	0.0	4.8	0.0	6.7	2.9	0.0	0.0	18.7	3.6
LnGrp Delay(d),s/veh	54.2	22.9	22.5	0.0	43.1	0.0	47.2	11.8	0.0	0.0	42.7	23.7
LnGrp LOS	D	C	C		D		D	B			D	C
Approach Vol, veh/h		630			345			630			783	
Approach Delay, s/veh		37.4			43.1			24.6			38.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	62.2	0.0	42.4	19.4	42.8	22.6	19.8
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	30.5	27.0
Max Q Clear Time (g_c+I1), s	0.0	8.0	0.0	7.2	15.2	34.0	19.0	11.6
Green Ext Time (p_c), s	0.0	15.0	0.0	2.8	0.1	4.5	0.1	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	280	300	211	188	40
Future Vol, veh/h	60	280	300	211	188	40
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	304	326	229	204	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	981	214	204	0	-	0
Stage 1	204	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	261	825	1366	-	-	0
Stage 1	830	-	-	-	-	0
Stage 2	415	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	198	818	1355	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	315	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1355	-	993	-
HCM Lane V/C Ratio	0.241	-	0.372	-
HCM Control Delay (s)	8.5	-	10.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.9	-	1.7	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	184	131	149	255	31	182	260	76	18	130	10
Future Vol, veh/h	10	184	131	149	255	31	182	260	76	18	130	10
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	200	142	162	277	34	198	283	83	20	141	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	882	967	96	950	931	203	162	0	0	375	0	0
Stage 1	196	196	-	730	730	-	-	-	-	-	-	-
Stage 2	686	771	-	220	201	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	241	253	942	215	~ 265	804	1414	-	-	1180	-	-
Stage 1	787	737	-	380	426	-	-	-	-	-	-	-
Stage 2	404	408	-	762	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	200	926	-	~ 210	791	1402	-	-	1170	-	-
Mov Cap-2 Maneuver	-	200	-	-	~ 210	-	-	-	-	-	-	-
Stage 1	641	717	-	309	347	-	-	-	-	-	-	-
Stage 2	63	332	-	452	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			3	1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1402	-	-	-	371	-	245	1170	-	-
HCM Lane V/C Ratio	0.141	-	-	-	0.653	-	0.703	0.017	-	-
HCM Control Delay (s)	8	0.3	-	-	31.2	-	48.4	8.1	0.1	-
HCM Lane LOS	A	A	-	-	D	-	E	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	-	4.4	-	4.7	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	210	0	0	0	90	470	0	0	660	20
Future Vol, veh/h	20	0	210	0	0	0	90	470	0	0	660	20
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	228	0	0	0	98	511	0	0	717	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1199	1445	390	1076	1456	265	749	0	-	-	-	0
Stage 1	738	738	-	707	707	-	-	-	-	-	-	-
Stage 2	461	707	-	369	749	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	141	131	609	174	129	733	856	-	0	0	-	-
Stage 1	376	422	-	392	436	-	-	-	0	0	-	-
Stage 2	550	436	-	623	417	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	122	109	599	94	107	727	849	-	-	-	-	-
Mov Cap-2 Maneuver	122	109	-	94	107	-	-	-	-	-	-	-
Stage 1	313	418	-	329	366	-	-	-	-	-	-	-
Stage 2	458	366	-	382	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.8	0	2.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	849	-	447	-	-	-
HCM Lane V/C Ratio	0.115	-	0.559	-	-	-
HCM Control Delay (s)	9.8	0.6	22.8	0	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	3.4	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↱			↑↑	↱				↰	↰↑	↱
Traffic Volume (veh/h)	0	248	110	0	630	918	0	0	0	423	10	170
Future Volume (veh/h)	0	248	110	0	630	918	0	0	0	423	10	170
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	270	0	0	685	0				468	0	60
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2190	0	0	1524	682				1045	0	467
Arrive On Green	0.00	0.44	0.00	0.00	0.44	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	270	0	0	685	0				468	0	60
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	1.0	0.0	0.0	4.2	0.0				3.3	0.0	0.8
Cycle Q Clear(g_c), s	0.0	1.0	0.0	0.0	4.2	0.0				3.3	0.0	0.8
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2190	0	0	1524	682				1045	0	467
V/C Ratio(X)	0.00	0.12	0.00	0.00	0.45	0.00				0.45	0.00	0.13
Avail Cap(c_a), veh/h	0	9867	0	0	6867	3072				3601	0	1607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	0.0	0.0	5.9	0.0				8.8	0.0	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	1.9	0.0				1.6	0.0	0.4
LnGrp Delay(d),s/veh	0.0	5.0	0.0	0.0	6.0	0.0				8.9	0.0	7.9
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		270			685						528	
Approach Delay, s/veh		5.0			6.0						8.8	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		17.5		13.0		17.5		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		3.0		5.3		6.2		
Green Ext Time (p_c), s		4.3		1.0		4.3		

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	611	50	0	1398	485	150	0	558	0	0	0
Future Volume (vph)	10	611	50	0	1398	485	150	0	558	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frpb, ped/bikes		1.00			0.99			1.00	1.00			
Flpb, ped/bikes		1.00			1.00			1.00	1.00			
Frt		0.99			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4872			4712			1770	2787			
Flt Permitted		0.87			1.00			0.95	1.00			
Satd. Flow (perm)		4266			4712			1770	2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	664	54	0	1520	527	163	0	607	0	0	0
RTOR Reduction (vph)	0	9	0	0	109	0	0	0	132	0	0	0
Lane Group Flow (vph)	0	720	0	0	1938	0	0	163	475	0	0	0
Confl. Peds. (#/hr)			4			4						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		18.6			30.7			9.8	21.9			
Effective Green, g (s)		21.4			33.5			12.6	24.7			
Actuated g/C Ratio		0.40			0.62			0.23	0.46			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1687			2917			412	1272			
v/s Ratio Prot					c0.41			0.09	c0.17			
v/s Ratio Perm		0.17										
v/c Ratio		0.43			0.66			0.40	0.37			
Uniform Delay, d1		11.9			6.7			17.5	9.6			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		0.1			0.4			0.2	0.1			
Delay (s)		12.0			7.1			17.8	9.7			
Level of Service		B			A			B	A			
Approach Delay (s)		12.0			7.1			11.4			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	610	190	30	1003	340	270	340	20	140	260	510
Future Volume (veh/h)	240	610	190	30	1003	340	270	340	20	140	260	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	261	663	74	33	1090	323	293	370	0	152	283	437
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	257	836	374	305	1311	389	474	871	390	367	1116	497
Arrive On Green	0.08	0.24	0.24	0.18	0.35	0.34	0.14	0.25	0.00	0.21	0.32	0.32
Sat Flow, veh/h	3343	3438	1538	1723	3780	1120	3442	3539	1583	1774	3539	1576
Grp Volume(v), veh/h	261	663	74	33	950	463	293	370	0	152	283	437
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1607	1721	1770	1583	1774	1770	1576
Q Serve(g_s), s	10.0	23.5	5.0	2.1	34.4	34.5	10.4	11.4	0.0	9.7	7.7	26.1
Cycle Q Clear(g_c), s	10.0	23.5	5.0	2.1	34.4	34.5	10.4	11.4	0.0	9.7	7.7	26.1
Prop In Lane	1.00		1.00	1.00		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	836	374	305	1142	558	474	871	390	367	1116	497
V/C Ratio(X)	1.01	0.79	0.20	0.11	0.83	0.83	0.62	0.42	0.00	0.41	0.25	0.88
Avail Cap(c_a), veh/h	257	1428	639	305	1292	630	474	871	390	367	1116	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	46.1	39.1	44.9	39.0	39.5	52.8	41.3	0.0	44.7	33.1	24.6
Incr Delay (d2), s/veh	57.2	1.6	0.2	0.2	4.3	8.4	2.4	1.5	0.0	0.7	0.5	19.4
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	11.3	2.1	1.0	16.4	16.6	5.1	5.8	0.0	4.8	3.9	14.0
LnGrp Delay(d),s/veh	117.3	47.7	39.3	45.1	43.2	47.8	55.3	42.8	0.0	45.5	33.7	44.0
LnGrp LOS	F	D	D	D	D	D	E	D		D	C	D
Approach Vol, veh/h		998			1446			663			872	
Approach Delay, s/veh		65.3			44.8			48.3			40.9	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.9	36.0	27.5	35.6	21.9	45.0	14.0	49.1
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	20.0	30.5	6.0	* 53	11.0	39.5	9.0	49.5
Max Q Clear Time (g_c+I1), s	11.7	13.4	4.1	25.5	12.4	28.1	12.0	36.5
Green Ext Time (p_c), s	1.0	2.1	1.4	4.6	0.0	2.7	0.0	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	20	20	308	20	30	20	420	311	20	330	20
Future Volume (veh/h)	20	20	20	308	20	30	20	420	311	20	330	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	22	2	351	0	0	22	457	0	22	359	18
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	53	92	643	0	287	64	1427	638	64	2000	99
Arrive On Green	0.06	0.06	0.06	0.18	0.00	0.00	0.04	0.40	0.00	0.04	0.40	0.37
Sat Flow, veh/h	909	909	1568	3548	0	1583	1774	3539	1583	1774	4962	247
Grp Volume(v), veh/h	44	0	2	351	0	0	22	457	0	22	244	133
Grp Sat Flow(s),veh/h/ln	1817	0	1568	1774	0	1583	1774	1770	1583	1774	1695	1818
Q Serve(g_s), s	1.2	0.0	0.1	4.5	0.0	0.0	0.6	4.4	0.0	0.6	2.3	2.4
Cycle Q Clear(g_c), s	1.2	0.0	0.1	4.5	0.0	0.0	0.6	4.4	0.0	0.6	2.3	2.4
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	107	0	92	643	0	287	64	1427	638	64	1366	733
V/C Ratio(X)	0.41	0.00	0.02	0.55	0.00	0.00	0.35	0.32	0.00	0.35	0.18	0.18
Avail Cap(c_a), veh/h	1130	0	975	2918	0	1302	1103	3302	1477	1103	3162	1696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	22.1	18.5	0.0	0.0	23.5	10.2	0.0	23.5	9.6	9.7
Incr Delay (d2), s/veh	2.5	0.0	0.1	0.7	0.0	0.0	3.2	0.3	0.0	3.2	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.3	0.0	0.0	0.3	2.2	0.0	0.3	1.1	1.2
LnGrp Delay(d),s/veh	25.1	0.0	22.2	19.3	0.0	0.0	26.7	10.5	0.0	26.7	9.7	9.9
LnGrp LOS	C		C	B			C	B		C	A	A
Approach Vol, veh/h		46			351			479			399	
Approach Delay, s/veh		25.0			19.3			11.2			10.7	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	24.1		13.0	5.8	24.1		6.9
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.6	6.4		6.5	2.6	4.4		3.2
Green Ext Time (p_c), s	0.0	12.1		1.2	0.0	12.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	630	50	118	813	360	70	210	91	450	220	380
Future Volume (veh/h)	130	630	50	118	813	360	70	210	91	450	220	380
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	685	50	128	884	142	76	228	25	489	239	274
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	302	1257	92	228	1805	549	179	874	380	600	1307	571
Arrive On Green	0.09	0.39	0.37	0.07	0.37	0.37	0.05	0.25	0.25	0.17	0.37	0.37
Sat Flow, veh/h	3343	3244	237	3343	4940	1503	3442	3539	1539	3442	3539	1547
Grp Volume(v), veh/h	141	363	372	128	884	142	76	228	25	489	239	274
Grp Sat Flow(s),veh/h/ln	1672	1719	1761	1672	1647	1503	1721	1770	1539	1721	1770	1547
Q Serve(g_s), s	5.2	21.3	21.4	4.8	18.0	5.0	2.8	6.7	1.6	17.8	5.9	17.6
Cycle Q Clear(g_c), s	5.2	21.3	21.4	4.8	18.0	5.0	2.8	6.7	1.6	17.8	5.9	17.6
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	666	682	228	1805	549	179	874	380	600	1307	571
V/C Ratio(X)	0.47	0.54	0.55	0.56	0.49	0.26	0.42	0.26	0.07	0.82	0.18	0.48
Avail Cap(c_a), veh/h	302	666	682	283	1805	549	188	874	380	635	1307	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	30.9	31.1	58.7	31.9	9.6	59.7	39.4	37.5	51.7	27.7	31.4
Incr Delay (d2), s/veh	0.4	3.2	3.1	0.8	1.0	1.1	0.6	0.7	0.3	7.0	0.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.7	11.0	2.2	8.3	2.2	1.3	3.4	0.7	9.1	2.9	8.0
LnGrp Delay(d),s/veh	56.6	34.1	34.2	59.5	32.8	10.8	60.3	40.1	37.8	58.7	28.0	34.3
LnGrp LOS	E	C	C	E	C	B	E	D	D	E	C	C
Approach Vol, veh/h		876			1154			329			1002	
Approach Delay, s/veh		37.8			33.1			44.6			44.7	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	51.5	26.7	36.1	12.9	54.4	10.8	52.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	8.6	45.4	21.2	29.0	8.9	45.1	5.0	45.2
Max Q Clear Time (g_c+I1), s	7.2	20.0	19.8	8.7	6.8	23.4	4.8	19.6
Green Ext Time (p_c), s	0.1	2.1	0.1	0.5	0.0	1.3	0.0	0.6

Intersection Summary		
HCM 2010 Ctrl Delay		38.9
HCM 2010 LOS		D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU + CASP AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB McKinnon St											
3	L2	239	0.0	0.306	8.3	LOS A	1.6	39.4	0.68	0.68	28.2
8	T1	152	0.0	0.306	7.0	LOS A	1.6	39.4	0.67	0.65	24.4
18	R2	134	0.0	0.306	7.0	LOS A	1.6	39.4	0.67	0.65	35.8
Approach		525	0.0	0.306	7.6	LOS A	1.6	39.4	0.68	0.66	29.3
East: WB Boronda Rd											
1	L2	183	1.2	0.555	10.4	LOS B	4.7	119.0	0.68	0.76	28.5
6	T1	1164	1.2	0.555	9.2	LOS A	4.8	120.4	0.66	0.69	32.1
16	R2	65	6.3	0.047	3.0	LOS A	0.2	6.2	0.40	0.23	33.9
Approach		1412	1.4	0.555	9.1	LOS A	4.8	120.4	0.65	0.68	31.8
North: SB McKinnon St											
7	L2	43	0.0	0.069	6.4	LOS A	0.3	8.1	0.74	0.70	32.9
4	T1	22	1.8	0.078	4.6	LOS A	0.4	11.0	0.77	0.67	31.1
14	R2	130	1.1	0.078	4.4	LOS A	0.4	11.0	0.74	0.64	32.4
Approach		196	0.9	0.078	4.8	LOS A	0.4	11.0	0.74	0.65	32.5
West: EB Boronda Rd											
5	L2	207	0.0	0.364	6.2	LOS A	1.9	47.6	0.39	0.27	31.9
2	T1	827	0.0	0.364	5.7	LOS A	2.0	49.5	0.38	0.25	34.8
12	R2	261	0.0	0.166	3.6	LOS A	0.8	21.0	0.31	0.17	30.1
Approach		1295	0.0	0.364	5.4	LOS A	2.0	49.5	0.37	0.24	33.8
All Vehicles		3427	0.6	0.555	7.2	LOS A	4.8	120.4	0.55	0.51	32.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU + CASP AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	207	0.0	0.166	4.3	LOS A	0.8	20.3	0.60	0.52	35.1
8	T1	1	0.0	0.001	3.9	LOS A	0.0	0.1	0.57	0.32	36.3
18	R2	199	0.0	0.160	4.2	LOS A	0.8	19.5	0.59	0.51	36.1
Approach		407	0.0	0.166	4.3	LOS A	0.8	20.3	0.60	0.52	35.6
East: WB Baronda Rd											
1	L2	204	0.0	0.606	10.6	LOS B	4.9	122.3	0.58	0.41	34.1
6	T1	1293	0.9	0.606	10.3	LOS B	5.0	124.8	0.57	0.40	35.3
16	R2	1	0.0	0.606	10.0	LOS B	5.0	124.8	0.56	0.39	33.6
Approach		1499	0.8	0.606	10.3	LOS B	5.0	124.8	0.57	0.40	35.2
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.002	6.5	LOS A	0.0	0.2	0.74	0.50	33.8
4	T1	1	0.0	0.001	4.0	LOS A	0.0	0.2	0.79	0.45	35.7
14	R2	1	0.0	0.001	3.5	LOS A	0.0	0.1	0.71	0.40	36.3
Approach		3	0.0	0.002	4.7	LOS A	0.0	0.2	0.75	0.45	35.2
West: EB Boronda Rd											
5u	U	1	0.0	0.435	7.5	LOS A	2.8	71.5	0.47	0.32	37.1
5	L2	1	0.0	0.435	7.5	LOS A	2.8	71.5	0.47	0.32	35.7
2	T1	949	2.0	0.435	7.4	LOS A	2.9	72.7	0.46	0.31	36.4
12	R2	120	0.0	0.435	7.1	LOS A	2.9	72.7	0.46	0.30	35.3
Approach		1071	1.8	0.435	7.3	LOS A	2.9	72.7	0.46	0.31	36.3
All Vehicles		2979	1.0	0.606	8.4	LOS A	5.0	124.8	0.54	0.38	35.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	130	0.0	0.124	4.5	LOS A	0.4	10.2	0.49	0.46	35.8
8	T1	249	1.6	0.155	6.1	LOS A	0.5	12.1	0.54	0.54	34.9
18	R2	399	0.0	0.238	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		778	0.5	0.238	2.7	LOS A	0.5	12.1	0.25	0.25	37.2
East: WB Boronda Rd											
1	L2	340	0.0	0.414	7.6	LOS A	1.9	46.6	0.50	0.44	32.8
6	T1	1109	0.6	0.414	7.2	LOS A	1.9	48.6	0.49	0.43	38.8
16	R2	308	1.6	0.235	4.8	LOS A	1.0	24.6	0.38	0.28	37.2
Approach		1757	0.7	0.414	6.9	LOS A	1.9	48.6	0.47	0.41	37.6
North: SB Natividad Rd											
7	L2	234	0.0	0.316	9.0	LOS A	1.3	33.4	0.68	0.70	33.9
4	T1	514	0.0	0.316	7.9	LOS A	1.5	36.8	0.69	0.70	33.8
14	R2	105	0.0	0.099	4.2	LOS A	0.4	9.7	0.56	0.51	38.9
Approach		853	0.0	0.316	7.8	LOS A	1.5	36.8	0.67	0.68	34.7
West: EB Boronda Rd											
5u	U	1	0.0	0.350	8.4	LOS A	1.6	39.6	0.63	0.66	37.2
5	L2	160	0.0	0.350	8.4	LOS A	1.6	39.6	0.63	0.66	36.7
2	T1	792	0.3	0.350	7.7	LOS A	1.6	41.1	0.63	0.65	38.5
12	R2	120	0.0	0.106	4.1	LOS A	0.4	10.8	0.51	0.43	37.7
Approach		1073	0.2	0.350	7.4	LOS A	1.6	41.1	0.62	0.62	38.2
All Vehicles		4461	0.4	0.414	6.4	LOS A	1.9	48.6	0.51	0.48	37.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_CU + CASP AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Independence Blvd											
3	L2	438	0.4	0.227	5.9	LOS A	1.3	32.2	0.70	0.66	32.0
8	T1	100	0.0	0.211	6.8	LOS A	1.0	26.0	0.70	0.68	33.5
18	R2	68	0.0	0.211	6.8	LOS A	1.0	26.0	0.70	0.68	33.1
Approach		607	0.3	0.227	6.2	LOS A	1.3	32.2	0.70	0.66	32.4
East: WB Boronda Rd											
1	L2	33	0.0	0.556	10.6	LOS B	4.1	103.2	0.61	0.74	32.5
6	T1	1212	0.3	0.556	9.9	LOS A	4.2	106.5	0.60	0.70	34.0
16	R2	167	0.0	0.118	3.5	LOS A	0.5	11.8	0.26	0.14	35.6
Approach		1412	0.3	0.556	9.2	LOS A	4.2	106.5	0.56	0.64	34.2
North: SB Independence Blvd (Future)											
7	L2	151	0.0	0.427	10.2	LOS B	2.6	64.9	0.80	0.87	32.5
4	T1	179	0.0	0.427	10.2	LOS B	2.6	64.9	0.80	0.87	30.4
14	R2	136	0.0	0.174	6.4	LOS A	0.8	21.0	0.73	0.73	34.0
Approach		466	0.0	0.427	9.1	LOS A	2.6	64.9	0.78	0.83	32.2
West: EB Boronda Rd											
5u	U	1	0.0	0.437	8.3	LOS A	3.0	75.9	0.61	0.48	34.9
5	L2	95	0.0	0.437	8.3	LOS A	3.0	75.9	0.61	0.48	33.8
2	T1	918	0.8	0.437	7.6	LOS A	3.2	80.9	0.60	0.45	34.8
12	R2	473	0.3	0.283	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		1487	0.6	0.437	5.2	LOS A	3.2	80.9	0.41	0.31	35.2
All Vehicles		3972	0.4	0.556	7.2	LOS A	4.2	106.5	0.55	0.54	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	693	173	40	959	120	217	17	50	142	23	103
Future Volume (veh/h)	152	693	173	40	959	120	217	17	50	142	23	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1815	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	753	174	43	1042	123	236	18	47	154	25	11
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	150	1490	344	55	1511	178	278	21	55	177	122	54
Arrive On Green	0.06	0.36	0.36	0.03	0.49	0.49	0.20	0.20	0.20	0.10	0.10	0.10
Sat Flow, veh/h	1774	2755	636	1723	3095	365	1361	104	271	1774	1218	536
Grp Volume(v), veh/h	165	470	457	43	580	585	301	0	0	154	0	36
Grp Sat Flow(s),veh/h/ln	1774	1719	1672	1723	1725	1736	1736	0	0	1774	0	1753
Q Serve(g_s), s	11.0	27.7	27.7	3.2	33.7	33.8	21.7	0.0	0.0	11.1	0.0	2.5
Cycle Q Clear(g_c), s	11.0	27.7	27.7	3.2	33.7	33.8	21.7	0.0	0.0	11.1	0.0	2.5
Prop In Lane	1.00		0.38	1.00		0.21	0.78		0.16	1.00		0.31
Lane Grp Cap(c), veh/h	150	930	904	55	842	847	355	0	0	177	0	175
V/C Ratio(X)	1.10	0.51	0.51	0.78	0.69	0.69	0.85	0.00	0.00	0.87	0.00	0.21
Avail Cap(c_a), veh/h	150	930	904	212	842	847	454	0	0	177	0	175
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.3	27.9	27.9	62.5	25.7	25.7	49.8	0.0	0.0	57.7	0.0	53.8
Incr Delay (d2), s/veh	97.1	1.7	1.7	20.9	4.6	4.6	11.5	0.0	0.0	33.8	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	13.6	13.3	1.9	17.0	17.2	11.5	0.0	0.0	7.1	0.0	1.2
LnGrp Delay(d),s/veh	158.5	29.6	29.6	83.4	30.3	30.3	61.3	0.0	0.0	91.4	0.0	54.3
LnGrp LOS	F	C	C	F	C	C	E			F		D
Approach Vol, veh/h		1092			1208			301			190	
Approach Delay, s/veh		49.1			32.2			61.3			84.4	
Approach LOS		D			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	74.3		17.0	15.0	67.5		30.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	51.0		13.0	11.0	56.0		34.0
Max Q Clear Time (g_c+I1), s	5.2	29.7		13.1	13.0	35.8		23.7
Green Ext Time (p_c), s	0.0	13.4		0.0	0.0	13.0		1.3

Intersection Summary		
HCM 2010 Ctrl Delay		45.5
HCM 2010 LOS		D

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	15	4	207	329	8
Future Vol, veh/h	21	15	4	207	329	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	16	4	225	358	9
Number of Lanes	1	1	1	1	1	0

Approach	EB		NB		SB
Opposing Approach			SB		NB
Opposing Lanes	0		1		2
Conflicting Approach Left	SB		EB		
Conflicting Lanes Left	1		2		0
Conflicting Approach Right	NB				EB
Conflicting Lanes Right	2		0		2
HCM Control Delay	8.9		9.8		12
HCM LOS	A		A		B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	98%
Vol Right, %	0%	0%	0%	100%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	207	21	15	337
LT Vol	4	0	21	0	0
Through Vol	0	207	0	0	329
RT Vol	0	0	0	15	8
Lane Flow Rate	4	225	23	16	366
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.007	0.308	0.041	0.024	0.478
Departure Headway (Hd)	5.423	4.921	6.436	5.224	4.694
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	661	731	556	684	769
Service Time	3.143	2.64	4.177	2.964	2.712
HCM Lane V/C Ratio	0.006	0.308	0.041	0.023	0.476
HCM Control Delay	8.2	9.8	9.5	8.1	12
HCM Lane LOS	A	A	A	A	B
HCM 95th-tile Q	0	1.3	0.1	0.1	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	330	140	300	310	250	40	480	320	200	660	100
Future Volume (veh/h)	110	330	140	300	310	250	40	480	320	200	660	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	359	23	326	337	69	43	522	274	217	717	49
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	808	334	373	637	531	275	1164	542	320	1430	429
Arrive On Green	0.10	0.23	0.23	0.21	0.34	0.34	0.16	0.34	0.33	0.09	0.28	0.28
Sat Flow, veh/h	1774	3539	1465	1774	1863	1553	1774	3390	1580	3442	5085	1526
Grp Volume(v), veh/h	120	359	23	326	337	69	43	522	274	217	717	49
Grp Sat Flow(s),veh/h/ln	1774	1770	1465	1774	1863	1553	1774	1695	1580	1721	1695	1526
Q Serve(g_s), s	8.4	11.2	1.1	22.8	18.6	3.9	2.7	15.3	17.9	7.8	15.1	2.2
Cycle Q Clear(g_c), s	8.4	11.2	1.1	22.8	18.6	3.9	2.7	15.3	17.9	7.8	15.1	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	808	334	373	637	531	275	1164	542	320	1430	429
V/C Ratio(X)	0.70	0.44	0.07	0.87	0.53	0.13	0.16	0.45	0.51	0.68	0.50	0.11
Avail Cap(c_a), veh/h	292	998	413	430	669	558	275	1164	542	323	1430	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	42.4	17.7	48.9	33.8	29.0	46.8	32.6	34.3	56.2	38.5	18.4
Incr Delay (d2), s/veh	1.9	0.1	0.0	14.7	0.3	0.0	0.1	1.3	3.3	4.6	1.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.5	0.4	12.7	9.6	1.7	1.3	7.4	8.3	3.9	7.2	1.0
LnGrp Delay(d),s/veh	57.9	42.6	17.7	63.6	34.1	29.0	46.9	33.9	37.7	60.7	39.7	18.9
LnGrp LOS	E	D	B	E	C	C	D	C	D	E	D	B
Approach Vol, veh/h		502			732			839			983	
Approach Delay, s/veh		45.1			46.8			35.8			43.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	47.9	30.9	33.2	23.8	40.0	16.4	47.8
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	30.8	28.9	34.0	6.8	33.9	19.0	43.9
Max Q Clear Time (g_c+I1), s	9.8	19.9	24.8	13.2	4.7	17.1	10.4	20.6
Green Ext Time (p_c), s	0.0	1.7	0.1	1.5	0.6	1.8	0.0	1.5

Intersection Summary		
HCM 2010 Ctrl Delay		42.4
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	0	400	0	0	0	380	677	0	0	1230	265
Future Volume (veh/h)	278	0	400	0	0	0	380	677	0	0	1230	265
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	980	0	980				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	302	0	203				413	736	0	0	1337	255
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	471	0	217				445	3357	0	2	1576	300
Arrive On Green	0.26	0.00	0.26				0.25	0.66	0.00	0.00	0.37	0.35
Sat Flow, veh/h	1811	0	833				1774	5253	0	1774	4270	814
Grp Volume(v), veh/h	302	0	203				413	736	0	0	1061	531
Grp Sat Flow(s),veh/h/ln	906	0	833				1774	1695	0	1774	1695	1694
Q Serve(g_s), s	14.8	0.0	23.8				22.7	5.8	0.0	0.0	28.8	28.9
Cycle Q Clear(g_c), s	14.8	0.0	23.8				22.7	5.8	0.0	0.0	28.8	28.9
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.48
Lane Grp Cap(c), veh/h	471	0	217				445	3357	0	2	1251	625
V/C Ratio(X)	0.64	0.00	0.94				0.93	0.22	0.00	0.00	0.85	0.85
Avail Cap(c_a), veh/h	471	0	217				461	3357	0	106	1356	677
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	36.2				36.6	6.8	0.0	0.0	29.0	29.3
Incr Delay (d2), s/veh	2.9	0.0	43.8				25.7	0.0	0.0	0.0	4.9	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	2.6				14.3	2.7	0.0	0.0	14.3	15.1
LnGrp Delay(d),s/veh	35.8	0.0	80.0				62.2	6.8	0.0	0.0	33.9	38.7
LnGrp LOS	D		F				E	A			C	D
Approach Vol, veh/h		505						1149			1592	
Approach Delay, s/veh		53.6						26.7			35.5	
Approach LOS		D						C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	70.0		30.0	29.1	40.9		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	0.0	7.8		25.8	24.7	30.9		
Green Ext Time (p_c), s	0.0	26.3		0.0	0.4	4.5		

Intersection Summary		
HCM 2010 Ctrl Delay		35.2
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	718	110	10	1209	60	200	90	20	70	120	630
Future Volume (veh/h)	282	718	110	10	1209	60	200	90	20	70	120	630
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	300	764	108	11	1286	61	213	96	14	74	128	443
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	1651	233	68	1254	59	294	522	76	420	615	509
Arrive On Green	0.20	0.53	0.51	0.04	0.36	0.34	0.33	0.33	0.32	0.33	0.33	0.33
Sat Flow, veh/h	1774	3115	440	1774	3439	163	829	1584	231	1252	1863	1543
Grp Volume(v), veh/h	300	434	438	11	661	686	213	0	110	74	128	443
Grp Sat Flow(s),veh/h/ln	1774	1770	1785	1774	1770	1832	829	0	1815	1252	1863	1543
Q Serve(g_s), s	19.1	18.0	18.2	0.7	43.0	43.0	29.3	0.0	5.1	5.3	5.8	31.8
Cycle Q Clear(g_c), s	19.1	18.0	18.2	0.7	43.0	43.0	35.2	0.0	5.1	10.4	5.8	31.8
Prop In Lane	1.00		0.25	1.00		0.09	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	361	938	946	68	645	668	294	0	599	420	615	509
V/C Ratio(X)	0.83	0.46	0.46	0.16	1.02	1.03	0.73	0.00	0.18	0.18	0.21	0.87
Avail Cap(c_a), veh/h	391	938	946	135	645	668	294	0	600	421	616	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	17.3	17.5	54.9	37.5	37.6	41.1	0.0	28.3	31.9	28.4	37.1
Incr Delay (d2), s/veh	13.2	0.4	0.4	1.1	41.7	41.8	8.6	0.0	0.1	0.2	0.2	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	8.9	9.0	0.4	28.5	29.5	7.4	0.0	2.6	1.9	3.0	15.7
LnGrp Delay(d),s/veh	58.2	17.6	17.9	56.0	79.2	79.4	49.7	0.0	28.4	32.1	28.6	52.1
LnGrp LOS	E	B	B	E	F	F	D		C	C	C	D
Approach Vol, veh/h		1172			1358			323			645	
Approach Delay, s/veh		28.1			79.1			42.4			45.1	
Approach LOS		C			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	66.5		42.9	28.0	47.0		42.9
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	2.7	20.2		33.8	21.1	45.0		37.2
Green Ext Time (p_c), s	0.0	20.0		1.7	0.2	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	75	130	120	142	33	70	722	70	24	697	243
Future Volume (veh/h)	371	75	130	120	142	33	70	722	70	24	697	243
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	403	82	34	130	154	18	76	785	71	26	758	142
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	444	619	242	279	501	58	134	1223	111	59	1172	512
Arrive On Green	0.25	0.25	0.23	0.16	0.16	0.14	0.08	0.38	0.36	0.03	0.34	0.34
Sat Flow, veh/h	1774	2474	968	1774	3183	366	1723	3185	288	1723	3438	1501
Grp Volume(v), veh/h	403	57	59	130	84	88	76	424	432	26	758	142
Grp Sat Flow(s),veh/h/ln	1774	1770	1672	1774	1770	1780	1723	1719	1754	1723	1719	1501
Q Serve(g_s), s	20.2	2.3	2.5	6.1	3.9	4.0	3.9	18.5	18.6	1.4	17.1	6.3
Cycle Q Clear(g_c), s	20.2	2.3	2.5	6.1	3.9	4.0	3.9	18.5	18.6	1.4	17.1	6.3
Prop In Lane	1.00		0.58	1.00		0.21	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	444	443	419	279	278	280	134	660	674	59	1172	512
V/C Ratio(X)	0.91	0.13	0.14	0.47	0.30	0.31	0.57	0.64	0.64	0.44	0.65	0.28
Avail Cap(c_a), veh/h	444	443	419	714	713	717	300	711	725	300	1422	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	26.7	27.2	35.2	34.3	34.5	40.9	23.1	23.3	43.5	25.6	22.1
Incr Delay (d2), s/veh	22.2	0.1	0.2	1.2	0.6	0.6	3.8	1.8	1.7	5.1	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	1.1	1.2	3.1	1.9	2.0	2.0	9.0	9.2	0.7	8.2	2.6
LnGrp Delay(d),s/veh	55.6	26.8	27.4	36.4	34.9	35.1	44.7	24.9	25.0	48.6	26.4	22.3
LnGrp LOS	E	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		519			302			932			926	
Approach Delay, s/veh		49.2			35.6			26.6			26.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	35.3		18.4	7.1	39.3		27.0
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0
Max Q Clear Time (g_c+I1), s	5.9	19.1		8.1	3.4	20.6		22.2
Green Ext Time (p_c), s	0.1	9.5		1.2	0.0	9.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1040	310	0	1350	320	0	0	0	263	0	440
Future Volume (veh/h)	0	1040	310	0	1350	320	0	0	0	263	0	440
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1095	0	0	1421	0				277	0	440
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1968	881	0	1968	0				1102	0	507
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1095	0	0	1421	0				277	0	440
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	14.9	0.0	0.0	22.5	0.0				4.4	0.0	19.5
Cycle Q Clear(g_c), s	0.0	14.9	0.0	0.0	22.5	0.0				4.4	0.0	19.5
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1968	881	0	1968	0				1102	0	507
V/C Ratio(X)	0.00	0.56	0.00	0.00	0.72	0.00				0.25	0.00	0.87
Avail Cap(c_a), veh/h	0	2580	1154	0	2580	0				1660	0	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	0.0	0.0	11.6	0.0				18.7	0.0	23.9
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.1	0.0	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.0	0.0	0.0	10.6	0.0				2.1	0.0	9.3
LnGrp Delay(d),s/veh	0.0	10.1	0.0	0.0	12.0	0.0				18.8	0.0	30.0
LnGrp LOS		B			B					B		C
Approach Vol, veh/h		1095			1421						717	
Approach Delay, s/veh		10.1			12.0						25.7	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		46.7		27.9		46.7		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		54.9		35.4		54.9		
Max Q Clear Time (g_c+I1), s		16.9		21.5		24.5		
Green Ext Time (p_c), s		19.2		1.8		17.2		

Intersection Summary			
HCM 2010 Ctrl Delay			14.4
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	963	340	0	1420	305	250	0	120	0	0	0
Future Volume (vph)	0	963	340	0	1420	305	250	0	120	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3331		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3331		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1047	370	0	1543	332	272	0	130	0	0	0
RTOR Reduction (vph)	0	0	111	0	15	0	0	0	103	0	0	0
Lane Group Flow (vph)	0	1047	259	0	1860	0	136	136	27	0	0	0
Confl. Peds. (#/hr)						3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.8	63.8		63.8		18.4	18.4	18.4			
Effective Green, g (s)		64.4	63.8		64.4		18.6	18.6	18.6			
Actuated g/C Ratio		0.71	0.70		0.71		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2433	1078		2357		343	343	323			
v/s Ratio Prot		0.30			c0.56		c0.08	0.08				
v/s Ratio Perm			0.17						0.02			
v/c Ratio		0.43	0.24		0.79		0.40	0.40	0.08			
Uniform Delay, d1		5.6	4.9		8.8		31.3	31.3	29.3			
Progression Factor		1.00	1.00		0.71		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		1.2		0.3	0.3	0.0			
Delay (s)		5.7	5.0		7.4		31.6	31.6	29.3			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		5.5			7.4			30.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	518	90	160	609	100	80	560	140	180	890	130
Future Volume (veh/h)	210	518	90	160	609	100	80	560	140	180	890	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	228	563	87	174	662	98	87	609	54	196	967	127
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	285	869	134	224	766	113	188	1302	578	296	1812	237
Arrive On Green	0.17	0.29	0.27	0.13	0.26	0.24	0.05	0.37	0.37	0.09	0.40	0.38
Sat Flow, veh/h	1723	2984	460	1723	2998	443	3442	3539	1570	3442	4541	595
Grp Volume(v), veh/h	228	324	326	174	379	381	87	609	54	196	721	373
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1722	1721	1770	1570	1721	1695	1745
Q Serve(g_s), s	16.3	21.0	21.2	12.5	27.0	27.1	3.1	16.8	2.9	7.1	20.8	21.0
Cycle Q Clear(g_c), s	16.3	21.0	21.2	12.5	27.0	27.1	3.1	16.8	2.9	7.1	20.8	21.0
Prop In Lane	1.00		0.27	1.00		0.26	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	285	501	502	224	440	440	188	1302	578	296	1353	696
V/C Ratio(X)	0.80	0.65	0.65	0.78	0.86	0.86	0.46	0.47	0.09	0.66	0.53	0.54
Avail Cap(c_a), veh/h	337	535	536	327	525	526	194	1302	578	296	1353	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	39.6	39.9	53.9	45.5	45.8	58.7	30.9	26.5	56.7	29.4	29.7
Incr Delay (d2), s/veh	9.3	1.8	1.8	3.8	10.7	10.9	0.7	1.2	0.3	4.4	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	10.2	10.3	6.2	14.1	14.2	1.5	8.4	1.3	3.6	10.0	10.7
LnGrp Delay(d),s/veh	60.6	41.4	41.7	57.7	56.2	56.7	59.3	32.1	26.8	61.1	30.9	32.6
LnGrp LOS	E	D	D	E	E	E	E	C	C	E	C	C
Approach Vol, veh/h		878			934			750			1290	
Approach Delay, s/veh		46.5			56.7			34.9			36.0	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	51.1	20.6	41.3	11.0	55.1	25.2	36.7
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	34.8	22.2	37.7	5.1	38.6	22.9	37.0
Max Q Clear Time (g_c+I1), s	9.1	18.8	14.5	23.2	5.1	23.0	18.3	29.1
Green Ext Time (p_c), s	0.0	4.3	0.0	1.3	0.0	4.3	0.8	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	617	110	860	774	380	60	907	660	410	1150	80
Future Volume (veh/h)	160	617	110	860	774	380	60	907	660	410	1150	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	174	671	0	935	841	0	65	986	668	446	1250	83
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	185	771	345	716	1151	515	71	1217	1555	369	1384	92
Arrive On Green	0.11	0.22	0.00	0.21	0.33	0.00	0.04	0.34	0.34	0.11	0.41	0.39
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2758	3442	3369	223
Grp Volume(v), veh/h	174	671	0	935	841	0	65	986	668	446	656	677
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1823
Q Serve(g_s), s	15.0	28.1	0.0	32.0	32.2	0.0	5.5	37.8	20.9	16.0	51.8	52.1
Cycle Q Clear(g_c), s	15.0	28.1	0.0	32.0	32.2	0.0	5.5	37.8	20.9	16.0	51.8	52.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	185	771	345	716	1151	515	71	1217	1555	369	727	749
V/C Ratio(X)	0.94	0.87	0.00	1.31	0.73	0.00	0.91	0.81	0.43	1.21	0.90	0.90
Avail Cap(c_a), veh/h	185	782	350	716	1151	515	71	1232	1566	369	734	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.2	55.8	0.0	58.7	43.8	0.0	71.4	44.6	19.0	66.7	41.2	41.4
Incr Delay (d2), s/veh	49.3	10.1	0.0	147.5	2.3	0.0	75.6	4.0	0.1	117.2	14.1	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	14.4	0.0	29.4	15.7	0.0	4.2	19.2	8.0	13.6	28.2	29.1
LnGrp Delay(d),s/veh	115.5	66.0	0.0	206.2	46.0	0.0	147.0	48.6	19.1	183.9	55.3	55.5
LnGrp LOS	F	E		F	D		F	D	B	F	E	E
Approach Vol, veh/h		845			1776			1719			1779	
Approach Delay, s/veh		76.2			130.4			40.8			87.6	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	55.4	36.0	38.0	10.0	65.4	20.0	54.0
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	39.8	34.0	30.1	7.5	54.1	17.0	34.2
Green Ext Time (p_c), s	0.0	8.1	0.0	1.4	0.0	4.8	0.0	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	85.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	977	650	30	130	720	268	50	271	150	435	195	1574
Future Volume (veh/h)	977	650	30	130	720	268	50	271	150	435	195	1574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1812	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1062	707	31	141	783	0	54	295	113	473	212	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1167	1571	69	165	726	325	70	275	103	393	543	461
Arrive On Green	0.35	0.47	0.45	0.09	0.21	0.00	0.04	0.11	0.11	0.22	0.29	0.00
Sat Flow, veh/h	3343	3360	147	1774	3438	1538	1774	2521	945	1774	1863	1583
Grp Volume(v), veh/h	1062	362	376	141	783	0	54	205	203	473	212	0
Grp Sat Flow(s),veh/h/ln	1672	1721	1786	1774	1719	1538	1774	1770	1696	1774	1863	1583
Q Serve(g_s), s	44.5	20.8	20.9	11.5	31.0	0.0	4.4	16.0	16.0	32.5	13.4	0.0
Cycle Q Clear(g_c), s	44.5	20.8	20.9	11.5	31.0	0.0	4.4	16.0	16.0	32.5	13.4	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	1167	805	835	165	726	325	70	193	185	393	543	461
V/C Ratio(X)	0.91	0.45	0.45	0.86	1.08	0.00	0.78	1.06	1.10	1.20	0.39	0.00
Avail Cap(c_a), veh/h	1276	805	835	254	726	325	193	193	185	393	543	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.5	26.3	26.4	65.6	57.9	0.0	69.8	65.4	65.4	57.1	41.6	0.0
Incr Delay (d2), s/veh	9.3	0.4	0.4	15.7	56.4	0.0	16.6	82.6	94.4	113.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.0	9.9	10.3	6.4	20.3	0.0	2.5	12.2	12.3	28.2	7.0	0.0
LnGrp Delay(d),s/veh	54.9	26.7	26.8	81.3	114.3	0.0	86.4	148.0	159.7	170.7	42.0	0.0
LnGrp LOS	D	C	C	F	F		F	F	F	F	D	
Approach Vol, veh/h		1800			924			462			685	
Approach Delay, s/veh		43.3			109.3			146.0			130.9	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	72.6	9.8	46.7	55.2	35.0	35.0	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	13.5	22.9	6.4	15.4	46.5	33.0	34.5	18.0
Green Ext Time (p_c), s	0.2	13.5	0.1	2.8	2.8	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	86.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	644	322	190	540	0	317	0	30	0	0	0
Future Volume (veh/h)	0	644	322	190	540	0	317	0	30	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	700	316	207	587	0	345	0	9	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	942	425	276	2163	0	460	459	399	2	5	0
Arrive On Green	0.00	0.41	0.40	0.16	0.63	0.00	0.26	0.00	0.25	0.00	0.00	0.00
Sat Flow, veh/h	1774	2280	1029	1723	3529	0	1774	1770	1538	1774	3632	0
Grp Volume(v), veh/h	0	528	488	207	587	0	345	0	9	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1590	1723	1719	0	1774	1770	1538	1774	1770	0
Q Serve(g_s), s	0.0	18.6	18.7	8.2	5.5	0.0	12.8	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.6	18.7	8.2	5.5	0.0	12.8	0.0	0.3	0.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	710	657	276	2163	0	460	459	399	2	5	0
V/C Ratio(X)	0.00	0.74	0.74	0.75	0.27	0.00	0.75	0.00	0.02	0.00	0.00	0.00
Avail Cap(c_a), veh/h	149	840	777	577	2543	0	867	864	752	867	1729	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.8	18.1	28.7	5.9	0.0	24.4	0.0	20.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.0	3.2	4.1	0.1	0.0	2.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.4	8.8	4.2	2.5	0.0	6.5	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.8	21.3	32.8	6.0	0.0	26.9	0.0	20.2	0.0	0.0	0.0
LnGrp LOS		C	C	C	A		C		C			
Approach Vol, veh/h		1016			794			354			0	
Approach Delay, s/veh		21.1			13.0			26.7			0.0	
Approach LOS		C			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	33.6		22.6	0.0	49.1		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	10.2	20.7		14.8	0.0	7.5		0.0
Green Ext Time (p_c), s	0.4	7.9		1.0	0.0	13.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	178.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	163	310	80	60	560	120	50	48	0	10	40	204
Future Vol, veh/h	163	310	80	60	560	120	50	48	0	10	40	204
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	177	337	87	65	609	130	54	52	0	11	43	222

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	726	357	174	569	468	72	275	0	0	62	0	0
Stage 1	186	186	-	171	171	-	-	-	-	-	-	-
Stage 2	540	171	-	398	297	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	340	569	869	433	~ 493	990	1288	-	-	1541	-	-
Stage 1	816	746	-	831	757	-	-	-	-	-	-	-
Stage 2	526	757	-	628	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	532	855	182	~ 461	974	1277	-	-	1528	-	-
Mov Cap-2 Maneuver	-	532	-	182	~ 461	-	-	-	-	-	-	-
Stage 1	775	734	-	789	719	-	-	-	-	-	-	-
Stage 2	~ 66	719	-	300	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 395.6	4.1	0.3
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1277	-	-	-	611	444	1528	-	-
HCM Lane V/C Ratio	0.043	-	-	-	0.418	1.812	0.007	-	-
HCM Control Delay (s)	7.9	-	-	-	15.1	$ 395.6	7.4	-	-
HCM Lane LOS	A	-	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	2.1	51	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	180	924	90	50	220	690	590	70	1090	20
Future Volume (veh/h)	20	40	180	924	90	50	220	690	590	70	1090	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	43	78	1004	98	16	239	750	280	76	1185	21
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	158	995	538	456	393	1084	469	313	1342	24
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.22	0.31	0.31	0.18	0.26	0.24
Sat Flow, veh/h	1774	1863	1533	3442	1863	1577	1774	3539	1530	1774	5141	91
Grp Volume(v), veh/h	22	43	78	1004	98	16	239	750	280	76	781	425
Grp Sat Flow(s),veh/h/ln	1774	1863	1533	1721	1863	1577	1774	1770	1530	1774	1695	1842
Q Serve(g_s), s	1.4	2.7	6.2	37.0	5.1	0.9	15.5	23.9	19.9	4.7	28.3	28.3
Cycle Q Clear(g_c), s	1.4	2.7	6.2	37.0	5.1	0.9	15.5	23.9	19.9	4.7	28.3	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	183	192	158	995	538	456	393	1084	469	313	885	481
V/C Ratio(X)	0.12	0.22	0.49	1.01	0.18	0.04	0.61	0.69	0.60	0.24	0.88	0.88
Avail Cap(c_a), veh/h	396	416	342	995	538	456	393	1084	469	313	885	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	52.7	54.2	45.5	34.1	32.7	44.8	39.1	37.7	45.4	45.4	45.5
Incr Delay (d2), s/veh	0.1	0.2	0.9	30.8	0.1	0.0	1.9	3.6	5.5	0.1	12.4	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	2.7	21.8	2.6	0.4	7.8	12.2	9.1	2.3	14.8	17.1
LnGrp Delay(d),s/veh	52.2	52.9	55.1	76.3	34.2	32.7	46.8	42.7	43.2	45.5	57.9	65.9
LnGrp LOS	D	D	E	F	C	C	D	D	D	D	E	E
Approach Vol, veh/h		143			1118			1269			1282	
Approach Delay, s/veh		54.0			72.0			43.6			59.8	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	43.2		17.2	32.4	37.4		41.0
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.1	37.1		27.0	10.9	31.3		34.9
Max Q Clear Time (g_c+I1), s	6.7	25.9		8.2	17.5	30.3		39.0
Green Ext Time (p_c), s	0.0	1.8		0.1	0.0	0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	10	120	85	20	30	70	1067	131	30	1676	364
Future Volume (veh/h)	410	10	120	85	20	30	70	1067	131	30	1676	364
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	446	11	55	92	22	26	76	1160	135	33	1822	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	423	9	490	40	10	2	124	1808	210	72	1900	0
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.30	0.07	0.57	0.55	0.04	0.54	0.00
Sat Flow, veh/h	1200	30	1571	0	33	8	1774	3195	371	1774	3632	0
Grp Volume(v), veh/h	457	0	55	140	0	0	76	641	654	33	1822	0
Grp Sat Flow(s),veh/h/ln	1230	0	1571	41	0	0	1774	1770	1796	1774	1770	0
Q Serve(g_s), s	0.0	0.0	3.7	0.0	0.0	0.0	6.1	36.4	36.8	2.7	72.4	0.0
Cycle Q Clear(g_c), s	46.0	0.0	3.7	46.0	0.0	0.0	6.1	36.4	36.8	2.7	72.4	0.0
Prop In Lane	0.98		1.00	0.66		0.19	1.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	432	0	490	53	0	0	124	1001	1016	72	1900	0
V/C Ratio(X)	1.06	0.00	0.11	2.63	0.00	0.00	0.61	0.64	0.64	0.46	0.96	0.00
Avail Cap(c_a), veh/h	432	0	490	53	0	0	132	1001	1016	132	1945	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.3	0.0	36.1	63.0	0.0	0.0	66.6	21.8	22.0	69.1	32.6	0.0
Incr Delay (d2), s/veh	59.3	0.0	0.0	784.6	0.0	0.0	4.9	1.1	1.1	1.7	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.6	0.0	1.6	13.8	0.0	0.0	3.2	17.9	18.5	1.4	38.3	0.0
LnGrp Delay(d),s/veh	112.6	0.0	36.2	847.6	0.0	0.0	71.5	22.9	23.1	70.8	44.5	0.0
LnGrp LOS	F		D	F			E	C	C	E	D	
Approach Vol, veh/h		512			140			1371			1855	
Approach Delay, s/veh		104.4			847.6			25.7			45.0	
Approach LOS		F			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	87.4		50.0	14.3	83.1		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	4.7	38.8		48.0	8.1	74.4		48.0
Green Ext Time (p_c), s	0.0	23.5		0.0	0.0	2.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	380	95	20	680	280	88	397	40	220	451	390
Future Volume (veh/h)	210	380	95	20	680	280	88	397	40	220	451	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	228	413	90	22	739	105	96	432	11	239	490	258
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	321	1166	251	26	1194	510	125	986	440	332	576	489
Arrive On Green	0.10	0.42	0.41	0.01	0.34	0.34	0.07	0.28	0.28	0.10	0.32	0.32
Sat Flow, veh/h	3343	2785	600	1774	3539	1513	1774	3539	1580	3343	1810	1534
Grp Volume(v), veh/h	228	253	250	22	739	105	96	432	11	239	490	258
Grp Sat Flow(s),veh/h/ln	1672	1719	1666	1774	1770	1513	1774	1770	1580	1672	1810	1534
Q Serve(g_s), s	6.0	9.1	9.3	1.1	15.8	4.5	4.8	9.0	0.5	6.3	22.8	12.4
Cycle Q Clear(g_c), s	6.0	9.1	9.3	1.1	15.8	4.5	4.8	9.0	0.5	6.3	22.8	12.4
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	720	698	26	1194	510	125	986	440	332	576	489
V/C Ratio(X)	0.71	0.35	0.36	0.84	0.62	0.21	0.77	0.44	0.02	0.72	0.85	0.53
Avail Cap(c_a), veh/h	1112	720	698	590	1432	612	590	1216	543	1112	622	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	17.9	18.0	44.3	25.0	21.3	41.2	26.7	23.6	39.4	28.7	25.2
Incr Delay (d2), s/veh	2.9	0.3	0.3	47.0	0.6	0.2	9.3	0.3	0.0	2.9	10.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.3	4.3	0.9	7.8	1.9	2.7	4.5	0.2	3.0	12.9	5.4
LnGrp Delay(d),s/veh	42.4	18.2	18.3	91.3	25.6	21.5	50.5	27.0	23.7	42.3	39.0	26.1
LnGrp LOS	D	B	B	F	C	C	D	C	C	D	D	C
Approach Vol, veh/h		731			866			539			987	
Approach Delay, s/veh		25.8			26.8			31.2			36.4	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	41.8	10.4	32.7	12.7	34.4	13.0	30.1
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	3.1	11.3	6.8	24.8	8.0	17.8	8.3	11.0
Green Ext Time (p_c), s	0.0	9.4	0.2	2.8	0.7	7.4	0.7	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	153	20	30	194	50	20	160	20	60	230	544
Future Volume (veh/h)	360	153	20	30	194	50	20	160	20	60	230	544
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1825	1900
Adj Flow Rate, veh/h	391	166	15	33	211	39	22	174	15	65	250	349
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	450	1267	113	59	490	89	43	922	79	108	528	460
Arrive On Green	0.25	0.39	0.37	0.03	0.16	0.15	0.02	0.28	0.28	0.06	0.30	0.32
Sat Flow, veh/h	1774	3286	294	1774	2974	538	1774	3301	282	1723	1734	1513
Grp Volume(v), veh/h	391	89	92	33	124	126	22	93	96	65	250	349
Grp Sat Flow(s),veh/h/ln	1774	1770	1811	1774	1770	1742	1774	1770	1813	1723	1734	1513
Q Serve(g_s), s	15.9	2.4	2.5	1.4	4.7	4.9	0.9	3.0	3.0	2.8	8.8	15.6
Cycle Q Clear(g_c), s	15.9	2.4	2.5	1.4	4.7	4.9	0.9	3.0	3.0	2.8	8.8	15.6
Prop In Lane	1.00		0.16	1.00		0.31	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	450	682	698	59	292	287	43	494	507	108	528	460
V/C Ratio(X)	0.87	0.13	0.13	0.56	0.42	0.44	0.51	0.19	0.19	0.60	0.47	0.76
Avail Cap(c_a), veh/h	1297	847	867	354	847	834	354	823	844	367	807	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	14.9	15.0	35.8	28.2	28.4	36.2	20.6	20.6	34.3	21.3	23.2
Incr Delay (d2), s/veh	5.2	0.1	0.1	8.1	1.0	1.1	8.8	0.2	0.2	5.3	0.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	1.2	1.3	0.8	2.4	2.4	0.6	1.5	1.6	1.5	4.3	6.8
LnGrp Delay(d),s/veh	32.1	15.0	15.1	44.0	29.2	29.5	45.1	20.8	20.8	39.6	21.9	25.8
LnGrp LOS	C	B	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		572			283			211			664	
Approach Delay, s/veh		26.7			31.0			23.3			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	26.0	7.5	33.0	6.8	27.9	24.1	16.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	4.8	5.0	3.4	4.5	2.9	17.6	17.9	6.9
Green Ext Time (p_c), s	0.1	5.1	0.0	2.5	0.0	4.4	1.2	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	180	30	100	300	20	50	383	130	20	419	220
Future Volume (veh/h)	140	180	30	100	300	20	50	383	130	20	419	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	196	7	109	326	19	54	416	56	22	455	100
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	235	459	390	184	739	43	156	701	588	107	649	543
Arrive On Green	0.14	0.25	0.25	0.11	0.22	0.20	0.09	0.38	0.38	0.06	0.35	0.35
Sat Flow, veh/h	1723	1810	1538	1723	3293	191	1774	1863	1562	1774	1863	1557
Grp Volume(v), veh/h	152	196	7	109	169	176	54	416	56	22	455	100
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1765	1774	1863	1562	1774	1863	1557
Q Serve(g_s), s	6.6	7.2	0.3	4.8	6.7	6.8	2.3	14.2	1.8	0.9	16.6	3.5
Cycle Q Clear(g_c), s	6.6	7.2	0.3	4.8	6.7	6.8	2.3	14.2	1.8	0.9	16.6	3.5
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	459	390	184	386	396	156	701	588	107	649	543
V/C Ratio(X)	0.65	0.43	0.02	0.59	0.44	0.44	0.35	0.59	0.10	0.20	0.70	0.18
Avail Cap(c_a), veh/h	785	939	798	371	698	717	247	1320	1106	247	848	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	24.7	22.1	33.6	26.4	26.5	33.9	19.8	15.9	35.3	22.2	17.9
Incr Delay (d2), s/veh	3.0	0.6	0.0	3.0	0.8	0.8	1.3	0.8	0.1	0.9	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.7	0.1	2.4	3.3	3.4	1.2	7.4	0.8	0.5	8.8	1.5
LnGrp Delay(d),s/veh	35.3	25.3	22.1	36.6	27.2	27.3	35.2	20.6	16.0	36.3	23.9	18.1
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		355			454			526			577	
Approach Delay, s/veh		29.5			29.5			21.6			23.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	24.1	11.0	31.6	14.8	21.7	8.8	33.7
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	6.8	9.2	4.3	18.6	8.6	8.8	2.9	16.2
Green Ext Time (p_c), s	0.1	3.3	0.0	5.3	0.4	3.0	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	490	170	210	710	44	240	159	210	66	171	30
Future Volume (veh/h)	10	490	170	210	710	44	240	159	210	66	171	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	0.97		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	533	155	228	772	46	261	173	77	72	186	28
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	32	920	266	279	1627	97	387	673	548	399	568	85
Arrive On Green	0.02	0.35	0.33	0.16	0.50	0.48	0.36	0.36	0.36	0.36	0.36	0.35
Sat Flow, veh/h	1723	2610	755	1723	3280	195	1133	1863	1516	1096	1572	237
Grp Volume(v), veh/h	11	350	338	228	404	414	261	173	77	72	0	214
Grp Sat Flow(s),veh/h/ln	1723	1719	1646	1723	1719	1757	1133	1863	1516	1096	0	1808
Q Serve(g_s), s	0.6	16.0	16.3	12.3	15.0	15.0	20.9	6.3	3.3	4.8	0.0	8.3
Cycle Q Clear(g_c), s	0.6	16.0	16.3	12.3	15.0	15.0	29.2	6.3	3.3	11.1	0.0	8.3
Prop In Lane	1.00		0.46	1.00		0.11	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	32	606	580	279	853	871	387	673	548	399	0	653
V/C Ratio(X)	0.35	0.58	0.58	0.82	0.47	0.47	0.68	0.26	0.14	0.18	0.00	0.33
Avail Cap(c_a), veh/h	553	926	886	375	853	871	458	791	644	468	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.8	25.4	25.9	39.1	16.0	16.1	32.9	21.7	20.7	25.6	0.0	22.4
Incr Delay (d2), s/veh	6.5	1.9	2.0	10.0	0.9	0.9	3.1	0.2	0.1	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.9	7.7	6.7	7.3	7.5	6.9	3.3	1.4	1.5	0.0	4.2
LnGrp Delay(d),s/veh	53.3	27.3	27.8	49.1	16.9	17.0	36.0	21.9	20.9	25.8	0.0	22.7
LnGrp LOS	D	C	C	D	B	B	D	C	C	C		C
Approach Vol, veh/h		699			1046			511			286	
Approach Delay, s/veh		28.0			23.9			28.9			23.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	38.0		38.9	5.8	51.9		38.9
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	14.3	18.3		13.1	2.6	17.0		31.2
Green Ext Time (p_c), s	0.3	13.8		4.1	0.0	16.5		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	488	20	100	800	130	40	100	100	110	100	80
Future Volume (veh/h)	20	488	20	100	800	130	40	100	100	110	100	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	530	20	109	870	89	43	109	16	120	109	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1454	55	167	1691	741	350	367	290	211	222	189
Arrive On Green	0.03	0.42	0.40	0.09	0.48	0.48	0.20	0.20	0.20	0.12	0.12	0.00
Sat Flow, veh/h	1774	3476	131	1774	3539	1550	1774	1863	1470	1774	1863	1583
Grp Volume(v), veh/h	22	269	281	109	870	89	43	109	16	120	109	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1837	1774	1770	1550	1774	1863	1470	1774	1863	1583
Q Serve(g_s), s	1.1	9.8	9.8	5.5	15.9	3.0	1.9	4.7	0.8	6.0	5.1	0.0
Cycle Q Clear(g_c), s	1.1	9.8	9.8	5.5	15.9	3.0	1.9	4.7	0.8	6.0	5.1	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	740	769	167	1691	741	350	367	290	211	222	189
V/C Ratio(X)	0.36	0.36	0.36	0.65	0.51	0.12	0.12	0.30	0.06	0.57	0.49	0.00
Avail Cap(c_a), veh/h	209	871	904	494	2310	1012	683	718	566	494	518	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.1	18.6	18.7	40.8	16.9	13.5	30.9	32.0	30.5	38.9	38.5	0.0
Incr Delay (d2), s/veh	3.5	0.6	0.6	4.2	0.5	0.2	0.2	0.4	0.1	2.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.8	5.1	2.9	7.9	1.3	0.9	2.4	0.3	3.1	2.7	0.0
LnGrp Delay(d),s/veh	47.6	19.3	19.3	45.1	17.4	13.7	31.0	32.4	30.5	41.3	40.2	0.0
LnGrp LOS	D	B	B	D	B	B	C	C	C	D	D	
Approach Vol, veh/h		572			1068			168			229	
Approach Delay, s/veh		20.4			19.9			31.9			40.8	
Approach LOS		C			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.8	43.1		15.1	7.2	48.7		22.4
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	7.5	11.8		8.0	3.1	17.9		6.7
Green Ext Time (p_c), s	0.2	21.1		0.8	0.0	24.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	100	40	260	220	20	70	320	210	10	595	315
Future Volume (veh/h)	168	100	40	260	220	20	70	320	210	10	595	315
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	183	109	6	283	239	0	76	348	148	11	647	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	625	34	344	459	390	319	862	360	89	1218	0
Arrive On Green	0.13	0.18	0.18	0.19	0.25	0.00	0.35	0.35	0.35	0.35	0.35	0.00
Sat Flow, veh/h	1774	3408	186	1774	1863	1583	779	2430	1016	18	3521	0
Grp Volume(v), veh/h	183	56	59	283	239	0	76	252	244	352	306	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1824	1774	1863	1583	779	1770	1676	1843	1610	0
Q Serve(g_s), s	4.5	1.2	1.2	6.9	5.0	0.0	3.9	4.8	4.9	0.0	6.8	0.0
Cycle Q Clear(g_c), s	4.5	1.2	1.2	6.9	5.0	0.0	10.6	4.8	4.9	6.7	6.8	0.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.61	0.03		0.00
Lane Grp Cap(c), veh/h	232	325	335	344	459	390	319	628	594	737	571	0
V/C Ratio(X)	0.79	0.17	0.18	0.82	0.52	0.00	0.24	0.40	0.41	0.48	0.54	0.00
Avail Cap(c_a), veh/h	792	1185	1221	1188	1663	1413	582	1224	1160	1344	1114	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.9	15.4	15.4	17.3	14.6	0.0	15.8	10.9	10.9	11.5	11.5	0.0
Incr Delay (d2), s/veh	2.2	0.1	0.1	1.9	0.3	0.0	0.1	0.2	0.2	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.6	0.6	3.5	2.6	0.0	0.8	2.3	2.3	3.5	3.0	0.0
LnGrp Delay(d),s/veh	21.1	15.5	15.5	19.2	14.9	0.0	15.9	11.0	11.1	11.7	11.8	0.0
LnGrp LOS	C	B	B	B	B		B	B	B	B	B	
Approach Vol, veh/h		298			522			572			658	
Approach Delay, s/veh		19.0			17.2			11.7			11.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	12.2		19.9	9.9	15.0		19.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	8.9	3.2		8.8	6.5	7.0		12.6
Green Ext Time (p_c), s	0.1	0.6		2.6	0.1	0.7		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	170	110	425	400	30	110	410	420	70	630	331
Future Volume (veh/h)	167	170	110	425	400	30	110	410	420	70	630	331
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	182	185	40	462	435	9	120	446	150	76	685	303
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	235	484	102	506	1134	505	165	1114	489	113	989	431
Arrive On Green	0.13	0.17	0.15	0.29	0.32	0.32	0.10	0.32	0.32	0.07	0.29	0.28
Sat Flow, veh/h	1774	2897	611	1774	3539	1576	1723	3438	1508	1723	3366	1466
Grp Volume(v), veh/h	182	111	114	462	435	9	120	446	150	76	670	318
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1770	1576	1723	1719	1508	1723	1647	1540
Q Serve(g_s), s	10.1	5.7	5.9	25.5	9.7	0.4	6.9	10.2	7.6	4.4	18.3	18.8
Cycle Q Clear(g_c), s	10.1	5.7	5.9	25.5	9.7	0.4	6.9	10.2	7.6	4.4	18.3	18.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	235	296	291	506	1134	505	165	1114	489	113	967	452
V/C Ratio(X)	0.77	0.38	0.39	0.91	0.38	0.02	0.73	0.40	0.31	0.67	0.69	0.70
Avail Cap(c_a), veh/h	543	629	618	543	1257	560	663	1900	834	187	967	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	37.5	37.8	35.0	26.7	23.5	44.5	26.6	25.7	46.3	31.7	32.5
Incr Delay (d2), s/veh	5.4	0.8	0.9	19.1	0.2	0.0	2.3	0.2	0.4	2.6	2.8	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	2.8	2.9	15.1	4.7	0.2	3.4	4.9	3.2	2.2	8.7	8.8
LnGrp Delay(d),s/veh	47.9	38.3	38.7	54.1	26.9	23.6	46.8	26.8	26.1	48.9	34.5	38.7
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		407			906			716			1064	
Approach Delay, s/veh		42.7			40.7			30.0			36.8	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	36.8	32.9	20.9	13.7	33.8	17.4	36.5
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5
Max Q Clear Time (g_c+I1), s	6.4	12.2	27.5	7.9	8.9	20.8	12.1	11.7
Green Ext Time (p_c), s	0.0	19.1	0.4	4.4	0.1	4.8	0.4	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	0	20	10	20	30	20	220	0	0	204	173
Future Vol, veh/h	104	0	20	10	20	30	20	220	0	0	204	173
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	113	0	22	11	22	33	22	239	0	0	222	188
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.3	9.1	9.9	10.1
HCM LOS	B	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	21%	0%	84%	17%	0%	0%
Vol Thru, %	79%	100%	0%	33%	100%	0%
Vol Right, %	0%	0%	16%	50%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	147	124	60	204	173
LT Vol	20	0	104	10	0	0
Through Vol	73	147	0	20	204	0
RT Vol	0	0	20	30	0	173
Lane Flow Rate	101	159	135	65	222	188
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.158	0.243	0.215	0.1	0.333	0.246
Departure Headway (Hd)	5.707	5.599	5.731	5.493	5.411	4.705
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	632	646	631	656	656	752
Service Time	3.407	3.299	3.731	3.498	3.208	2.501
HCM Lane V/C Ratio	0.16	0.246	0.214	0.099	0.338	0.25
HCM Control Delay	9.5	10.1	10.3	9.1	10.9	9.1
HCM Lane LOS	A	B	B	A	B	A
HCM 95th-tile Q	0.6	0.9	0.8	0.3	1.5	1

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	194	20	10	10	20	33
Future Vol, veh/h	194	20	10	10	20	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	211	22	11	11	22	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	55	11	22	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	941	1058	1593	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	934	1058	1593	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1593	-	934	1058	-	-
HCM Lane V/C Ratio	0.007	-	0.226	0.021	-	-
HCM Control Delay (s)	7.3	0	10	8.5	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.9	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	278	70	220	425	70	80	447	140	50	781	185
Future Volume (veh/h)	158	278	70	220	425	70	80	447	140	50	781	185
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	172	302	58	239	462	16	87	486	85	54	849	186
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	230	592	112	297	843	360	134	1445	640	94	1112	244
Arrive On Green	0.13	0.20	0.19	0.17	0.24	0.24	0.08	0.42	0.42	0.05	0.40	0.38
Sat Flow, veh/h	1774	2957	559	1774	3539	1512	1723	3438	1523	1723	2803	614
Grp Volume(v), veh/h	172	179	181	239	462	16	87	486	85	54	521	514
Grp Sat Flow(s),veh/h/ln	1774	1770	1747	1774	1770	1512	1723	1719	1523	1723	1719	1698
Q Serve(g_s), s	9.5	9.1	9.4	13.2	11.6	0.8	5.0	9.7	3.5	3.1	26.6	26.7
Cycle Q Clear(g_c), s	9.5	9.1	9.4	13.2	11.6	0.8	5.0	9.7	3.5	3.1	26.6	26.7
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	230	354	350	297	843	360	134	1445	640	94	682	674
V/C Ratio(X)	0.75	0.51	0.52	0.80	0.55	0.04	0.65	0.34	0.13	0.58	0.76	0.76
Avail Cap(c_a), veh/h	357	556	549	404	1207	515	170	1637	725	182	830	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	36.1	36.4	40.6	33.9	29.8	45.4	19.8	18.1	46.8	26.5	26.7
Incr Delay (d2), s/veh	4.8	1.1	1.2	8.2	0.6	0.1	5.6	0.1	0.1	5.5	3.4	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.6	4.7	7.1	5.7	0.3	2.6	4.6	1.5	1.6	13.2	13.1
LnGrp Delay(d),s/veh	47.4	37.2	37.6	48.8	34.4	29.8	51.1	20.0	18.1	52.3	29.9	30.2
LnGrp LOS	D	D	D	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		532			717			658			1089	
Approach Delay, s/veh		40.7			39.1			23.9			31.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	24.3	11.9	44.3	17.1	28.2	9.5	46.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.6	30.4	8.5	47.5	18.9	33.1	9.2	46.8
Max Q Clear Time (g_c+I1), s	15.2	11.4	7.0	28.7	11.5	13.6	5.1	11.7
Green Ext Time (p_c), s	0.4	5.0	0.0	10.1	0.3	5.1	0.0	13.6

Intersection Summary			
HCM 2010 Ctrl Delay			33.1
HCM 2010 LOS			C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	873	1125	20	30	600
Future Volume (vph)	210	873	1125	20	30	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3429		1770	1583
Flt Permitted	0.13	1.00	1.00		0.95	1.00
Satd. Flow (perm)	238	3438	3429		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	949	1223	22	33	652
RTOR Reduction (vph)	0	0	1	0	0	379
Lane Group Flow (vph)	228	949	1244	0	33	273
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	59.2	63.8	48.2		18.4	18.4
Effective Green, g (s)	60.4	64.4	48.8		18.6	18.6
Actuated g/C Ratio	0.66	0.71	0.54		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	346	2433	1838		361	323
v/s Ratio Prot	c0.08	0.28	c0.36		0.02	
v/s Ratio Perm	0.35					c0.17
v/c Ratio	0.66	0.39	0.68		0.09	0.85
Uniform Delay, d1	11.0	5.4	15.4		29.3	34.8
Progression Factor	1.20	0.29	1.00		1.00	1.00
Incremental Delay, d2	3.2	0.1	1.0		0.0	17.4
Delay (s)	16.4	1.7	16.4		29.4	52.3
Level of Service	B	A	B		C	D
Approach Delay (s)		4.5	16.4		51.2	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	220	20	1010	460	320	20	328	960	170	290	20
Future Volume (veh/h)	30	220	20	1010	460	320	20	328	960	170	290	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	33	239	18	1098	500	0	22	357	803	185	315	19
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	79	579	43	1197	1689	755	71	839	1630	315	979	59
Arrive On Green	0.04	0.17	0.16	0.36	0.49	0.00	0.04	0.24	0.24	0.09	0.30	0.28
Sat Flow, veh/h	1774	3339	250	3343	3438	1538	1723	3438	2707	3343	3296	198
Grp Volume(v), veh/h	33	126	131	1098	500	0	22	357	803	185	164	170
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1672	1719	1538	1723	1719	1354	1672	1719	1775
Q Serve(g_s), s	2.3	8.0	8.2	39.8	11.0	0.0	1.6	11.1	21.3	6.7	9.4	9.5
Cycle Q Clear(g_c), s	2.3	8.0	8.2	39.8	11.0	0.0	1.6	11.1	21.3	6.7	9.4	9.5
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	79	307	316	1197	1689	755	71	839	1630	315	511	527
V/C Ratio(X)	0.42	0.41	0.42	0.92	0.30	0.00	0.31	0.43	0.49	0.59	0.32	0.32
Avail Cap(c_a), veh/h	154	642	660	1213	2196	982	353	976	1737	817	556	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	46.6	46.8	38.9	19.2	0.0	59.0	40.4	14.3	55.1	34.6	34.8
Incr Delay (d2), s/veh	1.3	1.9	1.9	11.5	0.2	0.0	0.9	0.3	0.2	3.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.1	4.2	20.2	5.3	0.0	0.8	5.3	7.9	3.3	4.5	4.7
LnGrp Delay(d),s/veh	60.3	48.5	48.6	50.4	19.4	0.0	59.9	40.8	14.5	58.8	35.0	35.1
LnGrp LOS	E	D	D	D	B		E	D	B	E	C	D
Approach Vol, veh/h		290			1598			1182			519	
Approach Delay, s/veh		49.9			40.7			23.3			43.5	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.4	26.5	9.2	41.7	9.6	66.3	16.0	35.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	41.8	10.2	3.6	11.5	4.3	13.0	8.7	23.3
Green Ext Time (p_c), s	1.6	10.4	0.0	9.0	0.0	11.9	1.2	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	570	80	180	40	1118	280	230	1382	20
Future Volume (veh/h)	0	0	20	570	80	180	40	1118	280	230	1382	20
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				682	0	114	43	1215	0	250	1502	21
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				856	0	376	225	1761	748	283	2410	34
Arrive On Green				0.24	0.00	0.24	0.47	0.47	0.00	0.16	0.67	0.67
Sat Flow, veh/h				3548	0	1560	341	3725	1583	1774	3574	50
Grp Volume(v), veh/h				682	0	114	43	1215	0	250	743	780
Grp Sat Flow(s),veh/h/ln				1774	0	1560	341	1863	1583	1774	1770	1854
Q Serve(g_s), s				17.2	0.0	5.7	7.7	24.3	0.0	13.1	22.4	22.5
Cycle Q Clear(g_c), s				17.2	0.0	5.7	11.0	24.3	0.0	13.1	22.4	22.5
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h				856	0	376	225	1761	748	283	1194	1250
V/C Ratio(X)				0.80	0.00	0.30	0.19	0.69	0.00	0.88	0.62	0.62
Avail Cap(c_a), veh/h				1344	0	591	265	2196	933	299	1416	1483
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				33.9	0.0	29.5	17.2	19.6	0.0	39.0	8.7	8.7
Incr Delay (d2), s/veh				0.8	0.0	0.2	0.2	0.4	0.0	25.0	0.3	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.5	0.0	2.5	0.7	12.6	0.0	8.4	10.8	11.4
LnGrp Delay(d),s/veh				34.6	0.0	29.7	17.3	20.0	0.0	64.0	9.0	9.0
LnGrp LOS				C		C	B	C		E	A	A
Approach Vol, veh/h					796			1258			1773	
Approach Delay, s/veh					33.9			19.9			16.8	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	19.2	48.9				68.1		26.9
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	15.1	26.3				24.5		19.2
Green Ext Time (p_c), s	0.1	18.7				24.9		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	790	0	0	648	1012	960
Future Volume (vph)	790	0	0	648	1012	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	859	0	0	704	1100	1043
RTOR Reduction (vph)	0	0	0	73	0	525
Lane Group Flow (vph)	859	0	0	631	1100	518
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	16.5			24.2	24.2	25.2
Effective Green, g (s)	17.5			25.2	25.2	25.2
Actuated g/C Ratio	0.35			0.50	0.50	0.50
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1722			1385	1706	1385
v/s Ratio Prot	c0.17			0.23	c0.32	0.19
v/s Ratio Perm						
v/c Ratio	0.50			0.46	0.64	0.37
Uniform Delay, d1	13.1			8.3	9.4	7.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.2	0.8	0.2
Delay (s)	13.4			8.5	10.3	8.0
Level of Service	B			A	B	A
Approach Delay (s)		13.4	8.5		9.2	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	584	620	340	290	640	250	590	274	250	210	405	755
Future Volume (veh/h)	584	620	340	290	640	250	590	274	250	210	405	755
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	635	674	321	315	696	0	641	298	145	228	440	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	370	564	268	301	1064	476	370	428	203	503	474	0
Arrive On Green	0.11	0.24	0.24	0.17	0.31	0.00	0.21	0.18	0.18	0.29	0.26	0.00
Sat Flow, veh/h	3442	2328	1109	1723	3438	1538	1774	2330	1107	1723	1810	0
Grp Volume(v), veh/h	635	512	483	315	696	0	641	225	218	228	440	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1667	1723	1719	1538	1774	1770	1667	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	26.1	0.0	31.0	17.6	18.3	16.1	35.2	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	26.1	0.0	31.0	17.6	18.3	16.1	35.2	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	370	429	404	301	1064	476	370	325	306	503	474	0
V/C Ratio(X)	1.71	1.20	1.20	1.05	0.65	0.00	1.73	0.69	0.71	0.45	0.93	0.00
Avail Cap(c_a), veh/h	370	429	404	301	1064	476	370	548	516	503	499	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	66.3	56.3	56.6	61.3	44.4	0.0	58.8	56.7	57.3	43.0	53.5	0.0
Incr Delay (d2), s/veh	332.7	108.7	109.8	64.1	2.7	0.0	340.8	9.1	10.6	0.2	25.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.7	30.4	28.8	17.7	12.8	0.0	50.1	9.4	9.3	7.7	21.0	0.0
LnGrp Delay(d),s/veh	399.0	165.1	166.4	125.4	47.1	0.0	399.6	65.9	67.9	43.2	79.3	0.0
LnGrp LOS	F	F	F	F	D		F	E	E	D	E	
Approach Vol, veh/h		1630			1011			1084			668	
Approach Delay, s/veh		256.6			71.5			263.6			67.0	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	35.0	43.7	20.0	50.0	47.4	31.3
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	28.0	38.0	33.0	37.2	18.0	28.1	18.1	20.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	15.1	2.6	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	186.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	830	0	0	1010	70	70	658	110	0	0	0
Future Volume (veh/h)	240	830	0	0	1010	70	70	658	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	261	902	0	0	1098	71	76	715	48			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	333	2318	0	0	1733	112	455	907	395			
Arrive On Green	0.19	1.00	0.00	0.00	0.51	0.50	0.26	0.26	0.26			
Sat Flow, veh/h	3442	3632	0	0	3468	218	1774	3539	1542			
Grp Volume(v), veh/h	261	902	0	0	575	594	76	715	48			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1823	1774	1770	1542			
Q Serve(g_s), s	6.5	0.0	0.0	0.0	21.1	21.2	3.0	16.9	2.2			
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.0	21.1	21.2	3.0	16.9	2.2			
Prop In Lane	1.00		0.00	0.00		0.12	1.00		1.00			
Lane Grp Cap(c), veh/h	333	2318	0	0	909	937	455	907	395			
V/C Ratio(X)	0.78	0.39	0.00	0.00	0.63	0.63	0.17	0.79	0.12			
Avail Cap(c_a), veh/h	344	2318	0	0	909	937	552	1101	480			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	35.4	0.0	0.0	0.0	15.8	15.8	26.0	31.2	25.7			
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	3.4	3.3	0.2	3.4	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.0	11.1	11.4	1.5	8.7	0.9			
LnGrp Delay(d),s/veh	36.5	0.0	0.0	0.0	19.1	19.1	26.2	34.6	25.9			
LnGrp LOS	D	A			B	B	C	C	C			
Approach Vol, veh/h		1163			1169			839				
Approach Delay, s/veh		8.2			19.1			33.4				
Approach LOS		A			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		62.9			12.7	50.2		27.1
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		53.1			* 8.8	40.1		27.8
Max Q Clear Time (g_c+I1), s		2.0			8.5	23.2		18.9
Green Ext Time (p_c), s		27.6			0.0	13.1		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	850	80	150	930	0	0	0	0	210	1388	490
Future Volume (veh/h)	0	850	80	150	930	0	0	0	0	210	1388	490
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	924	0	163	1011	0				228	1509	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1060	0	198	1612	0				206	1439	721
Arrive On Green	0.00	0.30	0.00	0.22	0.91	0.00				0.46	0.46	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				451	3158	1583
Grp Volume(v), veh/h	0	924	0	163	1011	0				930	807	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1840	1770	1583
Q Serve(g_s), s	0.0	22.3	0.0	7.9	5.3	0.0				41.0	41.0	0.0
Cycle Q Clear(g_c), s	0.0	22.3	0.0	7.9	5.3	0.0				41.0	41.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.25		1.00
Lane Grp Cap(c), veh/h	0	1060	0	198	1612	0				838	806	721
V/C Ratio(X)	0.00	0.87	0.00	0.82	0.63	0.00				1.11	1.00	0.00
Avail Cap(c_a), veh/h	0	1060	0	256	1612	0				838	806	721
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.71	0.71	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.9	0.0	34.1	2.4	0.0				24.5	24.5	0.0
Incr Delay (d2), s/veh	0.0	9.8	0.0	12.1	1.3	0.0				65.4	32.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.4	0.0	4.5	2.3	0.0				36.0	27.1	0.0
LnGrp Delay(d),s/veh	0.0	39.7	0.0	46.2	3.7	0.0				89.9	56.6	0.0
LnGrp LOS		D		D	A					F	F	
Approach Vol, veh/h		924			1174						1737	
Approach Delay, s/veh		39.7			9.6						74.4	
Approach LOS		D			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.0	31.0		45.0		45.0		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 13	23.1		* 41		40.1		
Max Q Clear Time (g_c+I1), s	9.9	24.3		43.0		7.3		
Green Ext Time (p_c), s	0.1	0.0		0.0		20.4		

Intersection Summary		
HCM 2010 Ctrl Delay		46.2
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	550	290	611	390	110	260	940	700	120	630	140
Future Volume (veh/h)	230	550	290	611	390	110	260	940	700	120	630	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	598	191	664	424	103	283	1022	436	130	685	139
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	315	742	331	726	931	224	313	1237	553	159	771	156
Arrive On Green	0.09	0.22	0.22	0.22	0.34	0.33	0.18	0.35	0.35	0.09	0.26	0.25
Sat Flow, veh/h	3343	3438	1534	3343	2749	662	1774	3539	1583	1774	2931	594
Grp Volume(v), veh/h	250	598	191	664	264	263	283	1022	436	130	413	411
Grp Sat Flow(s),veh/h/ln	1672	1719	1534	1672	1719	1693	1774	1770	1583	1774	1770	1755
Q Serve(g_s), s	9.2	20.6	13.9	24.3	15.0	15.3	19.5	33.0	30.9	9.0	28.1	28.2
Cycle Q Clear(g_c), s	9.2	20.6	13.9	24.3	15.0	15.3	19.5	33.0	30.9	9.0	28.1	28.2
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	315	742	331	726	582	573	313	1237	553	159	465	462
V/C Ratio(X)	0.79	0.81	0.58	0.92	0.45	0.46	0.91	0.83	0.79	0.82	0.89	0.89
Avail Cap(c_a), veh/h	562	990	442	829	582	573	440	1237	553	440	510	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	46.5	43.9	47.8	32.3	32.6	50.5	37.2	36.5	55.9	44.3	44.5
Incr Delay (d2), s/veh	3.4	2.7	0.6	12.7	0.2	0.2	14.2	4.7	7.5	3.8	16.3	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	10.1	5.9	12.4	7.1	7.2	10.8	17.0	14.6	4.6	15.8	15.8
LnGrp Delay(d),s/veh	58.8	49.2	44.5	60.5	32.5	32.8	64.6	41.9	44.0	59.7	60.6	61.1
LnGrp LOS	E	D	D	E	C	C	E	D	D	E	E	E
Approach Vol, veh/h		1039			1191			1741			954	
Approach Delay, s/veh		50.7			48.2			46.1			60.7	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	47.7	31.1	31.0	26.0	36.9	15.8	46.3
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	11.0	35.0	26.3	22.6	21.5	30.2	11.2	17.3
Green Ext Time (p_c), s	0.1	0.0	0.7	2.9	0.3	1.4	0.4	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	50.4
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	207

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	110	40	110	230	0	0	0	0	713	0	50
Future Vol, veh/h	0	110	40	110	230	0	0	0	0	713	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	116	42	116	242	0	0	0	0	751	0	53

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	116	0	0				590	590	242
Stage 1	-	-	-	-	-	-				474	474	-
Stage 2	-	-	-	-	-	-				116	116	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1473	-	0				~ 470	420	797
Stage 1	0	-	-	-	-	0				~ 626	558	-
Stage 2	0	-	-	-	-	0				909	800	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1473	-	-				~ 433	0	797
Mov Cap-2 Maneuver	-	-	-	-	-	-				~ 433	0	-
Stage 1	-	-	-	-	-	-				~ 577	0	-
Stage 2	-	-	-	-	-	-				909	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	$ 338.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1473	-	433	797
HCM Lane V/C Ratio	-	-	0.079	-	1.733	0.066
HCM Control Delay (s)	-	-	7.7	-	$ 361.9	9.8
HCM Lane LOS	-	-	A	-	F	A
HCM 95th %tile Q(veh)	-	-	0.3	-	45.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	803	0	0	190	477	150	0	70	0	0	0
Future Vol, veh/h	20	803	0	0	190	477	150	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	845	0	0	200	502	158	0	74	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	200	0	-	-	-	0	1087	1087	845
Stage 1	-	-	-	-	-	-	887	887	-
Stage 2	-	-	-	-	-	-	200	200	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1372	-	0	0	-	-	239	216	363
Stage 1	-	-	0	0	-	-	402	362	-
Stage 2	-	-	0	0	-	-	834	736	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1372	-	-	-	-	-	235	0	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	0	-
Stage 1	-	-	-	-	-	-	396	0	-
Stage 2	-	-	-	-	-	-	834	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	37.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	235	363	1372	-	-	-
HCM Lane V/C Ratio	0.672	0.203	0.015	-	-	-
HCM Control Delay (s)	46.9	17.4	7.7	-	-	-
HCM Lane LOS	E	C	A	-	-	-
HCM 95th %tile Q(veh)	4.3	0.7	0	-	-	-

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	434	0	0	260	266	10	10	230	0	0	0
Future Vol, veh/h	20	434	0	0	260	266	10	10	230	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	457	0	0	274	280	11	11	242	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	12.3	14.6	14.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	230	20	217	217	260	266
LT Vol	10	0	20	0	0	0	0
Through Vol	10	0	0	217	217	260	0
RT Vol	0	230	0	0	0	0	266
Lane Flow Rate	21	242	21	228	228	274	280
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.044	0.443	0.043	0.43	0.318	0.5	0.456
Departure Headway (Hd)	7.551	6.59	7.282	6.774	5.012	6.578	5.867
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	542	489	528	710	545	610
Service Time	5.346	4.384	5.066	4.558	2.794	4.36	3.648
HCM Lane V/C Ratio	0.045	0.446	0.043	0.432	0.321	0.503	0.459
HCM Control Delay	10.7	14.6	10.4	14.6	10.2	15.8	13.5
HCM Lane LOS	B	B	B	B	B	C	B
HCM 95th-tile Q	0.1	2.3	0.1	2.1	1.4	2.8	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	584	0	0	0	436	80	0	0	140	90
Future Volume (veh/h)	80	0	584	0	0	0	436	80	0	0	140	90
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	86	0	83				469	86	0	0	151	20
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	146	0	131				562	1232	0	0	404	343
Arrive On Green	0.08	0.00	0.08				0.32	0.66	0.00	0.00	0.22	0.22
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	86	0	83				469	86	0	0	151	20
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	1.5	0.0	1.6				7.7	0.5	0.0	0.0	2.2	0.3
Cycle Q Clear(g_c), s	1.5	0.0	1.6				7.7	0.5	0.0	0.0	2.2	0.3
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	146	0	131				562	1232	0	0	404	343
V/C Ratio(X)	0.59	0.00	0.64				0.84	0.07	0.00	0.00	0.37	0.06
Avail Cap(c_a), veh/h	1363	0	1217				1148	3597	0	0	3597	3057
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	13.9				9.9	1.9	0.0	0.0	10.4	9.7
Incr Delay (d2), s/veh	1.4	0.0	1.9				1.3	0.1	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.4				3.8	0.3	0.0	0.0	1.2	0.1
LnGrp Delay(d),s/veh	15.2	0.0	15.8				11.2	2.0	0.0	0.0	11.1	9.8
LnGrp LOS	B		B				B	A			B	A
Approach Vol, veh/h		169						555			171	
Approach Delay, s/veh		15.5						9.8			10.9	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.7		6.6	13.9	10.8		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.5		3.6	9.7	4.2		
Green Ext Time (p_c), s		2.3		0.1	0.2	2.3		

Intersection Summary			
HCM 2010 Ctrl Delay			11.1
HCM 2010 LOS			B

Notes

Intersection	
Intersection Delay, s/veh	122.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	320	20	0	10	30	10	10	37	10	10	30	873
Future Vol, veh/h	320	20	0	10	30	10	10	37	10	10	30	873
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	348	22	0	11	33	11	11	40	11	11	33	949
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	21.7			11.4			10.7			172.8		
HCM LOS	C			B			B			F		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	94%	20%	1%
Vol Thru, %	65%	6%	60%	3%
Vol Right, %	18%	0%	20%	96%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	340	50	913
LT Vol	10	320	10	10
Through Vol	37	20	30	30
RT Vol	10	0	10	873
Lane Flow Rate	62	370	54	992
Geometry Grp	1	1	1	1
Degree of Util (X)	0.109	0.641	0.101	1.327
Departure Headway (Hd)	6.89	7.004	7.592	4.814
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	524	521	475	754
Service Time	4.89	5.004	5.592	2.897
HCM Lane V/C Ratio	0.118	0.71	0.114	1.316
HCM Control Delay	10.7	21.7	11.4	172.8
HCM Lane LOS	B	C	B	F
HCM 95th-tile Q	0.4	4.5	0.3	39.3

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	80	30	393	170	10	20	10	180	10	20	20
Future Vol, veh/h	10	80	30	393	170	10	20	10	180	10	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	87	33	427	185	11	22	11	196	11	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	120	0	0	1191	1175	105	1275	1186	190
Stage 1	-	-	-	-	-	-	125	125	-	1045	1045	-
Stage 2	-	-	-	-	-	-	1066	1050	-	230	141	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1377	-	-	1468	-	-	164	192	949	144	189	852
Stage 1	-	-	-	-	-	-	879	792	-	276	306	-
Stage 2	-	-	-	-	-	-	269	304	-	773	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1377	-	-	1466	-	-	104	128	947	79	126	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	128	-	79	126	-
Stage 1	-	-	-	-	-	-	871	785	-	274	206	-
Stage 2	-	-	-	-	-	-	158	205	-	598	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	5.8	20.5	38
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	456	1377	-	-	1466	-	-	162
HCM Lane V/C Ratio	0.501	0.008	-	-	0.291	-	-	0.335
HCM Control Delay (s)	20.5	7.6	0	-	8.5	0	-	38
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.7	0	-	-	1.2	-	-	1.4

Intersection						
Int Delay, s/veh	5.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	230	250	37	150	603
Future Vol, veh/h	30	230	250	37	150	603
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	250	272	40	163	655

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1274	292	0	0	312	0
Stage 1	292	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	184	747	-	-	1248	-
Stage 1	758	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	747	-	-	1248	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	289	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.7	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	506	1248	-
HCM Lane V/C Ratio	-	-	0.559	0.131	-
HCM Control Delay (s)	-	-	20.7	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.4	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	401	830	170	121	226	220	110	290	414	180	80
Future Volume (veh/h)	190	401	830	170	121	226	220	110	290	414	180	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	192	405	611	172	122	107	222	111	34	418	182	14
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1597	713	297	1543	687	348	356	105	534	656	293
Arrive On Green	0.09	0.45	0.45	0.09	0.44	0.44	0.10	0.13	0.12	0.16	0.19	0.19
Sat Flow, veh/h	3442	3539	1581	3442	3539	1576	3442	2688	791	3442	3539	1583
Grp Volume(v), veh/h	192	405	611	172	122	107	222	72	73	418	182	14
Grp Sat Flow(s),veh/h/ln	1721	1770	1581	1721	1770	1576	1721	1770	1709	1721	1770	1583
Q Serve(g_s), s	4.9	6.5	31.6	4.4	1.8	3.8	5.7	3.3	3.6	10.7	4.0	0.7
Cycle Q Clear(g_c), s	4.9	6.5	31.6	4.4	1.8	3.8	5.7	3.3	3.6	10.7	4.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	318	1597	713	297	1543	687	348	234	226	534	656	293
V/C Ratio(X)	0.60	0.25	0.86	0.58	0.08	0.16	0.64	0.31	0.32	0.78	0.28	0.05
Avail Cap(c_a), veh/h	603	2015	900	603	2015	897	716	911	880	716	1822	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	15.5	22.4	40.1	15.0	15.6	39.4	35.8	36.1	37.1	32.0	30.6
Incr Delay (d2), s/veh	0.7	0.1	7.1	0.7	0.0	0.1	0.7	1.2	1.3	2.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.2	15.0	2.1	0.9	1.6	2.7	1.7	1.8	5.3	2.0	0.3
LnGrp Delay(d),s/veh	40.5	15.6	29.5	40.8	15.1	15.6	40.2	37.0	37.4	39.9	32.3	30.7
LnGrp LOS	D	B	C	D	B	B	D	D	D	D	C	C
Approach Vol, veh/h		1208			401			367			614	
Approach Delay, s/veh		26.6			26.3			39.0			37.4	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	45.2	13.2	21.0	12.4	44.6	18.2	16.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46
Max Q Clear Time (g_c+I1), s	6.4	33.6	7.7	6.0	6.9	5.8	12.7	5.6
Green Ext Time (p_c), s	0.1	6.3	0.1	3.4	0.1	8.1	0.2	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1105	230	40	487	295	70	30	30	286	10	10
Future Volume (veh/h)	200	1105	230	40	487	295	70	30	30	286	10	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	215	1188	178	43	524	243	75	32	10	308	11	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1804	805	44	934	432	445	178	499	442	13	12
Arrive On Green	0.14	0.51	0.51	0.02	0.40	0.39	0.32	0.32	0.32	0.32	0.32	0.31
Sat Flow, veh/h	1774	3539	1579	1774	2350	1086	1175	561	1574	1111	40	36
Grp Volume(v), veh/h	215	1188	178	43	394	373	107	0	10	329	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1579	1774	1770	1666	1736	0	1574	1187	0	0
Q Serve(g_s), s	10.0	20.8	5.2	2.0	14.5	14.7	0.0	0.0	0.4	19.1	0.0	0.0
Cycle Q Clear(g_c), s	10.0	20.8	5.2	2.0	14.5	14.7	3.6	0.0	0.4	22.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.65	0.70		1.00	0.94		0.03
Lane Grp Cap(c), veh/h	242	1804	805	44	704	663	623	0	499	466	0	0
V/C Ratio(X)	0.89	0.66	0.22	0.99	0.56	0.56	0.17	0.00	0.02	0.71	0.00	0.00
Avail Cap(c_a), veh/h	422	1804	805	422	885	833	968	0	862	774	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.6	15.2	11.4	41.0	19.6	19.8	20.8	0.0	19.7	28.7	0.0	0.0
Incr Delay (d2), s/veh	5.1	1.0	0.2	35.7	0.9	0.9	0.0	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	10.3	2.3	1.4	7.2	6.9	1.8	0.0	0.2	7.3	0.0	0.0
LnGrp Delay(d),s/veh	40.8	16.2	11.6	76.7	20.5	20.8	20.9	0.0	19.7	29.4	0.0	0.0
LnGrp LOS	D	B	B	E	C	C	C		B	C		
Approach Vol, veh/h		1581			810			117			329	
Approach Delay, s/veh		19.0			23.6			20.8			29.4	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	46.8		31.1	15.5	37.4		31.1
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46
Max Q Clear Time (g_c+I1), s	14.0	22.8		24.8	12.0	16.7		5.6
Green Ext Time (p_c), s	0.0	14.2		1.0	0.1	16.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	10	10	190	10	40	10	230	280	100	380	0
Future Vol, veh/h	20	10	10	190	10	40	10	230	280	100	380	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	11	11	207	11	43	11	250	304	109	413	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	11.8	15.4	14.5	15.4
HCM LOS	B	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	50%	100%	0%	44%	0%
Vol Thru, %	96%	0%	25%	0%	20%	56%	100%
Vol Right, %	0%	100%	25%	0%	80%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	280	40	190	50	227	253
LT Vol	10	0	20	190	0	100	0
Through Vol	230	0	10	0	10	127	253
RT Vol	0	280	10	0	40	0	0
Lane Flow Rate	261	304	43	207	54	246	275
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.471	0.488	0.096	0.447	0.101	0.459	0.496
Departure Headway (Hd)	6.504	5.77	7.969	7.796	6.714	6.711	6.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	621	453	461	530	535	551
Service Time	4.288	3.553	5.969	5.583	4.5	4.495	4.27
HCM Lane V/C Ratio	0.475	0.49	0.095	0.449	0.102	0.46	0.499
HCM Control Delay	15	14	11.8	16.8	10.3	15.1	15.6
HCM Lane LOS	B	B	B	C	B	C	C
HCM 95th-tile Q	2.5	2.7	0.3	2.3	0.3	2.4	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	321	410	0	242	0	320	390	0	0	460	250
Future Volume (veh/h)	270	321	410	0	242	0	320	390	0	0	460	250
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	349	155	0	263	0	348	424	0	0	500	138
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	1199	523	2	454	203	379	2059	921	2	616	511
Arrive On Green	0.18	0.34	0.34	0.00	0.13	0.00	0.21	0.58	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1774	3539	1545	1774	3539	1583	1774	3539	1583	1774	1863	1545
Grp Volume(v), veh/h	293	349	155	0	263	0	348	424	0	0	500	138
Grp Sat Flow(s),veh/h/ln	1774	1770	1545	1774	1770	1583	1774	1770	1583	1774	1863	1545
Q Serve(g_s), s	17.4	7.7	7.9	0.0	7.5	0.0	20.5	6.1	0.0	0.0	26.3	7.0
Cycle Q Clear(g_c), s	17.4	7.7	7.9	0.0	7.5	0.0	20.5	6.1	0.0	0.0	26.3	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	1199	523	2	454	203	379	2059	921	2	616	511
V/C Ratio(X)	0.93	0.29	0.30	0.00	0.58	0.00	0.92	0.21	0.00	0.00	0.81	0.27
Avail Cap(c_a), veh/h	514	1356	592	265	860	385	597	2349	1051	99	714	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	26.0	26.0	0.0	43.9	0.0	41.1	10.6	0.0	0.0	32.7	26.3
Incr Delay (d2), s/veh	11.5	0.0	0.1	0.0	1.2	0.0	9.8	0.2	0.0	0.0	6.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	3.8	3.4	0.0	3.7	0.0	11.1	3.0	0.0	0.0	14.6	3.0
LnGrp Delay(d),s/veh	54.9	26.0	26.1	0.0	45.1	0.0	50.9	10.8	0.0	0.0	39.1	26.6
LnGrp LOS	D	C	C		D		D	B			D	C
Approach Vol, veh/h		797			263			772			638	
Approach Delay, s/veh		36.6			45.1			28.9			36.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	66.2	0.0	40.7	26.9	39.4	23.0	17.7
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	31.5	26.0
Max Q Clear Time (g_c+I1), s	0.0	8.1	0.0	9.9	22.5	28.3	19.4	9.5
Green Ext Time (p_c), s	0.0	13.4	0.0	2.4	0.1	6.8	0.1	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	15.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	310	120	220	580	90
Future Vol, veh/h	90	310	120	220	580	90
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	337	130	239	630	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1020	640	630	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	247	474	950	-	-	0
Stage 1	530	-	-	-	-	0
Stage 2	654	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	213	470	942	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.5	3.3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	942	-	488	-
HCM Lane V/C Ratio	0.138	-	0.891	-
HCM Control Delay (s)	9.4	-	47.5	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	0.5	-	9.9	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	248	233	137	200	20	133	360	129	10	320	10
Future Vol, veh/h	10	248	233	137	200	20	133	360	129	10	320	10
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	270	253	149	217	22	145	391	140	11	348	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	988	1216	199	1101	1151	286	369	0	0	542	0	0
Stage 1	385	385	-	761	761	-	-	-	-	-	-	-
Stage 2	603	831	-	340	390	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	201	~ 180	809	166	~ 197	711	1186	-	-	1023	-	-
Stage 1	610	609	-	364	412	-	-	-	-	-	-	-
Stage 2	453	383	-	648	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 143	796	-	~ 157	699	1176	-	-	1014	-	-
Mov Cap-2 Maneuver	-	~ 143	-	-	~ 157	-	-	-	-	-	-	-
Stage 1	497	595	-	296	335	-	-	-	-	-	-	-
Stage 2	125	312	-	236	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2	0.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1176	-	-	-	308	-	180	1014	-	-
HCM Lane V/C Ratio	0.123	-	-	-	1.26	-	0.725	0.011	-	-
HCM Control Delay (s)	8.5	0.4	-	-	175.4	-	64.8	8.6	0.1	-
HCM Lane LOS	A	A	-	-	F	-	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	-	18.1	-	4.6	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	170	0	0	0	180	640	0	0	780	30
Future Vol, veh/h	10	0	170	0	0	0	180	640	0	0	780	30
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	92	94	92	92	92	94	94	92	92	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	181	0	0	0	191	681	0	0	830	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1589	1920	451	1489	1936	350	872	0	-	-	-	0
Stage 1	856	856	-	1064	1064	-	-	-	-	-	-	-
Stage 2	733	1064	-	425	872	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	72	66	556	86	65	646	769	-	0	0	-	-
Stage 1	319	373	-	238	298	-	-	-	0	0	-	-
Stage 2	378	298	-	578	366	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	49	39	547	39	38	641	763	-	-	-	-	-
Mov Cap-2 Maneuver	49	39	-	39	38	-	-	-	-	-	-	-
Stage 1	189	370	-	142	178	-	-	-	-	-	-	-
Stage 2	224	178	-	384	363	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	0	3.6	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	763	-	350	-	-	-
HCM Lane V/C Ratio	0.251	-	0.547	-	-	-
HCM Control Delay (s)	11.3	1.5	27	0	-	-
HCM Lane LOS	B	A	D	A	-	-
HCM 95th %tile Q(veh)	1	-	3.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	840	230	0	728	785	0	0	0	696	10	210
Future Volume (veh/h)	0	840	230	0	728	785	0	0	0	696	10	210
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	866	0	0	751	0				725	0	84
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2348	0	0	1634	731				1167	0	521
Arrive On Green	0.00	0.48	0.00	0.00	0.48	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	866	0	0	751	0				725	0	84
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	4.6	0.0	0.0	6.0	0.0				7.0	0.0	1.5
Cycle Q Clear(g_c), s	0.0	4.6	0.0	0.0	6.0	0.0				7.0	0.0	1.5
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2348	0	0	1634	731				1167	0	521
V/C Ratio(X)	0.00	0.37	0.00	0.00	0.46	0.00				0.62	0.00	0.16
Avail Cap(c_a), veh/h	0	7376	0	0	5133	2296				2692	0	1201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	7.2	0.0				11.6	0.0	9.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	0.0	0.0	2.8	0.0				3.5	0.0	0.7
LnGrp Delay(d),s/veh	0.0	6.9	0.0	0.0	7.3	0.0				11.8	0.0	9.8
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		866			751						809	
Approach Delay, s/veh		6.9			7.3						11.6	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		23.4		17.4		23.4		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		6.6		9.0		8.0		
Green Ext Time (p_c), s		8.6		1.6		8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1336	190	0	1383	584	130	0	1276	0	0	0
Future Volume (vph)	10	1336	190	0	1383	584	130	0	1276	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4847			4720			1770	2787			
Flt Permitted		0.91			1.00			0.95	1.00			
Satd. Flow (perm)		4406			4720			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1377	196	0	1426	602	134	0	1315	0	0	0
RTOR Reduction (vph)	0	17	0	0	72	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	1566	0	0	1956	0	0	134	1296	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		41.8			81.5			11.0	50.7			
Effective Green, g (s)		44.6			84.3			13.8	53.5			
Actuated g/C Ratio		0.42			0.79			0.13	0.50			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1852			3750			230	1405			
v/s Ratio Prot					0.41			0.08	c0.47			
v/s Ratio Perm		c0.36										
v/c Ratio		0.85			0.52			0.58	0.92			
Uniform Delay, d1		27.7			3.8			43.4	24.4			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		3.6			0.1			2.4	10.1			
Delay (s)		31.3			3.9			45.9	34.5			
Level of Service		C			A			D	C			
Approach Delay (s)		31.3			3.9			35.6			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1422	500	70	948	450	690	520	120	380	720	330
Future Volume (veh/h)	690	1422	500	70	948	450	690	520	120	380	720	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	711	1466	259	72	977	398	711	536	0	392	742	229
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	514	1349	602	93	1021	416	966	817	365	580	980	427
Arrive On Green	0.15	0.39	0.39	0.05	0.30	0.28	0.28	0.23	0.00	0.33	0.28	0.28
Sat Flow, veh/h	3343	3438	1535	1723	3447	1403	3442	3539	1583	1774	3539	1543
Grp Volume(v), veh/h	711	1466	259	72	934	441	711	536	0	392	742	229
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1557	1721	1770	1583	1774	1770	1543
Q Serve(g_s), s	20.0	51.0	16.0	5.4	36.2	36.3	24.3	17.8	0.0	24.8	24.9	13.9
Cycle Q Clear(g_c), s	20.0	51.0	16.0	5.4	36.2	36.3	24.3	17.8	0.0	24.8	24.9	13.9
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	514	1349	602	93	975	461	966	817	365	580	980	427
V/C Ratio(X)	1.38	1.09	0.43	0.78	0.96	0.96	0.74	0.66	0.00	0.68	0.76	0.54
Avail Cap(c_a), veh/h	514	1349	602	93	975	461	966	817	365	580	980	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.5	28.9	60.7	44.9	45.6	42.4	45.3	0.0	37.8	43.0	28.9
Incr Delay (d2), s/veh	176.3	44.3	0.2	32.9	19.2	31.2	3.0	4.1	0.0	3.1	5.5	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.8	32.5	6.8	3.4	19.1	19.6	12.0	9.2	0.0	12.7	12.9	6.5
LnGrp Delay(d),s/veh	231.3	83.8	29.0	93.6	64.2	76.8	45.3	49.4	0.0	40.9	48.5	33.7
LnGrp LOS	F	F	C	F	E	E	D	D		D	D	C
Approach Vol, veh/h		2436			1447			1247			1363	
Approach Delay, s/veh		121.0			69.5			47.1			43.8	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.0	34.0	11.5	55.0	41.0	40.0	24.0	42.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	25.0	28.5	6.0	* 50	19.0	34.5	19.0	36.5
Max Q Clear Time (g_c+I1), s	26.8	19.8	7.4	53.0	26.3	26.9	22.0	38.3
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	90	140	592	100	70	140	870	379	100	1250	20
Future Volume (veh/h)	50	90	140	592	100	70	140	870	379	100	1250	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	97	20	714	0	0	151	935	0	108	1344	21
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	157	206	845	0	377	196	1441	645	150	1966	31
Arrive On Green	0.13	0.13	0.13	0.24	0.00	0.00	0.11	0.41	0.00	0.08	0.38	0.37
Sat Flow, veh/h	654	1176	1541	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	151	0	20	714	0	0	151	935	0	108	884	481
Grp Sat Flow(s),veh/h/ln	1830	0	1541	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	9.1	0.0	1.3	22.5	0.0	0.0	9.7	24.9	0.0	6.9	25.5	25.5
Cycle Q Clear(g_c), s	9.1	0.0	1.3	22.5	0.0	0.0	9.7	24.9	0.0	6.9	25.5	25.5
Prop In Lane	0.36		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	244	0	206	845	0	377	196	1441	645	150	1292	704
V/C Ratio(X)	0.62	0.00	0.10	0.85	0.00	0.00	0.77	0.65	0.00	0.72	0.68	0.68
Avail Cap(c_a), veh/h	485	0	408	1243	0	555	470	1441	645	470	1347	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	0.0	44.5	42.5	0.0	0.0	50.6	28.0	0.0	52.2	30.3	30.3
Incr Delay (d2), s/veh	2.5	0.0	0.2	3.7	0.0	0.0	6.2	1.4	0.0	6.3	1.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.6	11.4	0.0	0.0	5.1	12.4	0.0	3.7	12.2	13.6
LnGrp Delay(d),s/veh	50.4	0.0	44.7	46.2	0.0	0.0	56.8	29.4	0.0	58.5	32.2	33.7
LnGrp LOS	D		D	D			E	C		E	C	C
Approach Vol, veh/h		171			714			1086			1473	
Approach Delay, s/veh		49.8			46.2			33.2			34.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	51.6		31.9	16.9	48.6		19.6
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	8.9	26.9		24.5	11.7	27.5		11.1
Green Ext Time (p_c), s	0.2	16.9		2.4	0.3	15.6		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		37.3
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1072	110	212	638	220	210	460	179	390	450	210
Future Volume (veh/h)	230	1072	110	212	638	220	210	460	179	390	450	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	245	1140	111	226	679	102	223	489	45	415	479	71
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	998	1944	189	283	1984	604	270	847	368	416	977	426
Arrive On Green	0.30	0.62	0.59	0.08	0.40	0.40	0.08	0.24	0.24	0.12	0.28	0.28
Sat Flow, veh/h	3343	3159	307	3343	4940	1504	3442	3539	1538	3442	3539	1541
Grp Volume(v), veh/h	245	620	631	226	679	102	223	489	45	415	479	71
Grp Sat Flow(s),veh/h/ln	1672	1719	1747	1672	1647	1504	1721	1770	1538	1721	1770	1541
Q Serve(g_s), s	7.2	28.2	28.5	8.6	12.4	5.7	8.3	15.9	3.0	15.7	14.7	4.5
Cycle Q Clear(g_c), s	7.2	28.2	28.5	8.6	12.4	5.7	8.3	15.9	3.0	15.7	14.7	4.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	998	1058	1075	283	1984	604	270	847	368	416	977	426
V/C Ratio(X)	0.25	0.59	0.59	0.80	0.34	0.17	0.83	0.58	0.12	1.00	0.49	0.17
Avail Cap(c_a), veh/h	998	1058	1075	283	1984	604	270	847	368	416	977	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	15.0	15.2	58.4	27.0	25.0	59.0	43.7	39.2	57.1	39.4	35.7
Incr Delay (d2), s/veh	0.0	2.4	2.4	13.8	0.5	0.6	17.5	2.9	0.7	43.7	1.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	14.0	14.4	4.5	5.7	2.4	4.6	8.1	1.3	10.0	7.4	2.0
LnGrp Delay(d),s/veh	34.6	17.4	17.6	72.2	27.5	25.6	76.6	46.5	39.9	100.8	41.1	36.5
LnGrp LOS	C	B	B	E	C	C	E	D	D	F	D	D
Approach Vol, veh/h		1496			1007			757			965	
Approach Delay, s/veh		20.3			37.3			55.0			66.5	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	56.2	19.7	35.1	15.0	84.7	14.9	39.9
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.8	* 6.8
Max Green Setting (Gmax), s	12.9	50.1	12.2	29.0	8.9	54.1	8.1	* 33
Max Q Clear Time (g_c+I1), s	19.2	14.4	17.7	17.9	10.6	30.5	10.3	16.7
Green Ext Time (p_c), s	1.3	1.6	0.0	0.9	0.0	2.6	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.1
HCM 2010 LOS	D

Notes

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	207	0.0	0.249	8.1	LOS A	1.3	33.5	0.73	0.72	28.6
8	T1	11	0.0	0.249	6.8	LOS A	1.3	33.5	0.73	0.70	24.0
18	R2	162	0.0	0.249	6.8	LOS A	1.3	33.5	0.73	0.70	35.3
Approach		379	0.0	0.249	7.5	LOS A	1.3	33.5	0.73	0.71	31.9
East: WB Boronda Rd											
1	L2	212	0.0	0.465	7.5	LOS A	3.1	76.9	0.49	0.34	29.4
6	T1	1109	0.4	0.465	6.9	LOS A	3.2	80.3	0.47	0.31	32.9
16	R2	11	0.0	0.006	2.1	LOS A	0.0	0.7	0.08	0.01	34.3
Approach		1332	0.3	0.465	7.0	LOS A	3.2	80.3	0.47	0.31	32.4
North: SB McKinnon St											
7	L2	11	0.0	0.015	5.3	LOS A	0.1	1.7	0.68	0.55	33.3
4	T1	11	0.0	0.015	3.5	LOS A	0.1	1.9	0.69	0.50	31.6
14	R2	22	0.0	0.015	3.4	LOS A	0.1	1.9	0.66	0.48	32.9
Approach		43	0.0	0.015	3.9	LOS A	0.1	1.9	0.67	0.50	32.8
West: EB Boronda Rd											
5	L2	11	0.0	0.455	7.4	LOS A	2.7	66.4	0.42	0.29	32.5
2	T1	1295	0.0	0.455	6.9	LOS A	2.8	68.8	0.40	0.27	34.6
12	R2	467	0.0	0.297	4.7	LOS A	1.6	40.3	0.34	0.21	29.3
Approach		1773	0.0	0.455	6.3	LOS A	2.8	68.8	0.39	0.25	33.8
All Vehicles		3527	0.1	0.465	6.7	LOS A	3.2	80.3	0.46	0.33	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	196	0.0	0.176	4.8	LOS A	1.0	24.1	0.69	0.62	35.0
8	T1	1	0.0	0.001	4.2	LOS A	0.0	0.1	0.65	0.38	36.1
18	R2	238	0.0	0.214	5.2	LOS A	1.2	29.7	0.70	0.64	35.8
Approach		435	0.0	0.214	5.0	LOS A	1.2	29.7	0.70	0.63	35.4
East: WB Baronda Rd											
1	L2	179	0.0	0.543	9.3	LOS A	4.1	102.7	0.53	0.36	34.6
6	T1	1168	0.3	0.543	8.9	LOS A	4.2	104.8	0.53	0.35	35.7
16	R2	1	0.0	0.543	8.7	LOS A	4.2	104.8	0.52	0.35	34.1
Approach		1349	0.3	0.543	9.0	LOS A	4.2	104.8	0.53	0.35	35.6
North: SB El Dorado Dr (Future)											
7	L2	1	0.0	0.002	5.8	LOS A	0.0	0.2	0.71	0.46	34.0
4	T1	1	0.0	0.001	3.6	LOS A	0.0	0.1	0.73	0.41	35.9
14	R2	1	0.0	0.001	3.3	LOS A	0.0	0.1	0.66	0.36	36.4
Approach		3	0.0	0.002	4.2	LOS A	0.0	0.2	0.70	0.41	35.4
West: EB Boronda Rd											
5u	U	1	0.0	0.579	9.8	LOS A	4.5	113.3	0.52	0.35	36.4
5	L2	1	0.0	0.579	9.8	LOS A	4.5	113.3	0.52	0.35	34.8
2	T1	1174	0.4	0.579	9.6	LOS A	4.6	115.0	0.52	0.34	35.7
12	R2	293	0.0	0.579	9.3	LOS A	4.6	115.0	0.51	0.33	34.5
Approach		1470	0.3	0.579	9.6	LOS A	4.6	115.0	0.52	0.34	35.5
All Vehicles		3257	0.3	0.579	8.7	LOS A	4.6	115.0	0.54	0.38	35.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	130	0.0	0.218	8.8	LOS A	0.8	19.1	0.70	0.70	33.7
8	T1	348	0.0	0.249	8.1	LOS A	1.0	26.1	0.70	0.70	33.7
18	R2	600	0.0	0.358	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		1078	0.0	0.358	3.7	LOS A	1.0	26.1	0.31	0.31	36.6
East: WB Boronda Rd											
1	L2	255	0.0	0.407	7.8	LOS A	1.9	47.7	0.53	0.50	33.1
6	T1	1107	0.2	0.407	7.4	LOS A	1.9	47.9	0.52	0.48	38.7
16	R2	224	0.0	0.173	4.2	LOS A	0.7	17.5	0.40	0.30	37.8
Approach		1586	0.1	0.407	7.0	LOS A	1.9	47.9	0.51	0.46	37.9
North: SB Natividad Rd											
7	L2	407	0.3	0.498	12.4	LOS B	2.8	69.8	0.72	0.83	32.6
4	T1	789	0.0	0.498	10.9	LOS B	3.1	78.7	0.73	0.83	31.8
14	R2	122	7.5	0.127	4.9	LOS A	0.5	12.8	0.57	0.55	38.3
Approach		1317	0.8	0.498	10.8	LOS B	3.1	78.7	0.71	0.80	32.9
West: EB Boronda Rd											
5u	U	1	0.0	0.582	15.5	LOS C	3.8	96.2	0.78	0.93	35.3
5	L2	121	0.0	0.582	15.5	LOS C	3.8	96.2	0.78	0.93	34.4
2	T1	1183	0.0	0.582	14.1	LOS B	4.4	109.8	0.79	0.93	35.9
12	R2	130	0.0	0.126	4.6	LOS A	0.5	13.4	0.58	0.52	37.4
Approach		1435	0.0	0.582	13.4	LOS B	4.4	109.8	0.77	0.89	35.9
All Vehicles		5416	0.2	0.582	8.9	LOS A	4.4	109.8	0.59	0.63	36.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_CU + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	409	0.0	0.357	11.5	LOS B	2.1	51.3	0.84	0.87	29.7
8	T1	133	0.0	0.250	6.6	LOS A	1.7	41.7	0.86	0.81	33.6
18	R2	93	0.0	0.250	6.6	LOS A	1.7	41.7	0.86	0.81	33.2
Approach		635	0.0	0.357	9.8	LOS A	2.1	51.3	0.85	0.85	30.8
East: WB Boronda Rd											
1	L2	22	0.0	0.530	10.3	LOS B	3.7	92.4	0.62	0.73	32.6
6	T1	1132	0.2	0.530	9.6	LOS A	3.8	95.5	0.61	0.70	34.2
16	R2	225	0.0	0.164	4.0	LOS A	0.7	18.0	0.33	0.20	35.4
Approach		1378	0.2	0.530	8.7	LOS A	3.8	95.5	0.57	0.62	34.3
North: SB Independence Blvd (Future)											
7	L2	118	0.0	0.313	7.9	LOS A	1.5	38.1	0.73	0.73	33.5
4	T1	140	0.0	0.313	7.9	LOS A	1.5	38.1	0.73	0.73	31.6
14	R2	107	0.0	0.128	5.6	LOS A	0.6	14.5	0.68	0.66	34.4
Approach		365	0.0	0.313	7.2	LOS A	1.5	38.1	0.72	0.71	33.1
West: EB Boronda Rd											
5u	U	1	0.0	0.623	11.4	LOS B	6.3	157.4	0.66	0.53	33.7
5	L2	124	0.0	0.623	11.4	LOS B	6.3	157.4	0.66	0.53	32.5
2	T1	1438	0.1	0.623	10.6	LOS B	6.3	157.4	0.64	0.48	33.6
12	R2	537	0.0	0.321	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		2100	0.1	0.623	7.9	LOS A	6.3	157.4	0.48	0.36	34.2
All Vehicles		4478	0.1	0.623	8.4	LOS A	6.3	157.4	0.58	0.54	33.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	1114	187	50	1126	164	103	23	20	108	17	79
Future Volume (veh/h)	207	1114	187	50	1126	164	103	23	20	108	17	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1816	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	216	1160	187	52	1173	164	107	24	16	112	18	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	191	1917	308	53	1733	241	163	37	24	123	92	31
Arrive On Green	0.14	0.86	0.86	0.03	0.57	0.57	0.13	0.13	0.13	0.07	0.07	0.07
Sat Flow, veh/h	1774	2953	474	1723	3028	422	1277	287	191	1774	1327	442
Grp Volume(v), veh/h	216	673	674	52	666	671	147	0	0	112	0	24
Grp Sat Flow(s),veh/h/ln	1774	1719	1708	1723	1725	1725	1755	0	0	1774	0	1770
Q Serve(g_s), s	14.0	14.5	14.8	3.9	35.0	35.4	10.4	0.0	0.0	8.2	0.0	1.7
Cycle Q Clear(g_c), s	14.0	14.5	14.8	3.9	35.0	35.4	10.4	0.0	0.0	8.2	0.0	1.7
Prop In Lane	1.00		0.28	1.00		0.24	0.73		0.11	1.00		0.25
Lane Grp Cap(c), veh/h	191	1116	1108	53	987	987	224	0	0	123	0	123
V/C Ratio(X)	1.13	0.60	0.61	0.98	0.67	0.68	0.66	0.00	0.00	0.91	0.00	0.20
Avail Cap(c_a), veh/h	191	1116	1108	53	987	987	459	0	0	123	0	123
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.7	4.1	4.1	63.0	19.4	19.5	54.0	0.0	0.0	60.1	0.0	57.1
Incr Delay (d2), s/veh	97.1	1.9	1.9	116.2	3.7	3.8	3.2	0.0	0.0	54.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	7.2	7.2	3.6	17.7	17.8	5.2	0.0	0.0	5.9	0.0	0.8
LnGrp Delay(d),s/veh	152.8	6.0	6.1	179.2	23.1	23.2	57.2	0.0	0.0	115.0	0.0	57.9
LnGrp LOS	F	A	A	F	C	C	E			F		E
Approach Vol, veh/h		1563			1389			147			136	
Approach Delay, s/veh		26.3			29.0			57.2			104.9	
Approach LOS		C			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	88.4		13.0	18.0	78.4		20.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	67.0		9.0	14.0	57.0		34.0
Max Q Clear Time (g_c+I1), s	5.9	16.8		10.2	16.0	37.4		12.4
Green Ext Time (p_c), s	0.0	31.4		0.0	0.0	15.8		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		32.2
HCM 2010 LOS		C

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	14	5	364	291	23
Future Vol, veh/h	27	14	5	364	291	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	15	5	396	316	25
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.4	13.3	12.1
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	93%
Vol Right, %	0%	0%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	364	27	14	314
LT Vol	5	0	27	0	0
Through Vol	0	364	0	0	291
RT Vol	0	0	0	14	23
Lane Flow Rate	5	396	29	15	341
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.008	0.542	0.055	0.024	0.463
Departure Headway (Hd)	5.438	4.935	6.776	5.561	4.882
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	659	732	527	641	737
Service Time	3.166	2.663	4.537	3.32	2.911
HCM Lane V/C Ratio	0.008	0.541	0.055	0.023	0.463
HCM Control Delay	8.2	13.4	9.9	8.5	12.1
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0	3.3	0.2	0.1	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	210	60	220	190	230	120	1220	250	180	1350	200
Future Volume (veh/h)	190	210	60	220	190	230	120	1220	250	180	1350	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	200	221	9	232	200	88	126	1284	245	189	1421	136
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	567	245	261	313	261	395	2145	409	231	1756	537
Arrive On Green	0.14	0.16	0.16	0.15	0.17	0.17	0.22	0.50	0.48	0.07	0.35	0.35
Sat Flow, veh/h	1774	3539	1527	1774	1863	1555	1774	4284	817	3442	5085	1554
Grp Volume(v), veh/h	200	221	9	232	200	88	126	1016	513	189	1421	136
Grp Sat Flow(s),veh/h/ln	1774	1770	1527	1774	1863	1555	1774	1695	1711	1721	1695	1554
Q Serve(g_s), s	14.0	7.2	0.4	16.4	12.8	6.4	7.6	27.3	27.6	6.9	32.5	5.2
Cycle Q Clear(g_c), s	14.0	7.2	0.4	16.4	12.8	6.4	7.6	27.3	27.6	6.9	32.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	247	567	245	261	313	261	395	1698	857	231	1756	537
V/C Ratio(X)	0.81	0.39	0.04	0.89	0.64	0.34	0.32	0.60	0.60	0.82	0.81	0.25
Avail Cap(c_a), veh/h	247	1081	466	261	584	487	395	1698	857	231	1756	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	48.1	17.5	53.6	49.6	47.0	41.6	22.8	23.2	58.9	38.1	12.4
Incr Delay (d2), s/veh	17.0	0.2	0.0	28.4	0.8	0.3	0.2	1.6	3.1	18.8	4.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	3.5	0.2	10.1	6.7	2.8	3.8	13.1	13.8	3.9	15.8	2.4
LnGrp Delay(d),s/veh	70.4	48.3	17.6	82.0	50.4	47.2	41.8	24.3	26.3	77.7	42.2	13.5
LnGrp LOS	E	D	B	F	D	D	D	C	C	E	D	B
Approach Vol, veh/h		430			520			1655			1746	
Approach Delay, s/veh		58.0			64.0			26.3			43.8	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	68.1	22.8	24.5	32.5	48.2	21.8	25.5
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	6.5	43.4	16.7	37.0	7.8	42.1	15.7	38.0
Max Q Clear Time (g_c+I1), s	8.9	29.6	18.4	9.2	9.6	34.5	16.0	14.8
Green Ext Time (p_c), s	0.0	3.8	0.0	0.9	0.0	2.9	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	0	320	0	0	0	410	1136	0	0	951	150
Future Volume (veh/h)	306	0	320	0	0	0	410	1136	0	0	951	150
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	329	0	60				441	1222	0	0	1023	139
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	477	0	219				500	3860	0	2	1929	262
Arrive On Green	0.14	0.00	0.14				0.28	0.76	0.00	0.00	0.43	0.41
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4528	614
Grp Volume(v), veh/h	329	0	60				441	1222	0	0	765	397
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1752
Q Serve(g_s), s	7.1	0.0	2.7				18.6	6.0	0.0	0.0	13.1	13.2
Cycle Q Clear(g_c), s	7.1	0.0	2.7				18.6	6.0	0.0	0.0	13.1	13.2
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.35
Lane Grp Cap(c), veh/h	477	0	219				500	3860	0	2	1444	746
V/C Ratio(X)	0.69	0.00	0.27				0.88	0.32	0.00	0.00	0.53	0.53
Avail Cap(c_a), veh/h	1146	0	527				591	3906	0	136	1736	897
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	30.1				26.8	3.0	0.0	0.0	16.6	16.9
Incr Delay (d2), s/veh	1.8	0.0	0.7				15.2	0.0	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	2.5				11.2	2.7	0.0	0.0	6.1	6.4
LnGrp Delay(d),s/veh	33.8	0.0	30.8				42.0	3.0	0.0	0.0	16.9	17.4
LnGrp LOS	C		C				D	A			B	B
Approach Vol, veh/h		389						1663			1162	
Approach Delay, s/veh		33.4						13.4			17.1	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	63.3		14.8	26.0	37.3		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	0.0	8.0		9.1	20.6	15.2		
Green Ext Time (p_c), s	0.0	26.8		1.2	1.5	16.6		

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	1351	230	20	960	80	190	130	30	80	130	285
Future Volume (veh/h)	392	1351	230	20	960	80	190	130	30	80	130	285
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	417	1437	236	21	1021	80	202	138	23	85	138	71
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	1665	269	88	1208	95	340	460	77	337	553	458
Arrive On Green	0.23	0.55	0.52	0.05	0.36	0.34	0.30	0.30	0.28	0.30	0.30	0.30
Sat Flow, veh/h	1774	3049	493	1774	3323	260	1147	1550	258	1197	1863	1542
Grp Volume(v), veh/h	417	825	848	21	544	557	202	0	161	85	138	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1814	1147	0	1809	1197	1863	1542
Q Serve(g_s), s	26.0	44.4	46.7	1.3	31.6	31.6	18.2	0.0	7.7	6.6	6.3	3.8
Cycle Q Clear(g_c), s	26.0	44.4	46.7	1.3	31.6	31.6	24.4	0.0	7.7	14.3	6.3	3.8
Prop In Lane	1.00		0.28	1.00		0.14	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	412	966	968	88	643	659	340	0	537	337	553	458
V/C Ratio(X)	1.01	0.85	0.88	0.24	0.85	0.85	0.59	0.00	0.30	0.25	0.25	0.16
Avail Cap(c_a), veh/h	412	966	968	143	680	697	400	0	631	399	650	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	21.6	22.4	51.1	32.7	32.9	39.2	0.0	30.5	35.9	29.9	29.0
Incr Delay (d2), s/veh	47.2	7.5	9.1	1.4	9.2	9.1	1.7	0.0	0.3	0.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	23.6	25.1	0.7	17.0	17.5	5.9	0.0	3.9	2.2	3.3	1.6
LnGrp Delay(d),s/veh	90.1	29.1	31.5	52.5	41.9	42.0	40.9	0.0	30.8	36.3	30.1	29.1
LnGrp LOS	F	C	C	D	D	D	D		C	D	C	C
Approach Vol, veh/h		2090			1122			363			294	
Approach Delay, s/veh		42.3			42.1			36.4			31.7	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	65.1		37.2	30.0	44.7		37.2
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	3.3	48.7		16.3	28.0	33.6		26.4
Green Ext Time (p_c), s	0.0	7.8		3.0	0.0	4.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	102	130	92	109	25	100	790	96	33	818	292
Future Volume (veh/h)	465	102	130	92	109	25	100	790	96	33	818	292
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	489	107	31	97	115	8	105	832	95	35	861	187
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	433	665	185	244	460	32	167	1276	146	66	1210	529
Arrive On Green	0.24	0.24	0.22	0.14	0.14	0.12	0.10	0.41	0.39	0.04	0.35	0.35
Sat Flow, veh/h	1774	2724	759	1774	3348	230	1723	3105	355	1723	3438	1502
Grp Volume(v), veh/h	489	68	70	97	60	63	105	461	466	35	861	187
Grp Sat Flow(s),veh/h/ln	1774	1770	1713	1774	1770	1809	1723	1719	1741	1723	1719	1502
Q Serve(g_s), s	23.0	2.8	3.1	4.7	2.9	2.9	5.5	20.3	20.4	1.9	20.4	8.7
Cycle Q Clear(g_c), s	23.0	2.8	3.1	4.7	2.9	2.9	5.5	20.3	20.4	1.9	20.4	8.7
Prop In Lane	1.00		0.44	1.00		0.13	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	433	432	418	244	243	249	167	706	715	66	1210	529
V/C Ratio(X)	1.13	0.16	0.17	0.40	0.25	0.25	0.63	0.65	0.65	0.53	0.71	0.35
Avail Cap(c_a), veh/h	433	432	418	696	694	710	292	706	715	292	1386	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	28.0	28.5	37.1	36.3	36.5	40.9	22.4	22.5	44.5	26.4	22.6
Incr Delay (d2), s/veh	83.7	0.2	0.2	1.1	0.5	0.5	3.8	2.1	2.1	6.5	1.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.2	1.4	1.5	2.4	1.4	1.5	2.8	10.0	10.2	1.0	9.9	3.6
LnGrp Delay(d),s/veh	119.4	28.2	28.6	38.2	36.8	37.0	44.8	24.5	24.7	51.0	27.9	23.0
LnGrp LOS	F	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		627			220			1032			1083	
Approach Delay, s/veh		99.4			37.5			26.6			27.8	
Approach LOS		F			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	37.2		17.0	7.6	42.7		27.0
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0
Max Q Clear Time (g_c+I1), s	7.5	22.4		6.7	3.9	22.4		25.0
Green Ext Time (p_c), s	0.1	8.5		0.8	0.0	9.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1590	480	0	1430	140	0	0	0	486	0	410
Future Volume (veh/h)	0	1590	480	0	1430	140	0	0	0	486	0	410
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1674	0	0	1505	0				512	0	413
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2079	930	0	2079	0				1041	0	479
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1674	0	0	1505	0				512	0	413
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	32.3	0.0	0.0	26.5	0.0				10.5	0.0	21.2
Cycle Q Clear(g_c), s	0.0	32.3	0.0	0.0	26.5	0.0				10.5	0.0	21.2
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2079	930	0	2079	0				1041	0	479
V/C Ratio(X)	0.00	0.81	0.00	0.00	0.72	0.00				0.49	0.00	0.86
Avail Cap(c_a), veh/h	0	2234	999	0	2234	0				1438	0	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.1	0.0	0.0	12.0	0.0				24.6	0.0	28.4
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.0	0.9	0.0				0.3	0.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.7	0.0	0.0	12.6	0.0				5.0	0.0	10.3
LnGrp Delay(d),s/veh	0.0	15.0	0.0	0.0	12.9	0.0				24.9	0.0	36.1
LnGrp LOS		B			B					C		D
Approach Vol, veh/h		1674			1505						925	
Approach Delay, s/veh		15.0			12.9						29.9	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		56.1		30.1		56.1		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		54.9		35.4		54.9		
Max Q Clear Time (g_c+I1), s		34.3		23.2		28.5		
Green Ext Time (p_c), s		16.7		2.3		20.4		

Intersection Summary		
HCM 2010 Ctrl Delay		17.6
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1536	540	0	1000	264	570	0	360	0	0	0
Future Volume (vph)	0	1536	540	0	1000	264	570	0	360	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.97		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1499		3309		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1499		3309		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1634	574	0	1064	281	606	0	383	0	0	0
RTOR Reduction (vph)	0	0	191	0	23	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	1634	383	0	1322	0	303	303	331	0	0	0
Confl. Peds. (#/hr)			2			4						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.6	63.6		63.6		22.9	22.9	22.9			
Effective Green, g (s)		64.2	63.6		64.2		23.1	23.1	23.1			
Actuated g/C Ratio		0.67	0.67		0.67		0.24	0.24	0.24			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2316	1000		2229		407	407	383			
v/s Ratio Prot		c0.48			0.40		0.18	0.18				
v/s Ratio Perm			0.26						c0.21			
v/c Ratio		0.71	0.38		0.59		0.74	0.74	0.86			
Uniform Delay, d1		9.7	7.1		8.5		33.4	33.4	34.6			
Progression Factor		1.00	1.00		0.79		1.00	1.00	1.00			
Incremental Delay, d2		1.0	0.2		0.3		6.3	6.3	17.3			
Delay (s)		10.7	7.3		6.9		39.7	39.7	51.9			
Level of Service		B	A		A		D	D	D			
Approach Delay (s)		9.8			6.9			44.5			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	13.4
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	800	110	620	610	620	160	920	940	480	760	70
Future Volume (veh/h)	110	800	110	620	610	620	160	920	940	480	760	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	112	816	104	633	622	493	163	939	724	490	776	63
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	145	906	115	269	671	530	268	1194	532	296	1654	134
Arrive On Green	0.08	0.30	0.28	0.16	0.37	0.35	0.08	0.34	0.34	0.09	0.35	0.33
Sat Flow, veh/h	1723	3064	390	1723	1825	1443	3442	3539	1578	3442	4790	387
Grp Volume(v), veh/h	112	458	462	633	586	529	163	939	724	490	548	291
Grp Sat Flow(s),veh/h/ln	1723	1719	1735	1723	1719	1549	1721	1770	1578	1721	1695	1787
Q Serve(g_s), s	8.1	32.7	32.8	20.0	41.8	42.1	5.9	30.6	43.2	11.0	16.2	16.4
Cycle Q Clear(g_c), s	8.1	32.7	32.8	20.0	41.8	42.1	5.9	30.6	43.2	11.0	16.2	16.4
Prop In Lane	1.00		0.23	1.00		0.93	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	145	508	513	269	632	569	268	1194	532	296	1170	617
V/C Ratio(X)	0.77	0.90	0.90	2.35	0.93	0.93	0.61	0.79	1.36	1.66	0.47	0.47
Avail Cap(c_a), veh/h	145	525	530	269	649	585	368	1194	532	296	1170	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	43.3	43.5	54.0	38.8	39.9	57.1	38.3	42.4	58.5	32.7	33.0
Incr Delay (d2), s/veh	20.1	17.7	17.5	619.3	18.9	20.9	0.8	5.3	174.2	310.1	1.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	18.0	18.2	55.8	23.2	21.3	2.8	15.9	44.5	18.0	7.8	8.5
LnGrp Delay(d),s/veh	77.4	60.9	61.1	673.3	57.7	60.8	57.9	43.5	216.6	368.6	34.1	35.6
LnGrp LOS	E	E	E	F	E	E	E	D	F	F	C	D
Approach Vol, veh/h		1032			1748			1826			1329	
Approach Delay, s/veh		62.8			281.5			113.5			157.8	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	47.2	24.0	41.8	14.0	48.2	14.8	51.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	39.8	17.9	37.0	11.6	37.1	8.7	46.2
Max Q Clear Time (g_c+I1), s	13.0	45.2	22.0	34.8	7.9	18.4	10.1	44.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	5.3	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	164.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	906	90	890	800	540	90	906	890	440	911	90
Future Volume (veh/h)	110	906	90	890	800	540	90	906	890	440	911	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	116	954	0	937	842	0	95	954	886	463	959	90
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	153	789	353	722	1237	553	72	1187	1536	372	1316	123
Arrive On Green	0.09	0.23	0.00	0.22	0.36	0.00	0.04	0.34	0.34	0.11	0.40	0.39
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2758	3442	3266	306
Grp Volume(v), veh/h	116	954	0	937	842	0	95	954	886	463	520	529
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1803
Q Serve(g_s), s	9.7	34.0	0.0	32.0	30.8	0.0	6.0	36.3	31.2	16.0	36.8	36.9
Cycle Q Clear(g_c), s	9.7	34.0	0.0	32.0	30.8	0.0	6.0	36.3	31.2	16.0	36.8	36.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	153	789	353	722	1237	553	72	1187	1536	372	713	726
V/C Ratio(X)	0.76	1.21	0.00	1.30	0.68	0.00	1.32	0.80	0.58	1.25	0.73	0.73
Avail Cap(c_a), veh/h	186	789	353	722	1237	553	72	1242	1579	372	740	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	57.1	0.0	58.1	40.2	0.0	71.1	44.8	21.7	66.1	37.4	37.6
Incr Delay (d2), s/veh	10.3	106.0	0.0	144.2	1.4	0.0	214.7	3.6	0.4	131.4	3.3	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	27.7	0.0	29.2	14.9	0.0	7.2	18.4	11.9	14.4	18.5	18.9
LnGrp Delay(d),s/veh	76.2	163.1	0.0	202.3	41.6	0.0	285.8	48.5	22.1	197.5	40.7	40.9
LnGrp LOS	E	F		F	D		F	D	C	F	D	D
Approach Vol, veh/h		1070			1779			1935			1512	
Approach Delay, s/veh		153.6			126.2			48.0			88.8	
Approach LOS		F			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	53.7	36.0	38.5	10.0	63.7	17.2	57.3
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	38.3	34.0	36.0	8.0	38.9	11.7	32.8
Green Ext Time (p_c), s	0.0	8.8	0.0	0.0	0.0	14.3	0.0	8.9

Intersection Summary		
HCM 2010 Ctrl Delay		97.9
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1396	840	20	150	950	406	10	296	130	250	130	1170
Future Volume (veh/h)	1396	840	20	150	950	406	10	296	130	250	130	1170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1469	884	20	158	1000	0	11	312	105	263	137	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1303	1729	39	182	742	332	18	291	96	305	509	433
Arrive On Green	0.39	0.50	0.49	0.10	0.22	0.00	0.01	0.11	0.11	0.17	0.27	0.00
Sat Flow, veh/h	3343	3439	78	1774	3438	1538	1774	2616	864	1774	1863	1583
Grp Volume(v), veh/h	1469	442	462	158	1000	0	11	209	208	263	137	0
Grp Sat Flow(s),veh/h/ln	1672	1720	1797	1774	1719	1538	1774	1770	1710	1774	1863	1583
Q Serve(g_s), s	56.0	24.7	24.7	12.6	31.0	0.0	0.9	16.0	16.0	20.7	8.3	0.0
Cycle Q Clear(g_c), s	56.0	24.7	24.7	12.6	31.0	0.0	0.9	16.0	16.0	20.7	8.3	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	1303	865	903	182	742	332	18	197	190	305	509	433
V/C Ratio(X)	1.13	0.51	0.51	0.87	1.35	0.00	0.63	1.06	1.09	0.86	0.27	0.00
Avail Cap(c_a), veh/h	1303	865	903	259	742	332	198	197	190	401	509	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.8	23.9	23.9	63.5	56.3	0.0	70.9	63.8	63.8	57.9	41.0	0.0
Incr Delay (d2), s/veh	67.6	0.5	0.5	18.8	165.5	0.0	31.4	81.4	91.6	14.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.9	11.8	12.3	7.1	31.7	0.0	0.6	12.2	12.4	11.3	4.3	0.0
LnGrp Delay(d),s/veh	111.5	24.4	24.4	82.3	221.9	0.0	102.2	145.2	155.4	71.8	41.2	0.0
LnGrp LOS	F	C	C	F	F		F	F	F	E	D	
Approach Vol, veh/h		2373			1158			428			400	
Approach Delay, s/veh		78.3			202.8			149.1			61.3	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	76.2	5.4	43.3	60.0	35.0	27.2	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	14.6	26.7	2.9	10.3	58.0	33.0	22.7	18.0
Green Ext Time (p_c), s	0.2	18.2	0.0	2.8	0.0	0.0	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	0	533	371	550	562	0	344	0	110	0	0	0
Future Volume (veh/h)	0	533	371	550	562	0	344	0	110	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	561	318	579	592	0	362	0	32	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	687	389	477	2237	0	456	455	396	2	4	0
Arrive On Green	0.00	0.33	0.32	0.28	0.65	0.00	0.26	0.00	0.25	0.00	0.00	0.00
Sat Flow, veh/h	1774	2095	1186	1723	3529	0	1774	1770	1538	1774	3632	0
Grp Volume(v), veh/h	0	460	419	579	592	0	362	0	32	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1562	1723	1719	0	1774	1770	1538	1774	1770	0
Q Serve(g_s), s	0.0	21.3	21.4	24.0	6.3	0.0	16.5	0.0	1.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	21.3	21.4	24.0	6.3	0.0	16.5	0.0	1.4	0.0	0.0	0.0
Prop In Lane	1.00		0.76	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	563	512	477	2237	0	456	455	396	2	4	0
V/C Ratio(X)	0.00	0.82	0.82	1.21	0.26	0.00	0.79	0.00	0.08	0.00	0.00	0.00
Avail Cap(c_a), veh/h	123	694	630	477	2237	0	716	714	621	716	1428	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	26.8	27.2	31.4	6.4	0.0	30.1	0.0	24.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.3	6.9	114.5	0.1	0.0	3.3	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.1	10.2	26.4	3.0	0.0	8.5	0.0	0.6	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	33.0	34.1	145.9	6.5	0.0	33.4	0.0	24.9	0.0	0.0	0.0
LnGrp LOS		C	C	F	A		C		C			
Approach Vol, veh/h		879			1171			394			0	
Approach Delay, s/veh		33.5			75.4			32.7			0.0	
Approach LOS		C			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	32.4		26.3	0.0	60.4		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	26.0	23.4		18.5	0.0	8.3		0.0
Green Ext Time (p_c), s	0.0	4.0		1.1	0.0	12.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	620	90	120	430	120	100	60	0	0	48	347
Future Vol, veh/h	179	620	90	120	430	120	100	60	0	0	48	347
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	674	98	130	467	130	109	65	0	0	52	377

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	843	544	261	930	732	85	439	0	0	75	0	0
Stage 1	251	251	-	293	293	-	-	-	-	-	-	-
Stage 2	592	293	-	637	439	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	284	~ 446	778	248	~ 348	974	1121	-	-	1524	-	-
Stage 1	753	699	-	715	670	-	-	-	-	-	-	-
Stage 2	493	~ 670	-	465	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 396	765	-	~ 309	958	1112	-	-	1511	-	-
Mov Cap-2 Maneuver	-	~ 396	-	-	~ 309	-	-	-	-	-	-	-
Stage 1	674	693	-	640	599	-	-	-	-	-	-	-
Stage 2	~ 84	~ 599	-	~ 11	573	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			5.4	0
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1112	-	-	-	444	-	1511	-	-
HCM Lane V/C Ratio	0.098	-	-	-	0.979	-	-	-	-
HCM Control Delay (s)	8.6	-	-	-	68.4	-	0	-	-
HCM Lane LOS	A	-	-	-	F	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	12.2	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	210	691	220	110	500	1260	814	120	1230	30
Future Volume (veh/h)	40	70	210	691	220	110	500	1260	814	120	1230	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	76	19	751	239	31	543	1370	487	130	1337	31
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	165	137	871	472	395	512	1691	723	98	1250	29
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.29	0.48	0.48	0.06	0.24	0.23
Sat Flow, veh/h	1774	1863	1540	3442	1863	1561	1774	3539	1513	1774	5111	119
Grp Volume(v), veh/h	43	76	19	751	239	31	543	1370	487	130	887	481
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1721	1863	1561	1774	1770	1513	1774	1695	1839
Q Serve(g_s), s	2.9	5.0	1.5	26.7	14.1	1.9	36.9	42.2	31.7	7.1	31.3	31.3
Cycle Q Clear(g_c), s	2.9	5.0	1.5	26.7	14.1	1.9	36.9	42.2	31.7	7.1	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	157	165	137	871	472	395	512	1691	723	98	829	450
V/C Ratio(X)	0.27	0.46	0.14	0.86	0.51	0.08	1.06	0.81	0.67	1.32	1.07	1.07
Avail Cap(c_a), veh/h	396	416	344	971	525	440	512	1691	723	98	829	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	55.4	53.8	45.7	41.0	36.4	45.5	28.5	25.7	60.5	48.3	48.4
Incr Delay (d2), s/veh	0.3	0.7	0.2	6.8	0.3	0.0	56.8	4.3	5.0	199.1	51.6	62.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	0.6	13.5	7.3	0.8	26.1	21.6	14.3	8.9	20.6	23.7
LnGrp Delay(d),s/veh	54.8	56.2	54.0	52.5	41.3	36.5	102.3	32.8	30.7	259.6	100.0	110.7
LnGrp LOS	D	E	D	D	D	D	F	C	C	F	F	F
Approach Vol, veh/h		138			1021			2400			1498	
Approach Delay, s/veh		55.4			49.4			48.1			117.3	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	65.1		15.4	40.9	35.3		36.4
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.0	38.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	9.1	44.2		7.0	38.9	33.3		28.7
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	69.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	20	90	10	20	20	210	1642	186	20	1210	631
Future Volume (veh/h)	404	20	90	10	20	20	210	1642	186	20	1210	631
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	439	22	41	11	22	15	228	1785	197	22	1315	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	7	502	31	56	26	136	1813	196	60	1841	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.31	0.08	0.56	0.55	0.03	0.52	0.00
Sat Flow, veh/h	436	22	1568	0	176	80	1774	3219	349	1774	3632	0
Grp Volume(v), veh/h	461	0	41	48	0	0	228	966	1016	22	1315	0
Grp Sat Flow(s),veh/h/ln	457	0	1568	257	0	0	1774	1770	1798	1774	1770	0
Q Serve(g_s), s	0.0	0.0	2.6	0.0	0.0	0.0	11.0	75.5	81.0	1.7	40.8	0.0
Cycle Q Clear(g_c), s	46.0	0.0	2.6	46.0	0.0	0.0	11.0	75.5	81.0	1.7	40.8	0.0
Prop In Lane	0.95		1.00	0.23		0.31	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h	195	0	502	113	0	0	136	997	1013	60	1841	0
V/C Ratio(X)	2.36	0.00	0.08	0.43	0.00	0.00	1.68	0.97	1.00	0.37	0.71	0.00
Avail Cap(c_a), veh/h	195	0	502	113	0	0	136	997	1013	136	1993	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.7	0.0	34.2	39.7	0.0	0.0	66.4	30.2	31.7	68.0	26.3	0.0
Incr Delay (d2), s/veh	628.5	0.0	0.0	0.9	0.0	0.0	336.1	21.1	29.2	1.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	41.8	0.0	1.1	1.4	0.0	0.0	18.0	42.6	48.2	0.9	20.1	0.0
LnGrp Delay(d),s/veh	683.2	0.0	34.2	40.7	0.0	0.0	402.5	51.4	60.9	69.4	27.2	0.0
LnGrp LOS	F		C	D			F	D	F	E	C	
Approach Vol, veh/h		502			48			2210			1337	
Approach Delay, s/veh		630.2			40.7			92.0			27.9	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	85.0		50.0	15.0	78.8		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	3.7	83.0		48.0	13.0	42.8		48.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	24.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	136.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	730	120	50	510	260	156	522	60	340	360	330
Future Volume (veh/h)	370	730	120	50	510	260	156	522	60	340	360	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	394	777	119	53	543	72	166	555	17	362	383	169
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	495	1197	183	69	1032	437	204	869	384	460	504	422
Arrive On Green	0.15	0.40	0.40	0.04	0.29	0.29	0.11	0.25	0.25	0.14	0.28	0.28
Sat Flow, veh/h	3343	2988	457	1774	3539	1499	1774	3539	1564	3343	1810	1515
Grp Volume(v), veh/h	394	447	449	53	543	72	166	555	17	362	383	169
Grp Sat Flow(s),veh/h/ln	1672	1719	1726	1774	1770	1499	1774	1770	1564	1672	1810	1515
Q Serve(g_s), s	10.9	20.2	20.2	2.8	12.3	3.4	8.8	13.4	0.8	10.0	18.6	8.7
Cycle Q Clear(g_c), s	10.9	20.2	20.2	2.8	12.3	3.4	8.8	13.4	0.8	10.0	18.6	8.7
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	495	689	691	69	1032	437	204	869	384	460	504	422
V/C Ratio(X)	0.80	0.65	0.65	0.77	0.53	0.16	0.81	0.64	0.04	0.79	0.76	0.40
Avail Cap(c_a), veh/h	1047	689	691	556	1349	571	556	1146	506	1047	586	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	23.3	23.3	45.6	28.4	25.3	41.4	32.3	27.6	40.0	31.6	28.1
Incr Delay (d2), s/veh	3.0	2.1	2.1	16.1	0.4	0.2	7.7	0.8	0.0	3.0	4.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	10.0	10.0	1.7	6.1	1.4	4.7	6.6	0.3	4.8	9.9	3.7
LnGrp Delay(d),s/veh	42.4	25.4	25.5	61.6	28.8	25.4	49.1	33.1	27.6	43.0	36.6	28.7
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	D	C
Approach Vol, veh/h		1290			668			738			914	
Approach Delay, s/veh		30.6			31.1			36.6			37.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	42.4	15.0	30.7	18.2	31.9	17.2	28.5
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	14.8	22.2	10.8	20.6	12.9	14.3	12.0	15.4
Green Ext Time (p_c), s	0.1	7.8	0.4	4.2	1.3	7.3	1.1	5.6

Intersection Summary		
HCM 2010 Ctrl Delay		33.7
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	742	179	30	30	437	130	30	250	40	50	170	703
Future Volume (veh/h)	742	179	30	30	437	130	30	250	40	50	170	703
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1820	1900
Adj Flow Rate, veh/h	807	195	26	33	475	124	33	272	35	54	185	288
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	717	1845	243	46	576	149	46	656	84	81	383	332
Arrive On Green	0.40	0.59	0.58	0.03	0.21	0.20	0.03	0.21	0.21	0.05	0.22	0.23
Sat Flow, veh/h	1774	3145	414	1774	2763	716	1774	3159	402	1723	1729	1501
Grp Volume(v), veh/h	807	109	112	33	303	296	33	151	156	54	185	288
Grp Sat Flow(s),veh/h/ln	1774	1770	1790	1774	1770	1709	1774	1770	1792	1723	1729	1501
Q Serve(g_s), s	55.0	3.7	3.8	2.5	22.2	22.6	2.5	10.1	10.3	4.2	12.7	25.1
Cycle Q Clear(g_c), s	55.0	3.7	3.8	2.5	22.2	22.6	2.5	10.1	10.3	4.2	12.7	25.1
Prop In Lane	1.00		0.23	1.00		0.42	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	717	1038	1050	46	369	356	46	368	372	81	383	332
V/C Ratio(X)	1.13	0.10	0.11	0.71	0.82	0.83	0.71	0.41	0.42	0.66	0.48	0.87
Avail Cap(c_a), veh/h	717	1038	1050	196	468	452	196	455	461	203	445	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	12.4	12.5	65.7	51.4	51.8	65.7	46.7	46.8	63.7	46.2	50.5
Incr Delay (d2), s/veh	73.6	0.0	0.0	18.0	9.0	10.1	18.0	0.7	0.8	8.9	0.9	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	41.6	1.8	1.9	1.5	11.8	11.7	1.5	5.0	5.1	2.2	6.2	11.9
LnGrp Delay(d),s/veh	114.2	12.4	12.5	83.8	60.4	61.8	83.8	47.4	47.5	72.6	47.1	67.1
LnGrp LOS	F	B	B	F	E	E	F	D	D	E	D	E
Approach Vol, veh/h		1028			632			340			527	
Approach Delay, s/veh		92.3			62.3			51.0			60.7	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	33.3	8.6	83.8	8.6	35.1	60.0	32.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	6.2	12.3	4.5	5.8	4.5	27.1	57.0	24.6
Green Ext Time (p_c), s	0.0	4.7	0.0	5.3	0.0	2.8	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	72.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	420	20	120	600	70	10	452	130	20	300	260
Future Volume (veh/h)	430	420	20	120	600	70	10	452	130	20	300	260
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	457	447	8	128	638	69	11	481	44	21	319	91
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	494	763	649	180	747	81	61	560	470	81	581	493
Arrive On Green	0.29	0.42	0.42	0.10	0.24	0.22	0.03	0.30	0.30	0.05	0.31	0.31
Sat Flow, veh/h	1723	1810	1538	1723	3123	337	1774	1863	1561	1774	1863	1580
Grp Volume(v), veh/h	457	447	8	128	351	356	11	481	44	21	319	91
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1741	1774	1863	1561	1774	1863	1580
Q Serve(g_s), s	32.3	23.8	0.4	9.0	24.5	24.6	0.8	30.6	2.5	1.4	17.8	5.3
Cycle Q Clear(g_c), s	32.3	23.8	0.4	9.0	24.5	24.6	0.8	30.6	2.5	1.4	17.8	5.3
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	494	763	649	180	411	417	61	560	470	81	581	493
V/C Ratio(X)	0.92	0.59	0.01	0.71	0.85	0.85	0.18	0.86	0.09	0.26	0.55	0.18
Avail Cap(c_a), veh/h	494	763	649	233	440	445	155	831	696	155	581	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	27.9	21.1	54.4	45.6	45.9	58.9	41.4	31.6	57.9	35.9	31.5
Incr Delay (d2), s/veh	23.4	1.2	0.0	6.9	14.2	14.3	1.4	6.0	0.1	1.7	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	12.2	0.2	4.6	13.2	13.4	0.4	16.7	1.1	0.7	9.4	2.3
LnGrp Delay(d),s/veh	66.8	29.0	21.1	61.3	59.9	60.2	60.3	47.4	31.7	59.5	37.0	31.7
LnGrp LOS	E	C	C	E	E	E	E	D	C	E	D	C
Approach Vol, veh/h		912			835			536			431	
Approach Delay, s/veh		47.9			60.2			46.4			36.9	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	57.0	8.3	43.2	40.0	34.0	9.7	41.8
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	11.0	25.8	2.8	19.8	34.3	26.6	3.4	32.6
Green Ext Time (p_c), s	0.1	5.8	0.0	4.6	0.0	1.3	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	690	120	170	610	77	330	224	360	65	133	50
Future Volume (veh/h)	70	690	120	170	610	77	330	224	360	65	133	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	719	113	177	635	73	344	233	139	68	139	42
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	110	1116	175	223	1363	156	438	712	597	361	523	158
Arrive On Green	0.06	0.38	0.36	0.13	0.44	0.42	0.38	0.38	0.38	0.38	0.38	0.37
Sat Flow, veh/h	1723	2971	467	1723	3088	354	1188	1863	1561	1000	1369	414
Grp Volume(v), veh/h	73	416	416	177	353	355	344	233	139	68	0	181
Grp Sat Flow(s),veh/h/ln	1723	1719	1718	1723	1719	1724	1188	1863	1561	1000	0	1783
Q Serve(g_s), s	4.4	21.2	21.3	10.6	15.4	15.5	29.9	9.4	6.4	5.5	0.0	7.5
Cycle Q Clear(g_c), s	4.4	21.2	21.3	10.6	15.4	15.5	37.3	9.4	6.4	14.9	0.0	7.5
Prop In Lane	1.00		0.27	1.00		0.21	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	110	646	645	223	758	760	438	712	597	361	0	681
V/C Ratio(X)	0.66	0.64	0.64	0.79	0.47	0.47	0.78	0.33	0.23	0.19	0.00	0.27
Avail Cap(c_a), veh/h	502	840	839	340	758	760	442	717	601	364	0	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	27.4	27.6	44.9	20.9	21.1	35.5	23.2	22.3	28.5	0.0	22.7
Incr Delay (d2), s/veh	6.6	2.3	2.3	7.1	1.0	1.0	9.0	0.3	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	10.5	10.5	5.5	7.5	7.5	10.8	4.9	2.8	1.5	0.0	3.7
LnGrp Delay(d),s/veh	55.3	29.7	29.9	52.0	21.9	22.1	44.4	23.5	22.5	28.7	0.0	22.9
LnGrp LOS	E	C	C	D	C	C	D	C	C	C		C
Approach Vol, veh/h		905			885			716			249	
Approach Delay, s/veh		31.9			28.0			33.3			24.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.8	44.0		44.7	10.8	51.0		44.7
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	12.6	23.3		16.9	6.4	17.5		39.3
Green Ext Time (p_c), s	0.3	14.6		4.7	0.2	16.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	961	70	210	571	180	50	190	290	300	0	50
Future Volume (veh/h)	30	961	70	210	571	180	50	190	290	300	0	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.92	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	32	1033	72	226	614	102	54	204	89	323	0	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1150	80	270	1635	725	333	349	275	347	365	310
Arrive On Green	0.03	0.34	0.33	0.15	0.46	0.46	0.19	0.19	0.19	0.20	0.00	0.00
Sat Flow, veh/h	1774	3347	233	1774	3539	1570	1774	1863	1464	1774	1863	1583
Grp Volume(v), veh/h	32	546	559	226	614	102	54	204	89	323	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1810	1774	1770	1570	1774	1863	1464	1774	1863	1583
Q Serve(g_s), s	2.4	38.9	38.9	16.4	15.0	5.0	3.4	13.3	7.0	23.8	0.0	0.0
Cycle Q Clear(g_c), s	2.4	38.9	38.9	16.4	15.0	5.0	3.4	13.3	7.0	23.8	0.0	0.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	608	622	270	1635	725	333	349	275	347	365	310
V/C Ratio(X)	0.53	0.90	0.90	0.84	0.38	0.14	0.16	0.58	0.32	0.93	0.00	0.00
Avail Cap(c_a), veh/h	147	613	627	347	1635	725	481	505	397	347	365	310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	63.1	41.4	41.5	54.6	23.2	20.6	45.2	49.2	46.6	52.5	0.0	0.0
Incr Delay (d2), s/veh	7.0	16.8	16.6	13.0	0.3	0.2	0.2	1.5	0.7	30.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	21.8	22.3	9.0	7.4	2.2	1.7	7.0	2.9	14.6	0.0	0.0
LnGrp Delay(d),s/veh	70.1	58.2	58.1	67.6	23.6	20.7	45.4	50.8	47.3	83.3	0.0	0.0
LnGrp LOS	E	E	E	E	C	C	D	D	D	F		
Approach Vol, veh/h		1137			942			347			323	
Approach Delay, s/veh		58.5			33.8			49.0			83.3	
Approach LOS		E			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.2	49.6		30.0	8.5	65.3		28.9
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	18.4	40.9		25.8	4.4	17.0		15.3
Green Ext Time (p_c), s	0.3	2.7		0.0	0.0	30.6		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	220	50	160	410	20	30	685	310	0	311	260
Future Volume (veh/h)	376	220	50	160	410	20	30	685	310	0	311	260
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	380	222	34	162	414	0	30	692	265	0	314	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	1227	185	200	513	436	372	812	311	0	1150	0
Arrive On Green	0.24	0.40	0.40	0.11	0.28	0.00	0.32	0.32	0.32	0.00	0.32	0.00
Sat Flow, veh/h	1774	3079	465	1774	1863	1583	1058	2501	958	0	3725	0
Grp Volume(v), veh/h	380	126	130	162	414	0	30	490	467	0	314	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1863	1583	1058	1770	1689	0	1770	0
Q Serve(g_s), s	15.3	3.4	3.5	6.5	15.2	0.0	1.6	18.9	19.0	0.0	4.8	0.0
Cycle Q Clear(g_c), s	15.3	3.4	3.5	6.5	15.2	0.0	6.4	18.9	19.0	0.0	4.8	0.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.57	0.00		0.00
Lane Grp Cap(c), veh/h	419	705	707	200	513	436	372	575	549	0	1150	0
V/C Ratio(X)	0.91	0.18	0.18	0.81	0.81	0.00	0.08	0.85	0.85	0.00	0.27	0.00
Avail Cap(c_a), veh/h	484	724	726	726	1016	863	476	748	714	0	1496	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	27.2	14.3	14.3	31.8	24.8	0.0	20.7	23.1	23.1	0.0	18.3	0.0
Incr Delay (d2), s/veh	17.7	0.0	0.0	2.9	1.2	0.0	0.0	6.0	6.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	1.7	1.7	3.4	8.0	0.0	0.5	10.2	9.8	0.0	2.4	0.0
LnGrp Delay(d),s/veh	45.0	14.3	14.4	34.7	25.9	0.0	20.8	29.1	29.4	0.0	18.4	0.0
LnGrp LOS	D	B	B	C	C		C	C	C		B	
Approach Vol, veh/h		636			576			987			314	
Approach Delay, s/veh		32.6			28.4			29.0			18.4	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.3	33.2		27.8	21.3	24.2		27.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	8.5	5.5		6.8	17.3	17.2		21.0
Green Ext Time (p_c), s	0.1	1.3		3.0	0.1	1.3		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	350	70	281	260	30	340	850	645	40	430	290
Future Volume (veh/h)	302	350	70	281	260	30	340	850	645	40	430	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	315	365	61	293	271	5	354	885	340	42	448	225
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	363	596	99	341	653	292	396	1441	630	83	781	359
Arrive On Green	0.20	0.20	0.18	0.19	0.18	0.18	0.23	0.42	0.42	0.05	0.24	0.22
Sat Flow, veh/h	1774	3034	502	1774	3539	1583	1723	3438	1504	1723	3293	1513
Grp Volume(v), veh/h	315	211	215	293	271	5	354	885	340	42	448	225
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1583	1723	1719	1504	1723	1647	1513
Q Serve(g_s), s	19.1	12.1	12.4	17.8	7.5	0.3	22.1	22.4	18.9	2.6	13.4	14.9
Cycle Q Clear(g_c), s	19.1	12.1	12.4	17.8	7.5	0.3	22.1	22.4	18.9	2.6	13.4	14.9
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	348	347	341	653	292	396	1441	630	83	781	359
V/C Ratio(X)	0.87	0.61	0.62	0.86	0.42	0.02	0.89	0.61	0.54	0.51	0.57	0.63
Avail Cap(c_a), veh/h	494	573	571	494	1145	512	604	1730	757	170	829	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	40.8	41.1	43.5	40.1	37.1	41.5	25.3	24.3	51.7	37.5	38.7
Incr Delay (d2), s/veh	11.8	1.7	1.8	10.0	0.4	0.0	7.8	0.5	0.7	1.8	1.6	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	6.1	6.2	9.7	3.7	0.1	11.4	10.7	7.9	1.3	6.3	6.7
LnGrp Delay(d),s/veh	54.6	42.5	42.9	53.5	40.5	37.1	49.3	25.7	25.0	53.4	39.0	43.3
LnGrp LOS	D	D	D	D	D	D	D	C	C	D	D	D
Approach Vol, veh/h		741			569			1579			715	
Approach Delay, s/veh		47.8			47.2			30.8			41.2	
Approach LOS		D			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	50.6	25.4	25.9	29.6	30.4	26.7	24.5				
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5				
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5				
Max Q Clear Time (g_c+I1), s	4.6	24.4	19.8	14.4	24.1	16.9	21.1	9.5				
Green Ext Time (p_c), s	0.0	18.7	0.6	4.1	0.5	7.7	0.6	4.4				
Intersection Summary												
HCM 2010 Ctrl Delay			39.0									
HCM 2010 LOS			D									

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	243	0	20	0	0	0	20	574	0	0	130	95
Future Vol, veh/h	243	0	20	0	0	0	20	574	0	0	130	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	264	0	22	0	0	0	22	624	0	0	141	103
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	14.9	0	17.1	10.6
HCM LOS	B	-	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	9%	0%	92%	0%	0%	0%
Vol Thru, %	91%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	8%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	383	263	0	130	95
LT Vol	20	0	243	0	0	0
Through Vol	191	383	0	0	130	0
RT Vol	0	0	20	0	0	95
Lane Flow Rate	230	416	286	0	141	103
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.376	0.674	0.488	0	0.251	0.163
Departure Headway (Hd)	5.885	5.837	6.14	6.73	6.404	5.691
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	611	620	586	0	560	629
Service Time	3.62	3.572	4.178	4.797	4.152	3.439
HCM Lane V/C Ratio	0.376	0.671	0.488	0	0.252	0.164
HCM Control Delay	12.1	19.8	14.9	9.8	11.3	9.6
HCM Lane LOS	B	C	B	N	B	A
HCM 95th-tile Q	1.7	5.1	2.7	0	1	0.6

Intersection						
Int Delay, s/veh	18.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	643	20	20	20	10	25
Future Vol, veh/h	643	20	20	20	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	699	22	22	22	11	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	76	5	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	915	1068	1607	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	902	1068	1607	-	-	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	3.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1607	-	902	1068	-	-
HCM Lane V/C Ratio	0.014	-	0.775	0.02	-	-
HCM Control Delay (s)	7.3	0	21.2	8.4	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	7.9	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	756	100	180	660	170	210	702	290	80	450	190
Future Volume (veh/h)	356	756	100	180	660	170	210	702	290	80	450	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	363	771	94	184	673	42	214	716	186	82	459	158
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	409	1098	134	231	876	384	254	1098	485	123	609	208
Arrive On Green	0.23	0.35	0.34	0.13	0.25	0.25	0.15	0.32	0.32	0.07	0.24	0.23
Sat Flow, veh/h	1774	3155	385	1774	3539	1553	1723	3438	1519	1723	2505	855
Grp Volume(v), veh/h	363	432	433	184	673	42	214	716	186	82	314	303
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1774	1770	1553	1723	1719	1519	1723	1719	1641
Q Serve(g_s), s	24.1	25.7	25.8	12.3	21.5	2.6	14.7	21.8	11.6	5.7	20.6	21.0
Cycle Q Clear(g_c), s	24.1	25.7	25.8	12.3	21.5	2.6	14.7	21.8	11.6	5.7	20.6	21.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.52
Lane Grp Cap(c), veh/h	409	616	616	231	876	384	254	1098	485	123	418	399
V/C Ratio(X)	0.89	0.70	0.70	0.80	0.77	0.11	0.84	0.65	0.38	0.67	0.75	0.76
Avail Cap(c_a), veh/h	466	665	665	272	944	414	254	1134	501	131	444	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	34.3	34.4	51.4	42.6	35.5	50.6	35.7	32.2	55.2	42.7	43.2
Incr Delay (d2), s/veh	17.0	3.0	3.1	13.1	3.6	0.1	21.6	1.3	0.5	11.3	6.6	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	13.0	13.0	6.9	11.0	1.1	8.5	10.5	4.9	3.1	10.5	10.4
LnGrp Delay(d),s/veh	62.3	37.3	37.5	64.6	46.2	35.6	72.1	37.0	32.7	66.5	49.4	50.7
LnGrp LOS	E	D	D	E	D	D	E	D	C	E	D	D
Approach Vol, veh/h		1228			899			1116			699	
Approach Delay, s/veh		44.8			49.5			43.0			51.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	46.4	22.0	33.6	32.1	34.2	12.7	42.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	17.2	44.3	16.5	30.0	30.5	31.0	7.8	38.7
Max Q Clear Time (g_c+I1), s	14.3	27.8	16.7	23.0	26.1	23.5	7.7	23.8
Green Ext Time (p_c), s	0.1	9.2	0.0	4.7	0.5	5.1	0.0	8.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.6
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	480	1416	974	30	40	290
Future Volume (vph)	480	1416	974	30	40	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3422		1770	1583
Flt Permitted	0.11	1.00	1.00		0.95	1.00
Satd. Flow (perm)	206	3438	3422		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	505	1491	1025	32	42	305
RTOR Reduction (vph)	0	0	2	0	0	231
Lane Group Flow (vph)	505	1491	1055	0	42	74
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	59.0	63.6	34.6		22.9	22.9
Effective Green, g (s)	60.2	64.2	35.2		23.1	23.1
Actuated g/C Ratio	0.63	0.67	0.37		0.24	0.24
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	527	2316	1263		429	383
v/s Ratio Prot	c0.25	0.43	0.31		0.02	
v/s Ratio Perm	c0.35					c0.05
v/c Ratio	0.96	0.64	0.84		0.10	0.19
Uniform Delay, d1	26.6	9.0	27.4		28.0	28.7
Progression Factor	0.92	0.51	1.00		1.00	1.00
Incremental Delay, d2	22.1	0.4	4.9		0.0	0.1
Delay (s)	46.5	4.9	32.3		28.1	28.8
Level of Service	D	A	C		C	C
Approach Delay (s)		15.5	32.3		28.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	12.2
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	400	20	670	550	620	30	590	1010	660	528	40
Future Volume (veh/h)	50	400	20	670	550	620	30	590	1010	660	528	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	52	412	19	691	567	0	31	608	961	680	544	38
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	83	724	33	833	1429	639	72	801	1300	671	1279	89
Arrive On Green	0.05	0.21	0.20	0.25	0.42	0.00	0.04	0.23	0.23	0.20	0.39	0.38
Sat Flow, veh/h	1774	3446	159	3343	3438	1538	1723	3438	2684	3343	3261	227
Grp Volume(v), veh/h	52	211	220	691	567	0	31	608	961	680	286	296
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1672	1719	1538	1723	1719	1342	1672	1719	1769
Q Serve(g_s), s	4.4	16.5	16.6	30.2	17.8	0.0	2.7	25.4	36.0	31.0	18.8	18.9
Cycle Q Clear(g_c), s	4.4	16.5	16.6	30.2	17.8	0.0	2.7	25.4	36.0	31.0	18.8	18.9
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	83	372	386	833	1429	639	72	801	1300	671	674	694
V/C Ratio(X)	0.62	0.57	0.57	0.83	0.40	0.00	0.43	0.76	0.74	1.01	0.42	0.43
Avail Cap(c_a), veh/h	126	527	547	996	1803	807	290	801	1300	671	674	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	54.7	54.8	54.9	31.6	0.0	72.2	55.2	32.2	61.7	34.2	34.3
Incr Delay (d2), s/veh	2.8	2.9	2.8	6.5	0.4	0.0	1.5	4.2	2.3	38.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.4	8.7	14.7	8.5	0.0	1.3	12.5	16.8	17.8	9.0	9.3
LnGrp Delay(d),s/veh	75.1	57.6	57.6	61.4	32.0	0.0	73.8	59.4	34.5	99.8	34.6	34.8
LnGrp LOS	E	E	E	E	C		E	E	C	F	C	C
Approach Vol, veh/h		483			1258			1600			1262	
Approach Delay, s/veh		59.5			48.1			44.7			69.8	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.5	37.0	10.4	64.6	11.3	68.2	35.0	40.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	32.2	18.6	4.7	20.9	6.4	19.8	33.0	38.0
Green Ext Time (p_c), s	4.3	12.3	0.0	11.6	0.0	16.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	290	120	450	40	1608	520	330	960	30
Future Volume (veh/h)	0	0	30	290	120	450	40	1608	520	330	960	30
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				216	251	281	42	1693	0	347	1011	31
Adj No. of Lanes				1	1	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				399	419	351	343	1900	808	269	2452	75
Arrive On Green				0.22	0.22	0.22	0.51	0.51	0.00	0.15	0.70	0.70
Sat Flow, veh/h				1774	1863	1560	539	3725	1583	1774	3506	107
Grp Volume(v), veh/h				216	251	281	42	1693	0	347	510	532
Grp Sat Flow(s),veh/h/ln				1774	1863	1560	539	1863	1583	1774	1770	1844
Q Serve(g_s), s				11.4	12.8	18.0	4.4	43.1	0.0	16.0	12.9	12.9
Cycle Q Clear(g_c), s				11.4	12.8	18.0	4.4	43.1	0.0	16.0	12.9	12.9
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h				399	419	351	343	1900	808	269	1238	1289
V/C Ratio(X)				0.54	0.60	0.80	0.12	0.89	0.00	1.29	0.41	0.41
Avail Cap(c_a), veh/h				604	635	532	354	1974	839	269	1273	1326
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				36.1	36.7	38.7	13.8	23.2	0.0	44.8	6.7	6.7
Incr Delay (d2), s/veh				0.4	0.5	2.7	0.1	5.2	0.0	156.2	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.6	6.6	8.0	0.7	23.5	0.0	19.4	6.3	6.5
LnGrp Delay(d),s/veh				36.6	37.2	41.4	13.8	28.4	0.0	201.0	6.8	6.8
LnGrp LOS				D	D	D	B	C		F	A	A
Approach Vol, veh/h					748			1735			1389	
Approach Delay, s/veh					38.6			28.0			55.3	
Approach LOS					D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	57.9				77.9		27.8
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	18.0	45.1				14.9		20.0
Green Ext Time (p_c), s	0.0	8.8				26.7		1.6

Intersection Summary		
HCM 2010 Ctrl Delay		39.9
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1160	0	0	1008	640	640
Future Volume (vph)	1160	0	0	1008	640	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1261	0	0	1096	696	696
RTOR Reduction (vph)	0	0	0	21	0	363
Lane Group Flow (vph)	1261	0	0	1075	696	333
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	22.2			27.6	27.6	28.6
Effective Green, g (s)	23.2			28.6	28.6	28.6
Actuated g/C Ratio	0.39			0.48	0.48	0.48
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1935			1332	1641	1332
v/s Ratio Prot	c0.25			c0.39	0.20	0.12
v/s Ratio Perm						
v/c Ratio	0.65			0.81	0.42	0.25
Uniform Delay, d1	15.0			13.3	10.2	9.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.8			3.7	0.2	0.1
Delay (s)	15.8			16.9	10.4	9.3
Level of Service	B			B	B	A
Approach Delay (s)		15.8	16.9		9.9	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	640	330	350	800	320	300	365	730	280	254	574
Future Volume (veh/h)	545	640	330	350	800	320	300	365	730	280	254	574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	586	688	311	376	860	0	323	392	567	301	273	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	367	568	257	299	1054	472	357	543	485	299	496	0
Arrive On Green	0.11	0.24	0.23	0.17	0.31	0.00	0.20	0.31	0.30	0.17	0.27	0.00
Sat Flow, veh/h	3442	2368	1070	1723	3438	1538	1774	1770	1580	1723	1810	0
Grp Volume(v), veh/h	586	514	485	376	860	0	323	392	567	301	273	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1668	1723	1719	1538	1774	1770	1580	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	29.6	46.0	26.0	19.3	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	29.6	46.0	26.0	19.3	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	367	425	400	299	1054	472	357	543	485	299	496	0
V/C Ratio(X)	1.60	1.21	1.21	1.26	0.82	0.00	0.90	0.72	1.17	1.01	0.55	0.00
Avail Cap(c_a), veh/h	367	425	400	299	1054	472	367	543	485	299	496	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.0	57.0	57.3	62.0	48.1	0.0	58.5	46.3	52.5	62.0	46.5	0.0
Incr Delay (d2), s/veh	280.9	114.9	116.0	140.7	6.5	0.0	24.0	7.2	96.7	54.0	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	31.1	29.5	24.0	17.4	0.0	15.5	15.6	33.1	16.8	10.2	0.0
LnGrp Delay(d),s/veh	347.9	171.9	173.2	202.7	54.5	0.0	82.5	53.5	149.2	116.1	50.1	0.0
LnGrp LOS	F	F	F	F	D		F	D	F	F	D	
Approach Vol, veh/h		1585			1236			1282			574	
Approach Delay, s/veh		237.4			99.6			103.1			84.7	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	34.2	45.8	20.0	50.0	30.0	50.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	28.0	38.0	28.7	21.3	18.0	36.7	28.0	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	145.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	1200	0	0	680	240	160	1036	110	0	0	0
Future Volume (veh/h)	410	1200	0	0	680	240	160	1036	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	423	1237	0	0	701	232	165	1068	79			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	470	2035	0	0	1054	349	636	1268	549			
Arrive On Green	0.27	1.00	0.00	0.00	0.40	0.40	0.36	0.36	0.36			
Sat Flow, veh/h	3442	3632	0	0	2696	861	1774	3539	1533			
Grp Volume(v), veh/h	423	1237	0	0	477	456	165	1068	79			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1695	1774	1770	1533			
Q Serve(g_s), s	14.2	0.0	0.0	0.0	26.3	26.4	7.9	33.3	4.2			
Cycle Q Clear(g_c), s	14.2	0.0	0.0	0.0	26.3	26.4	7.9	33.3	4.2			
Prop In Lane	1.00		0.00	0.00		0.51	1.00		1.00			
Lane Grp Cap(c), veh/h	470	2035	0	0	717	686	636	1268	549			
V/C Ratio(X)	0.90	0.61	0.00	0.00	0.66	0.67	0.26	0.84	0.14			
Avail Cap(c_a), veh/h	470	2035	0	0	717	686	724	1445	626			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	42.8	0.0	0.0	0.0	29.1	29.3	27.2	35.4	26.0			
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	4.8	5.0	0.3	4.4	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	0.0	0.0	0.0	13.8	13.3	3.9	16.9	1.8			
LnGrp Delay(d),s/veh	45.3	0.1	0.0	0.0	33.9	34.3	27.5	39.8	26.2			
LnGrp LOS	D	A			C	C	C	D	C			
Approach Vol, veh/h		1660			933			1312				
Approach Delay, s/veh		11.6			34.1			37.4				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		73.0			20.4	52.6		47.0
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		62.1			* 16	41.7		48.8
Max Q Clear Time (g_c+I1), s		2.0			16.2	28.4		35.3
Green Ext Time (p_c), s		32.8			0.0	11.1		7.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1360	30	180	660	0	0	0	0	240	985	350
Future Volume (veh/h)	0	1360	30	180	660	0	0	0	0	240	985	350
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1432	0	189	695	0				253	1037	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1369	0	218	1922	0				263	1141	618
Arrive On Green	0.00	0.39	0.00	0.25	1.00	0.00				0.39	0.39	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				674	2925	1583
Grp Volume(v), veh/h	0	1432	0	189	695	0				687	603	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1829	1770	1583
Q Serve(g_s), s	0.0	46.4	0.0	12.3	0.0	0.0				44.0	37.9	0.0
Cycle Q Clear(g_c), s	0.0	46.4	0.0	12.3	0.0	0.0				44.0	37.9	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.37		1.00
Lane Grp Cap(c), veh/h	0	1369	0	218	1922	0				714	691	618
V/C Ratio(X)	0.00	1.05	0.00	0.87	0.36	0.00				0.96	0.87	0.00
Avail Cap(c_a), veh/h	0	1369	0	310	1922	0				716	693	620
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.71	0.71	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	36.8	0.0	44.3	0.0	0.0				35.7	33.9	0.0
Incr Delay (d2), s/veh	0.0	37.3	0.0	13.2	0.4	0.0				24.6	12.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	29.7	0.0	6.8	0.1	0.0				27.0	20.7	0.0
LnGrp Delay(d),s/veh	0.0	74.1	0.0	57.5	0.4	0.0				60.3	45.9	0.0
LnGrp LOS		F		E	A					E	D	
Approach Vol, veh/h		1432			884						1290	
Approach Delay, s/veh		74.1			12.6						53.6	
Approach LOS		E			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	18.8	50.4		50.8		69.2		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 21	39.1		* 47		64.1		
Max Q Clear Time (g_c+I1), s	14.3	48.4		46.0		2.0		
Green Ext Time (p_c), s	0.3	0.0		0.6		34.0		

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	440	220	581	500	160	390	690	491	240	690	200
Future Volume (veh/h)	370	440	220	581	500	160	390	690	491	240	690	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	402	478	117	632	543	152	424	750	249	261	750	200
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	456	643	288	686	677	189	403	1161	519	288	725	193
Arrive On Green	0.14	0.19	0.19	0.21	0.26	0.25	0.23	0.33	0.33	0.16	0.26	0.25
Sat Flow, veh/h	3343	3438	1538	3343	2646	738	1774	3539	1580	1774	2751	734
Grp Volume(v), veh/h	402	478	117	632	352	343	424	750	249	261	482	468
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1665	1774	1770	1580	1774	1770	1715
Q Serve(g_s), s	16.1	17.9	9.1	25.3	26.2	26.4	31.0	24.7	17.2	19.7	36.0	36.0
Cycle Q Clear(g_c), s	16.1	17.9	9.1	25.3	26.2	26.4	31.0	24.7	17.2	19.7	36.0	36.0
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	456	643	288	686	440	426	403	1161	519	288	467	452
V/C Ratio(X)	0.88	0.74	0.41	0.92	0.80	0.81	1.05	0.65	0.48	0.91	1.03	1.03
Avail Cap(c_a), veh/h	514	906	405	759	516	500	403	1161	519	403	467	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	52.4	48.9	53.2	47.6	47.9	52.8	39.1	36.6	56.2	50.3	50.6
Incr Delay (d2), s/veh	14.5	1.1	0.3	14.9	6.4	6.9	59.4	1.2	0.7	15.5	50.7	51.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	8.6	3.9	13.1	13.2	12.9	21.7	12.3	7.6	10.9	24.1	23.4
LnGrp Delay(d),s/veh	72.4	53.5	49.2	68.1	53.9	54.8	112.2	40.4	37.3	71.6	101.0	102.0
LnGrp LOS	E	D	D	E	D	D	F	D	D	E	F	F
Approach Vol, veh/h		997			1327			1423			1211	
Approach Delay, s/veh		60.6			60.9			61.2			95.0	
Approach LOS		E			E			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.2	48.8	32.0	29.5	35.0	40.0	22.6	38.9				
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3				
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7				
Max Q Clear Time (g_c+I1), s	21.7	26.7	27.3	19.9	33.0	38.0	18.1	28.4				
Green Ext Time (p_c), s	0.3	6.1	0.5	4.0	0.0	0.0	0.3	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			69.3									
HCM 2010 LOS			E									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	70	70	180	50	0	0	0	0	137	0	20
Future Volume (veh/h)	10	70	70	180	50	0	0	0	0	137	0	20
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	11	76	15	196	54	0				149	0	5
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	169	307	287	264	918	0				321	0	287
Arrive On Green	0.18	0.18	0.18	0.15	0.49	0.00				0.18	0.00	0.18
Sat Flow, veh/h	121	1695	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	87	0	15	196	54	0				149	0	5
Grp Sat Flow(s),veh/h/ln	1816	0	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.2	2.9	0.4	0.0				2.1	0.0	0.1
Cycle Q Clear(g_c), s	1.1	0.0	0.2	2.9	0.4	0.0				2.1	0.0	0.1
Prop In Lane	0.13		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	476	0	287	264	918	0				321	0	287
V/C Ratio(X)	0.18	0.00	0.05	0.74	0.06	0.00				0.46	0.00	0.02
Avail Cap(c_a), veh/h	1795	0	1462	996	1720	0				2281	0	2036
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	9.3	11.2	3.7	0.0				10.1	0.0	9.3
Incr Delay (d2), s/veh	0.2	0.0	0.1	4.1	0.0	0.0				1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.1	1.7	0.2	0.0				1.1	0.0	0.0
LnGrp Delay(d),s/veh	9.9	0.0	9.4	15.3	3.7	0.0				11.1	0.0	9.3
LnGrp LOS	A		A	B	A					B		A
Approach Vol, veh/h		102			250						154	
Approach Delay, s/veh		9.8			12.8						11.1	
Approach LOS		A			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			8.6	9.5		9.5		18.1
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			15.5	25.5		35.5		25.5
Max Q Clear Time (g_c+I1), s			4.9	3.1		4.1		2.4
Green Ext Time (p_c), s			0.4	0.7		0.4		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		11.7
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	157	0	0	140	363	90	0	70	0	0	0
Future Volume (veh/h)	50	157	0	0	140	363	90	0	70	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1900			
Adj Flow Rate, veh/h	54	171	0	0	152	112	98	0	18			
Adj No. of Lanes	1	1	0	0	1	1	1	1	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	90	825	0	0	371	315	304	0	272			
Arrive On Green	0.05	0.44	0.00	0.00	0.20	0.20	0.17	0.00	0.17			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	54	171	0	0	152	112	98	0	18			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	0.7	1.3	0.0	0.0	1.7	1.4	1.1	0.0	0.2			
Cycle Q Clear(g_c), s	0.7	1.3	0.0	0.0	1.7	1.4	1.1	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	90	825	0	0	371	315	304	0	272			
V/C Ratio(X)	0.60	0.21	0.00	0.00	0.41	0.36	0.32	0.00	0.07			
Avail Cap(c_a), veh/h	1179	2036	0	0	2036	1731	2700	0	2410			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.8	4.0	0.0	0.0	8.1	8.0	8.5	0.0	8.1			
Incr Delay (d2), s/veh	6.3	0.1	0.0	0.0	0.7	0.7	0.6	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	0.0	0.9	0.7	0.6	0.0	0.1			
LnGrp Delay(d),s/veh	17.1	4.1	0.0	0.0	8.9	8.7	9.1	0.0	8.2			
LnGrp LOS	B	A			A	A	A		A			
Approach Vol, veh/h		225			264			116				
Approach Delay, s/veh		7.2			8.8			8.9				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		8.5		14.8			5.7	9.1
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		35.5		25.5			15.5	25.5
Max Q Clear Time (g_c+I1), s		3.1		3.3			2.7	3.7
Green Ext Time (p_c), s		0.4		2.0			0.1	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	10	0	10	20	10	20	31	10	10	20	287
Future Volume (veh/h)	231	10	0	10	20	10	20	31	10	10	20	287
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	251	11	0	11	22	4	22	34	3	11	22	94
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	830	16	0	392	340	51	413	134	12	278	39	167
Arrive On Green	0.27	0.27	0.00	0.27	0.27	0.27	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1356	59	0	312	1264	191	635	982	87	143	287	1226
Grp Volume(v), veh/h	262	0	0	37	0	0	59	0	0	127	0	0
Grp Sat Flow(s),veh/h/ln	1416	0	0	1766	0	0	1704	0	0	1656	0	0
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.96		0.00	0.30		0.11	0.37		0.05	0.09		0.74
Lane Grp Cap(c), veh/h	847	0	0	784	0	0	559	0	0	484	0	0
V/C Ratio(X)	0.31	0.00	0.00	0.05	0.00	0.00	0.11	0.00	0.00	0.26	0.00	0.00
Avail Cap(c_a), veh/h	2818	0	0	3140	0	0	2995	0	0	2963	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	4.1	0.0	0.0	5.8	0.0	0.0	6.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	5.1	0.0	0.0	4.2	0.0	0.0	5.9	0.0	0.0	6.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h		262			37			59			127	
Approach Delay, s/veh		5.1			4.2			5.9			6.4	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		6.6		8.6		6.6		8.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		2.4		4.5		3.1		2.2
Green Ext Time (p_c), s		0.9		1.6		0.9		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	280	300	211	188	40
Future Volume (veh/h)	60	280	300	211	188	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	0	326	229	204	0
Adj No. of Lanes	0	0	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	123	0	427	2236	450	0
Arrive On Green	0.07	0.00	0.24	0.63	0.24	0.00
Sat Flow, veh/h	1748	0	1774	3632	1863	0
Grp Volume(v), veh/h	66	0	326	229	204	0
Grp Sat Flow(s),veh/h/ln	1775	0	1774	1770	1863	0
Q Serve(g_s), s	1.1	0.0	5.2	0.8	2.8	0.0
Cycle Q Clear(g_c), s	1.1	0.0	5.2	0.8	2.8	0.0
Prop In Lane	0.98	0.00	1.00			0.00
Lane Grp Cap(c), veh/h	125	0	427	2236	450	0
V/C Ratio(X)	0.53	0.00	0.76	0.10	0.45	0.00
Avail Cap(c_a), veh/h	2086	0	910	6503	2189	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.6	0.0	10.7	2.2	9.8	0.0
Incr Delay (d2), s/veh	3.4	0.0	2.9	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.8	0.4	1.5	0.0
LnGrp Delay(d),s/veh	17.0	0.0	13.5	2.2	10.5	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	66			555	204	
Approach Delay, s/veh	17.0			8.8	10.5	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.6		6.6	11.8	11.8		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		55.5		35.5	15.5	35.5		
Max Q Clear Time (g_c+I1), s		2.8		3.1	7.2	4.8		
Green Ext Time (p_c), s		2.6		0.2	0.6	2.5		

Intersection Summary			
HCM 2010 Ctrl Delay			9.9
HCM 2010 LOS			A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	184	131	149	255	31	182	260	76	18	130	10
Future Volume (veh/h)	10	184	131	149	255	31	182	260	76	18	130	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	200	50	162	277	25	198	283	54	20	141	4
Adj No. of Lanes	0	2	0	0	2	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	970	231	450	708	66	509	653	127	209	1132	32
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	45	2704	643	741	1973	184	879	1784	347	201	3092	86
Grp Volume(v), veh/h	139	0	122	238	0	226	282	0	253	87	0	78
Grp Sat Flow(s),veh/h/ln	1829	0	1564	1239	0	1658	1386	0	1624	1702	0	1677
Q Serve(g_s), s	0.0	0.0	1.8	3.5	0.0	3.3	4.2	0.0	3.8	0.0	0.0	1.0
Cycle Q Clear(g_c), s	1.7	0.0	1.8	5.3	0.0	3.3	5.2	0.0	3.8	1.0	0.0	1.0
Prop In Lane	0.08		0.41	0.68		0.11	0.70		0.21	0.23		0.05
Lane Grp Cap(c), veh/h	775	0	561	629	0	595	695	0	595	758	0	614
V/C Ratio(X)	0.18	0.00	0.22	0.38	0.00	0.38	0.41	0.00	0.42	0.11	0.00	0.13
Avail Cap(c_a), veh/h	1246	0	979	973	0	1038	1469	0	1514	1649	0	1563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	7.3	8.4	0.0	7.8	8.2	0.0	7.8	6.9	0.0	6.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.4	0.0	0.4	0.4	0.0	0.5	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.8	1.7	0.0	1.6	2.0	0.0	1.8	0.5	0.0	0.5
LnGrp Delay(d),s/veh	7.4	0.0	7.5	8.8	0.0	8.2	8.5	0.0	8.3	7.0	0.0	7.0
LnGrp LOS	A		A	A		A	A		A	A		A
Approach Vol, veh/h		261			464			535			165	
Approach Delay, s/veh		7.4			8.5			8.4			7.0	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.5		16.2		16.5		16.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5		20.5
Max Q Clear Time (g_c+I1), s		7.2		3.8		3.0		7.3
Green Ext Time (p_c), s		4.0		4.1		4.2		3.7

Intersection Summary		
HCM 2010 Ctrl Delay		8.1
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	610	190	30	1003	340	270	340	20	140	260	510
Future Volume (veh/h)	240	610	190	30	1003	340	270	340	20	140	260	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	261	663	74	33	1090	120	293	370	0	152	283	446
Adj No. of Lanes	2	2	1	1	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	257	836	374	202	1420	423	678	871	390	917	1116	497
Arrive On Green	0.08	0.24	0.24	0.12	0.29	0.28	0.20	0.25	0.00	0.27	0.32	0.32
Sat Flow, veh/h	3343	3438	1538	1723	4940	1531	3442	3539	1583	3442	3539	1576
Grp Volume(v), veh/h	261	663	74	33	1090	120	293	370	0	152	283	446
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1531	1721	1770	1583	1721	1770	1576
Q Serve(g_s), s	10.0	23.5	5.0	2.2	26.2	4.3	9.7	11.4	0.0	4.4	7.7	26.8
Cycle Q Clear(g_c), s	10.0	23.5	5.0	2.2	26.2	4.3	9.7	11.4	0.0	4.4	7.7	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	836	374	202	1420	423	678	871	390	917	1116	497
V/C Ratio(X)	1.01	0.79	0.20	0.16	0.77	0.28	0.43	0.42	0.00	0.17	0.25	0.90
Avail Cap(c_a), veh/h	257	1428	639	202	1938	583	678	871	390	917	1116	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	46.1	39.1	51.6	42.3	10.4	45.8	41.3	0.0	36.6	33.1	24.8
Incr Delay (d2), s/veh	57.2	1.6	0.2	0.4	1.3	0.4	0.4	1.5	0.0	0.1	0.5	21.6
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	11.3	2.1	1.1	12.1	1.8	4.7	5.8	0.0	2.1	3.9	14.6
LnGrp Delay(d),s/veh	117.3	47.7	39.3	52.0	43.6	10.8	46.2	42.8	0.0	36.7	33.7	46.4
LnGrp LOS	F	D	D	D	D	B	D	D		D	C	D
Approach Vol, veh/h		998			1243			663			881	
Approach Delay, s/veh		65.3			40.7			44.3			40.6	
Approach LOS		E			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.6	36.0	19.8	35.6	29.6	45.0	14.0	41.4				
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5				
Max Green Setting (Gmax), s	20.0	30.5	6.0	* 53	11.0	39.5	9.0	49.5				
Max Q Clear Time (g_c+I1), s	6.4	13.4	4.2	25.5	11.7	28.8	12.0	28.2				
Green Ext Time (p_c), s	1.3	2.1	1.2	4.6	0.0	2.6	0.0	7.7				

Intersection Summary		
HCM 2010 Ctrl Delay		47.8
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	518	90	160	609	100	80	560	140	180	890	130
Future Volume (veh/h)	210	518	90	160	609	100	80	560	140	180	890	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	228	563	87	174	662	98	87	609	87	196	967	127
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	285	869	134	224	766	113	188	1302	783	296	1812	237
Arrive On Green	0.17	0.29	0.27	0.13	0.26	0.24	0.05	0.37	0.37	0.09	0.40	0.38
Sat Flow, veh/h	1723	2984	460	1723	2998	443	3442	3539	1570	3442	4541	595
Grp Volume(v), veh/h	228	324	326	174	379	381	87	609	87	196	721	373
Grp Sat Flow(s),veh/h/ln	1723	1719	1724	1723	1719	1722	1721	1770	1570	1721	1695	1745
Q Serve(g_s), s	16.3	21.0	21.2	12.5	27.0	27.1	3.1	16.8	3.8	7.1	20.8	21.0
Cycle Q Clear(g_c), s	16.3	21.0	21.2	12.5	27.0	27.1	3.1	16.8	3.8	7.1	20.8	21.0
Prop In Lane	1.00		0.27	1.00		0.26	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	285	501	502	224	440	440	188	1302	783	296	1353	696
V/C Ratio(X)	0.80	0.65	0.65	0.78	0.86	0.86	0.46	0.47	0.11	0.66	0.53	0.54
Avail Cap(c_a), veh/h	337	535	536	327	525	526	194	1302	783	296	1353	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	39.6	39.9	53.9	45.5	45.8	58.7	30.9	17.1	56.7	29.4	29.7
Incr Delay (d2), s/veh	9.3	1.8	1.8	3.8	10.7	10.9	0.7	1.2	0.3	4.4	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	10.2	10.3	6.2	14.1	14.2	1.5	8.4	1.7	3.6	10.0	10.7
LnGrp Delay(d),s/veh	60.6	41.4	41.7	57.7	56.2	56.7	59.3	32.1	17.4	61.1	30.9	32.6
LnGrp LOS	E	D	D	E	E	E	E	C	B	E	C	C
Approach Vol, veh/h		878			934			783			1290	
Approach Delay, s/veh		46.5			56.7			33.5			36.0	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	51.1	20.6	41.3	11.0	55.1	25.2	36.7
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	34.8	22.2	37.7	5.1	38.6	22.9	37.0
Max Q Clear Time (g_c+I1), s	9.1	18.8	14.5	23.2	5.1	23.0	18.3	29.1
Green Ext Time (p_c), s	0.0	4.3	0.0	1.3	0.0	4.3	0.8	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	617	110	860	774	380	60	907	660	410	1150	80
Future Volume (veh/h)	160	617	110	860	774	380	60	907	660	410	1150	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	174	671	0	935	841	0	65	986	654	446	1250	83
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	216	812	363	804	1221	546	69	1341	801	454	1202	80
Arrive On Green	0.13	0.24	0.00	0.24	0.36	0.00	0.04	0.26	0.26	0.13	0.36	0.34
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1571	3442	3369	223
Grp Volume(v), veh/h	174	671	0	935	841	0	65	986	654	446	656	677
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1571	1721	1770	1823
Q Serve(g_s), s	12.7	23.9	0.0	31.0	26.9	0.0	4.7	22.8	34.0	16.7	46.0	46.0
Cycle Q Clear(g_c), s	12.7	23.9	0.0	31.0	26.9	0.0	4.7	22.8	34.0	16.7	46.0	46.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	216	812	363	804	1221	546	69	1341	801	454	631	650
V/C Ratio(X)	0.81	0.83	0.00	1.16	0.69	0.00	0.95	0.74	0.82	0.98	1.04	1.04
Avail Cap(c_a), veh/h	234	853	382	804	1221	546	69	1341	801	454	631	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	46.7	0.0	49.0	35.5	0.0	61.8	43.4	26.7	55.8	41.5	41.6
Incr Delay (d2), s/veh	15.5	6.3	0.0	87.0	1.5	0.0	88.4	2.0	6.4	37.6	46.2	46.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	12.1	0.0	24.0	13.0	0.0	4.0	10.9	21.0	10.3	30.6	31.5
LnGrp Delay(d),s/veh	70.3	53.0	0.0	136.0	37.0	0.0	150.3	45.4	33.2	93.4	87.7	88.3
LnGrp LOS	E	D		F	D		F	D	C	F	F	F
Approach Vol, veh/h		845			1776			1705			1779	
Approach Delay, s/veh		56.6			89.1			44.7			89.4	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	38.0	35.0	35.0	9.0	50.0	20.2	49.8
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	15.0	31.5	29.0	* 30	3.0	43.5	16.0	43.0
Max Q Clear Time (g_c+I1), s	18.7	36.0	33.0	25.9	6.7	48.0	14.7	28.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	72.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	977	650	30	130	720	268	50	271	150	435	195	1574
Future Volume (veh/h)	977	650	30	130	720	268	50	271	150	435	195	1574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1812	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1062	707	31	141	783	0	54	295	114	473	212	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1193	1666	73	167	803	359	70	303	115	581	465	396
Arrive On Green	0.36	0.50	0.48	0.09	0.23	0.00	0.04	0.12	0.12	0.17	0.25	0.00
Sat Flow, veh/h	3343	3360	147	1774	3438	1538	1774	2514	951	3442	1863	1583
Grp Volume(v), veh/h	1062	362	376	141	783	0	54	206	203	473	212	0
Grp Sat Flow(s),veh/h/ln	1672	1721	1786	1774	1719	1538	1774	1770	1695	1721	1863	1583
Q Serve(g_s), s	39.8	17.8	17.9	10.4	30.0	0.0	4.0	15.4	15.9	17.6	12.8	0.0
Cycle Q Clear(g_c), s	39.8	17.8	17.9	10.4	30.0	0.0	4.0	15.4	15.9	17.6	12.8	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	1193	854	886	167	803	359	70	213	204	581	465	396
V/C Ratio(X)	0.89	0.42	0.42	0.84	0.98	0.00	0.77	0.96	1.00	0.81	0.46	0.00
Avail Cap(c_a), veh/h	1410	856	888	281	803	359	214	213	204	842	465	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.2	21.4	21.4	59.2	50.5	0.0	63.2	58.1	58.3	53.2	42.2	0.0
Incr Delay (d2), s/veh	6.6	0.3	0.3	11.0	25.7	0.0	16.3	51.5	61.5	4.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.4	8.5	8.9	5.6	17.1	0.0	2.3	10.5	10.9	8.7	6.7	0.0
LnGrp Delay(d),s/veh	46.9	21.7	21.7	70.1	76.2	0.0	79.5	109.6	119.8	57.3	42.9	0.0
LnGrp LOS	D	C	C	E	E		E	F	F	E	D	
Approach Vol, veh/h		1800			924			463			685	
Approach Delay, s/veh		36.6			75.3			110.6			52.8	
Approach LOS		D			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	69.9	9.2	37.2	51.4	35.0	24.9	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	12.4	19.9	6.0	14.8	41.8	32.0	19.6	17.9
Green Ext Time (p_c), s	0.2	13.8	0.1	2.9	3.6	0.0	1.3	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		57.5
HCM 2010 LOS		E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	310	80	60	560	120	50	48	0	10	40	204
Future Volume (veh/h)	163	310	80	60	560	120	50	48	0	10	40	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		1.00	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	177	337	65	65	609	119	54	52	0	11	43	44
Adj No. of Lanes	0	2	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	532	975	191	148	869	162	314	280	0	348	125	127
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.15	0.15	0.00	0.15	0.15	0.15
Sat Flow, veh/h	598	1563	307	80	1393	260	1285	1863	0	1324	827	846
Grp Volume(v), veh/h	234	0	345	793	0	0	54	52	0	11	0	87
Grp Sat Flow(s),veh/h/ln	839	0	1629	1734	0	0	1285	1863	0	1324	0	1673
Q Serve(g_s), s	0.0	0.0	4.0	1.6	0.0	0.0	1.6	1.0	0.0	0.3	0.0	1.9
Cycle Q Clear(g_c), s	5.2	0.0	4.0	11.9	0.0	0.0	3.4	1.0	0.0	1.3	0.0	1.9
Prop In Lane	0.76		0.19	0.08		0.15	1.00		0.00	1.00		0.51
Lane Grp Cap(c), veh/h	682	0	1016	1179	0	0	314	280	0	348	0	252
V/C Ratio(X)	0.34	0.00	0.34	0.67	0.00	0.00	0.17	0.19	0.00	0.03	0.00	0.35
Avail Cap(c_a), veh/h	909	0	1451	1629	0	0	621	724	0	663	0	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.6	0.0	3.6	5.0	0.0	0.0	16.7	14.8	0.0	15.3	0.0	15.2
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.7	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.8	5.9	0.0	0.0	0.6	0.5	0.0	0.1	0.0	0.9
LnGrp Delay(d),s/veh	3.9	0.0	3.8	5.7	0.0	0.0	17.0	15.1	0.0	15.4	0.0	16.0
LnGrp LOS	A		A	A			B	B		B		B
Approach Vol, veh/h		579			793			106			98	
Approach Delay, s/veh		3.8			5.7			16.0			15.9	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		10.5		29.4		10.5		29.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5
Max Q Clear Time (g_c+I1), s		5.4		7.2		3.9		13.9
Green Ext Time (p_c), s		0.6		12.5		0.6		10.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	180	924	90	50	220	690	590	70	1090	20
Future Volume (veh/h)	20	40	180	924	90	50	220	690	590	70	1090	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	43	78	869	287	16	239	750	465	76	1185	21
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	158	969	509	430	422	1557	901	341	1342	24
Arrive On Green	0.10	0.10	0.10	0.27	0.27	0.27	0.24	0.31	0.31	0.19	0.26	0.24
Sat Flow, veh/h	1774	1863	1533	3548	1863	1576	1774	5085	1530	1774	5141	91
Grp Volume(v), veh/h	22	43	78	869	287	16	239	750	465	76	781	425
Grp Sat Flow(s),veh/h/ln	1774	1863	1533	1774	1863	1576	1774	1695	1530	1774	1695	1842
Q Serve(g_s), s	1.4	2.7	6.2	30.2	16.9	1.0	15.2	15.4	23.5	4.6	28.3	28.3
Cycle Q Clear(g_c), s	1.4	2.7	6.2	30.2	16.9	1.0	15.2	15.4	23.5	4.6	28.3	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	183	192	158	969	509	430	422	1557	901	341	885	481
V/C Ratio(X)	0.12	0.22	0.49	0.90	0.56	0.04	0.57	0.48	0.52	0.22	0.88	0.88
Avail Cap(c_a), veh/h	396	416	342	1026	538	456	422	1557	901	341	885	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	52.7	54.2	44.8	40.0	34.2	43.0	36.1	16.3	43.6	45.4	45.5
Incr Delay (d2), s/veh	0.1	0.2	0.9	9.6	0.6	0.0	1.1	1.1	2.1	0.1	12.4	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	2.7	16.0	8.8	0.4	7.6	7.3	16.9	2.3	14.8	17.1
LnGrp Delay(d),s/veh	52.2	52.9	55.1	54.4	40.6	34.2	44.1	37.2	18.4	43.7	57.9	65.9
LnGrp LOS	D	D	E	D	D	C	D	D	B	D	E	E
Approach Vol, veh/h		143			1172			1454			1282	
Approach Delay, s/veh		54.0			50.8			32.3			59.7	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.6	43.2		17.2	34.4	37.4		38.9
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.1	37.1		27.0	10.9	31.3		34.9
Max Q Clear Time (g_c+I1), s	16.6	25.5		8.2	17.2	30.3		32.2
Green Ext Time (p_c), s	0.0	2.0		0.1	0.0	0.4		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	10	120	85	20	30	70	1067	131	30	1676	364
Future Volume (veh/h)	410	10	120	85	20	30	70	1067	131	30	1676	364
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	446	11	57	92	22	26	76	1160	132	33	1822	0
Adj No. of Lanes	0	1	1	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	10	547	45	12	3	128	2406	274	75	2490	0
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.33	0.07	0.52	0.50	0.04	0.49	0.00
Sat Flow, veh/h	1201	30	1572	0	33	8	1774	4631	527	1774	5253	0
Grp Volume(v), veh/h	457	0	57	140	0	0	76	849	443	33	1822	0
Grp Sat Flow(s),veh/h/ln	1230	0	1572	41	0	0	1774	1695	1768	1774	1695	0
Q Serve(g_s), s	0.0	0.0	3.2	0.0	0.0	0.0	5.5	21.2	21.4	2.4	37.7	0.0
Cycle Q Clear(g_c), s	46.0	0.0	3.2	46.0	0.0	0.0	5.5	21.2	21.4	2.4	37.7	0.0
Prop In Lane	0.98		1.00	0.66		0.19	1.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	481	0	547	59	0	0	128	1761	918	75	2490	0
V/C Ratio(X)	0.95	0.00	0.10	2.36	0.00	0.00	0.59	0.48	0.48	0.44	0.73	0.00
Avail Cap(c_a), veh/h	481	0	547	59	0	0	147	2075	1082	147	3113	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.6	0.0	29.2	55.5	0.0	0.0	59.5	20.4	20.7	61.8	26.9	0.0
Incr Delay (d2), s/veh	28.3	0.0	0.0	661.6	0.0	0.0	2.2	0.1	0.1	1.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	0.0	1.4	13.1	0.0	0.0	2.8	9.9	10.4	1.2	17.7	0.0
LnGrp Delay(d),s/veh	73.0	0.0	29.3	717.0	0.0	0.0	61.7	20.5	20.8	63.3	27.3	0.0
LnGrp LOS	E		C	F			E	C	C	E	C	
Approach Vol, veh/h		514			140			1368			1855	
Approach Delay, s/veh		68.1			717.0			22.9			28.0	
Approach LOS		E			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	72.7		50.0	13.5	68.8		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	4.4	23.4		48.0	7.5	39.7		48.0
Green Ext Time (p_c), s	0.0	26.8		0.0	0.0	22.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	153	20	30	194	50	20	160	20	60	230	544
Future Volume (veh/h)	360	153	20	30	194	50	20	160	20	60	230	544
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1825	1900
Adj Flow Rate, veh/h	391	166	14	33	211	40	22	174	15	65	250	358
Adj No. of Lanes	2	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	558	1017	85	62	534	99	45	989	84	121	569	497
Arrive On Green	0.16	0.31	0.29	0.03	0.18	0.16	0.03	0.30	0.30	0.07	0.33	0.34
Sat Flow, veh/h	3442	3307	276	1774	2962	549	1774	3301	282	1723	1734	1514
Grp Volume(v), veh/h	391	88	92	33	124	127	22	93	96	65	250	358
Grp Sat Flow(s),veh/h/ln	1721	1770	1814	1774	1770	1741	1774	1770	1813	1723	1734	1514
Q Serve(g_s), s	6.7	2.3	2.3	1.1	3.9	4.0	0.8	2.4	2.5	2.3	7.1	12.9
Cycle Q Clear(g_c), s	6.7	2.3	2.3	1.1	3.9	4.0	0.8	2.4	2.5	2.3	7.1	12.9
Prop In Lane	1.00		0.15	1.00		0.32	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	558	544	558	62	319	314	45	530	543	121	569	497
V/C Ratio(X)	0.70	0.16	0.16	0.53	0.39	0.40	0.49	0.17	0.18	0.54	0.44	0.72
Avail Cap(c_a), veh/h	3027	1019	1044	426	1019	1002	426	990	1015	441	970	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	15.8	15.9	29.7	22.6	22.8	30.1	16.2	16.2	28.1	16.5	18.0
Incr Delay (d2), s/veh	1.6	0.1	0.1	6.9	0.8	0.8	8.0	0.2	0.2	3.7	0.5	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.1	1.2	0.7	2.0	2.0	0.5	1.2	1.3	1.2	3.5	5.6
LnGrp Delay(d),s/veh	26.4	15.9	16.0	36.6	23.4	23.6	38.0	16.3	16.4	31.8	17.0	20.0
LnGrp LOS	C	B	B	D	C	C	D	B	B	C	B	B
Approach Vol, veh/h		571			284			211			673	
Approach Delay, s/veh		23.1			25.0			18.6			20.0	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	23.7	7.2	23.2	6.6	25.5	15.1	15.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	4.3	4.5	3.1	4.3	2.8	14.9	8.7	6.0
Green Ext Time (p_c), s	0.1	5.2	0.0	2.5	0.0	4.7	1.4	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	584	620	340	290	640	250	590	274	250	210	405	755
Future Volume (veh/h)	584	620	340	290	640	250	590	274	250	210	405	755
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	635	674	323	315	696	0	641	298	145	228	440	0
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	393	651	312	377	958	429	393	437	208	526	482	0
Arrive On Green	0.11	0.28	0.27	0.11	0.28	0.00	0.22	0.19	0.18	0.31	0.27	0.00
Sat Flow, veh/h	3442	2323	1113	3343	3438	1538	1774	2330	1107	1723	1810	0
Grp Volume(v), veh/h	635	513	484	315	696	0	641	225	218	228	440	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1666	1672	1719	1538	1774	1770	1667	1723	1810	0
Q Serve(g_s), s	16.0	39.2	39.2	12.9	25.6	0.0	31.0	16.5	17.2	14.8	33.0	0.0
Cycle Q Clear(g_c), s	16.0	39.2	39.2	12.9	25.6	0.0	31.0	16.5	17.2	14.8	33.0	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	393	496	467	377	958	429	393	332	313	526	482	0
V/C Ratio(X)	1.61	1.04	1.04	0.84	0.73	0.00	1.63	0.68	0.70	0.43	0.91	0.00
Avail Cap(c_a), veh/h	393	496	467	621	1130	506	393	582	548	526	530	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	62.0	50.4	50.6	60.8	45.7	0.0	54.5	52.9	53.4	38.9	49.8	0.0
Incr Delay (d2), s/veh	287.8	49.9	51.1	2.2	4.0	0.0	295.4	8.4	9.8	0.2	23.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	26.0	24.7	6.1	12.7	0.0	47.4	8.9	8.7	7.1	19.6	0.0
LnGrp Delay(d),s/veh	349.8	100.3	101.8	63.0	49.7	0.0	349.9	61.3	63.2	39.2	72.8	0.0
LnGrp LOS	F	F	F	E	D		F	E	E	D	E	
Approach Vol, veh/h		1632			1011			1084			668	
Approach Delay, s/veh		197.8			53.9			232.4			61.3	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	43.2	35.0	42.0	20.0	43.0	46.7	30.3
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	14.9	41.2	33.0	35.0	18.0	27.6	16.8	19.2
Green Ext Time (p_c), s	0.2	0.0	0.0	1.5	0.0	10.6	2.9	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	152.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	550	290	611	390	110	260	940	700	120	630	140
Future Volume (veh/h)	230	550	290	611	390	110	260	940	700	120	630	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	598	193	664	424	104	283	1022	415	130	685	140
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	322	788	352	737	969	236	358	1124	503	162	892	182
Arrive On Green	0.10	0.23	0.23	0.22	0.35	0.34	0.10	0.32	0.32	0.09	0.30	0.29
Sat Flow, veh/h	3343	3438	1534	3343	2744	667	3442	3539	1583	1774	2927	598
Grp Volume(v), veh/h	250	598	193	664	264	264	283	1022	415	130	414	411
Grp Sat Flow(s),veh/h/ln	1672	1719	1534	1672	1719	1692	1721	1770	1583	1774	1770	1755
Q Serve(g_s), s	8.2	18.3	12.5	21.8	13.3	13.6	9.1	31.3	27.4	8.1	24.0	24.0
Cycle Q Clear(g_c), s	8.2	18.3	12.5	21.8	13.3	13.6	9.1	31.3	27.4	8.1	24.0	24.0
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	322	788	352	737	607	597	358	1124	503	162	539	535
V/C Ratio(X)	0.78	0.76	0.55	0.90	0.44	0.44	0.79	0.91	0.82	0.80	0.77	0.77
Avail Cap(c_a), veh/h	622	1096	489	918	624	614	945	1129	505	487	564	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	40.6	38.4	42.8	27.9	28.2	49.4	36.9	35.6	50.3	35.6	35.8
Incr Delay (d2), s/veh	3.0	1.2	0.5	9.1	0.2	0.2	1.5	10.8	10.7	3.5	6.1	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	8.8	5.4	11.0	6.3	6.4	4.4	16.9	13.5	4.1	12.6	12.6
LnGrp Delay(d),s/veh	52.8	41.8	38.9	51.9	28.1	28.4	50.9	47.7	46.3	53.8	41.7	42.0
LnGrp LOS	D	D	D	D	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1041			1192			1720			955	
Approach Delay, s/veh		43.9			41.4			47.9			43.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	39.9	28.9	29.9	15.7	38.4	14.9	43.9
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	10.1	33.3	23.8	20.3	11.1	26.0	10.2	15.6
Green Ext Time (p_c), s	0.1	1.3	0.9	4.0	0.5	7.1	0.4	4.6

Intersection Summary		
HCM 2010 Ctrl Delay		44.6
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	110	40	110	230	0	0	0	0	713	0	50
Future Volume (veh/h)	0	110	40	110	230	0	0	0	0	713	0	50
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	116	6	116	242	0				751	0	28
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	261	222	153	602	0				856	0	764
Arrive On Green	0.00	0.14	0.14	0.09	0.32	0.00				0.48	0.00	0.48
Sat Flow, veh/h	0	1863	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	116	6	116	242	0				751	0	28
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	2.6	0.2	3.0	4.7	0.0				17.6	0.0	0.4
Cycle Q Clear(g_c), s	0.0	2.6	0.2	3.0	4.7	0.0				17.6	0.0	0.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	261	222	153	602	0				856	0	764
V/C Ratio(X)	0.00	0.44	0.03	0.76	0.40	0.00				0.88	0.00	0.04
Avail Cap(c_a), veh/h	0	1025	871	593	1025	0				1359	0	1213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.3	17.2	20.7	12.2	0.0				10.8	0.0	6.3
Incr Delay (d2), s/veh	0.0	1.2	0.0	7.5	0.4	0.0				4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.1	1.8	2.4	0.0				9.3	0.0	0.2
LnGrp Delay(d),s/veh	0.0	19.5	17.2	28.3	12.6	0.0				14.9	0.0	6.3
LnGrp LOS		B	B	C	B					B		A
Approach Vol, veh/h		122			358						779	
Approach Delay, s/veh		19.4			17.7						14.6	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			8.5	11.0		26.9		19.5
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			15.5	25.5		35.5		25.5
Max Q Clear Time (g_c+I1), s			5.0	4.6		19.6		6.7
Green Ext Time (p_c), s			0.2	1.8		2.8		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	803	0	0	190	477	150	0	70	0	0	0
Future Volume (veh/h)	20	803	0	0	190	477	150	0	70	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1900			
Adj Flow Rate, veh/h	21	845	0	0	200	289	158	0	15			
Adj No. of Lanes	1	1	0	0	1	1	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	38	1083	0	0	799	679	277	0	247			
Arrive On Green	0.02	0.58	0.00	0.00	0.43	0.43	0.16	0.00	0.16			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	21	845	0	0	200	289	158	0	15			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	0.4	11.9	0.0	0.0	2.4	4.4	2.8	0.0	0.3			
Cycle Q Clear(g_c), s	0.4	11.9	0.0	0.0	2.4	4.4	2.8	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	38	1083	0	0	799	679	277	0	247			
V/C Ratio(X)	0.56	0.78	0.00	0.00	0.25	0.43	0.57	0.00	0.06			
Avail Cap(c_a), veh/h	802	1385	0	0	1385	1177	1836	0	1639			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.6	5.5	0.0	0.0	6.3	6.8	13.4	0.0	12.3			
Incr Delay (d2), s/veh	12.4	2.2	0.0	0.0	0.2	0.4	1.8	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	6.5	0.0	0.0	1.2	1.9	1.5	0.0	0.1			
LnGrp Delay(d),s/veh	29.0	7.7	0.0	0.0	6.4	7.3	15.2	0.0	12.4			
LnGrp LOS	C	A			A	A	B		B			
Approach Vol, veh/h		866			489			173				
Approach Delay, s/veh		8.3			6.9			15.0				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		9.9		24.4			5.2	19.2
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		35.5		25.5			15.5	25.5
Max Q Clear Time (g_c+I1), s		4.8		13.9			2.4	6.4
Green Ext Time (p_c), s		0.5		6.0			0.0	8.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	20	0	10	30	10	10	37	10	10	30	873
Future Volume (veh/h)	320	20	0	10	30	10	10	37	10	10	30	873
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	348	22	0	11	33	4	11	40	4	11	33	350
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	700	30	0	222	505	53	197	505	44	129	57	495
Arrive On Green	0.35	0.35	0.00	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1323	84	0	210	1430	149	153	1455	126	16	163	1426
Grp Volume(v), veh/h	370	0	0	48	0	0	55	0	0	394	0	0
Grp Sat Flow(s),veh/h/ln	1407	0	0	1790	0	0	1734	0	0	1605	0	0
Q Serve(g_s), s	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0	6.4	0.0	0.0
Prop In Lane	0.94		0.00	0.23		0.08	0.20		0.07	0.03		0.89
Lane Grp Cap(c), veh/h	729	0	0	779	0	0	746	0	0	681	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.06	0.00	0.00	0.07	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1417	0	0	1623	0	0	1533	0	0	1481	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	6.5	0.0	0.0	6.6	0.0	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	2.9	0.0	0.0
LnGrp Delay(d),s/veh	9.0	0.0	0.0	6.5	0.0	0.0	6.6	0.0	0.0	9.3	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h		370			48			55			394	
Approach Delay, s/veh		9.0			6.5			6.6			9.3	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		14.9		15.1		14.9		15.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		2.6		8.9		8.4		2.5
Green Ext Time (p_c), s		2.7		2.3		2.5		2.5

Intersection Summary		
HCM 2010 Ctrl Delay		8.8
HCM 2010 LOS		A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	310	120	220	580	90
Future Volume (veh/h)	90	310	120	220	580	90
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	98	0	130	239	630	0
Adj No. of Lanes	0	0	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	152	0	177	2370	834	0
Arrive On Green	0.09	0.00	0.10	0.67	0.45	0.00
Sat Flow, veh/h	1757	0	1774	3632	1863	0
Grp Volume(v), veh/h	99	0	130	239	630	0
Grp Sat Flow(s),veh/h/ln	1775	0	1774	1770	1863	0
Q Serve(g_s), s	2.0	0.0	2.6	0.9	10.4	0.0
Cycle Q Clear(g_c), s	2.0	0.0	2.6	0.9	10.4	0.0
Prop In Lane	0.99	0.00	1.00			0.00
Lane Grp Cap(c), veh/h	153	0	177	2370	834	0
V/C Ratio(X)	0.65	0.00	0.73	0.10	0.76	0.00
Avail Cap(c_a), veh/h	1708	0	746	2370	1793	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	16.1	2.2	8.5	0.0
Incr Delay (d2), s/veh	4.5	0.0	5.8	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.5	0.4	5.6	0.0
LnGrp Delay(d),s/veh	20.8	0.0	21.9	2.2	9.9	0.0
LnGrp LOS	C		C	A	A	
Approach Vol, veh/h	99			369	630	
Approach Delay, s/veh	20.8			9.1	9.9	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.2		7.7	8.2	21.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		5.0		35.5	15.5	35.5		
Max Q Clear Time (g_c+I1), s		2.9		4.0	4.6	12.4		
Green Ext Time (p_c), s		1.1		0.2	0.2	4.1		

Intersection Summary		
HCM 2010 Ctrl Delay		10.6
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱			↰↱			↰↱	
Traffic Volume (veh/h)	10	248	233	137	200	20	133	360	129	10	320	10
Future Volume (veh/h)	10	248	233	137	200	20	133	360	129	10	320	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	270	85	149	217	15	145	391	94	11	348	7
Adj No. of Lanes	0	2	0	0	2	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	933	281	427	650	47	342	798	190	115	1348	27
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	32	2573	775	698	1793	130	508	2019	480	31	3413	68
Grp Volume(v), veh/h	197	0	169	188	0	193	317	0	313	192	0	174
Grp Sat Flow(s),veh/h/ln	1842	0	1537	951	0	1669	1410	0	1598	1830	0	1681
Q Serve(g_s), s	0.0	0.0	2.9	4.3	0.0	3.1	3.5	0.0	5.5	0.0	0.0	2.6
Cycle Q Clear(g_c), s	2.8	0.0	2.9	7.2	0.0	3.1	6.1	0.0	5.5	2.6	0.0	2.6
Prop In Lane	0.06		0.50	0.79		0.08	0.46		0.30	0.06		0.04
Lane Grp Cap(c), veh/h	771	0	557	519	0	605	698	0	631	825	0	664
V/C Ratio(X)	0.26	0.00	0.30	0.36	0.00	0.32	0.45	0.00	0.50	0.23	0.00	0.26
Avail Cap(c_a), veh/h	1111	0	848	731	0	921	1273	0	1311	1573	0	1380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	0.0	8.5	10.4	0.0	8.5	8.5	0.0	8.5	7.6	0.0	7.6
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.4	0.0	0.3	0.5	0.0	0.6	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.3	1.6	0.0	1.4	2.6	0.0	2.5	1.3	0.0	1.2
LnGrp Delay(d),s/veh	8.6	0.0	8.8	10.8	0.0	8.8	8.9	0.0	9.1	7.7	0.0	7.8
LnGrp LOS	A		A	B		A	A		A	A		A
Approach Vol, veh/h		366			381			630			366	
Approach Delay, s/veh		8.7			9.8			9.0			7.8	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.2		18.0		19.2		18.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5		20.5
Max Q Clear Time (g_c+I1), s		8.1		4.9		4.6		9.2
Green Ext Time (p_c), s		6.0		4.2		6.3		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1422	500	70	948	450	690	520	120	380	720	330
Future Volume (veh/h)	690	1422	500	70	948	450	690	520	120	380	720	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	711	1466	259	72	977	222	711	536	0	392	742	229
Adj No. of Lanes	2	2	1	1	3	1	2	2	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	514	1349	602	93	1463	436	966	817	365	1125	980	427
Arrive On Green	0.15	0.39	0.39	0.05	0.30	0.28	0.28	0.23	0.00	0.33	0.28	0.28
Sat Flow, veh/h	3343	3438	1535	1723	4940	1533	3442	3539	1583	3442	3539	1543
Grp Volume(v), veh/h	711	1466	259	72	977	222	711	536	0	392	742	229
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1533	1721	1770	1583	1721	1770	1543
Q Serve(g_s), s	20.0	51.0	16.0	5.4	22.6	9.8	24.3	17.8	0.0	11.2	24.9	13.9
Cycle Q Clear(g_c), s	20.0	51.0	16.0	5.4	22.6	9.8	24.3	17.8	0.0	11.2	24.9	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	514	1349	602	93	1463	436	966	817	365	1125	980	427
V/C Ratio(X)	1.38	1.09	0.43	0.78	0.67	0.51	0.74	0.66	0.00	0.35	0.76	0.54
Avail Cap(c_a), veh/h	514	1349	602	93	1463	436	966	817	365	1125	980	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.5	28.9	60.7	40.1	15.1	42.4	45.3	0.0	33.2	43.0	28.9
Incr Delay (d2), s/veh	176.3	44.3	0.2	32.9	1.2	1.0	3.0	4.1	0.0	0.2	5.5	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.8	32.5	6.8	3.4	10.4	4.3	12.0	9.2	0.0	5.4	12.9	6.5
LnGrp Delay(d),s/veh	231.3	83.8	29.0	93.6	41.3	16.1	45.3	49.4	0.0	33.4	48.5	33.7
LnGrp LOS	F	F	C	F	D	B	D	D		C	D	C
Approach Vol, veh/h		2436			1271			1247			1363	
Approach Delay, s/veh		121.0			39.9			47.1			41.6	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	34.0	11.5	55.0	41.0	40.0	24.0	42.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	25.0	28.5	6.0	* 50	19.0	34.5	19.0	36.5
Max Q Clear Time (g_c+I1), s	13.2	19.8	7.4	53.0	26.3	26.9	22.0	24.6
Green Ext Time (p_c), s	3.5	2.2	0.0	0.0	0.0	3.4	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	73.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	800	110	620	610	620	160	920	940	480	760	70
Future Volume (veh/h)	110	800	110	620	610	620	160	920	940	480	760	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	112	816	104	633	622	493	163	939	893	490	776	63
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	145	906	115	269	671	530	268	1194	779	296	1654	134
Arrive On Green	0.08	0.30	0.28	0.16	0.37	0.35	0.08	0.34	0.34	0.09	0.35	0.33
Sat Flow, veh/h	1723	3064	390	1723	1825	1443	3442	3539	1578	3442	4790	387
Grp Volume(v), veh/h	112	458	462	633	586	529	163	939	893	490	548	291
Grp Sat Flow(s),veh/h/ln	1723	1719	1735	1723	1719	1549	1721	1770	1578	1721	1695	1787
Q Serve(g_s), s	8.1	32.7	32.8	20.0	41.8	42.1	5.9	30.6	43.2	11.0	16.2	16.4
Cycle Q Clear(g_c), s	8.1	32.7	32.8	20.0	41.8	42.1	5.9	30.6	43.2	11.0	16.2	16.4
Prop In Lane	1.00		0.23	1.00		0.93	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	145	508	513	269	632	569	268	1194	779	296	1170	617
V/C Ratio(X)	0.77	0.90	0.90	2.35	0.93	0.93	0.61	0.79	1.15	1.66	0.47	0.47
Avail Cap(c_a), veh/h	145	525	530	269	649	585	368	1194	779	296	1170	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	43.3	43.5	54.0	38.8	39.9	57.1	38.3	32.4	58.5	32.7	33.0
Incr Delay (d2), s/veh	20.1	17.7	17.5	619.3	18.9	20.9	0.8	5.3	80.4	310.1	1.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	18.0	18.2	55.8	23.2	21.3	2.8	15.9	44.9	18.0	7.8	8.5
LnGrp Delay(d),s/veh	77.4	60.9	61.1	673.3	57.7	60.8	57.9	43.5	112.8	368.6	34.1	35.6
LnGrp LOS	E	E	E	F	E	E	E	D	F	F	C	D
Approach Vol, veh/h		1032			1748			1995			1329	
Approach Delay, s/veh		62.8			281.5			75.7			157.8	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	47.2	24.0	41.8	14.0	48.2	14.8	51.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	39.8	17.9	37.0	11.6	37.1	8.7	46.2
Max Q Clear Time (g_c+I1), s	13.0	45.2	22.0	34.8	7.9	18.4	10.1	44.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	5.6	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	150.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	906	90	890	800	540	90	906	890	440	911	90
Future Volume (veh/h)	110	906	90	890	800	540	90	906	890	440	911	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	116	954	0	937	842	0	95	954	874	463	959	90
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	157	843	377	871	1438	643	95	1286	816	396	1026	96
Arrive On Green	0.09	0.25	0.00	0.26	0.42	0.00	0.05	0.25	0.25	0.11	0.31	0.30
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1570	3442	3266	306
Grp Volume(v), veh/h	116	954	0	937	842	0	95	954	874	463	520	529
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1570	1721	1770	1803
Q Serve(g_s), s	8.6	32.0	0.0	34.0	24.6	0.0	7.0	22.5	33.0	15.0	37.2	37.2
Cycle Q Clear(g_c), s	8.6	32.0	0.0	34.0	24.6	0.0	7.0	22.5	33.0	15.0	37.2	37.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	157	843	377	871	1438	643	95	1286	816	396	556	566
V/C Ratio(X)	0.74	1.13	0.00	1.08	0.59	0.00	1.00	0.74	1.07	1.17	0.93	0.93
Avail Cap(c_a), veh/h	166	843	377	871	1438	643	95	1286	816	396	556	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	49.3	0.0	48.2	29.2	0.0	61.7	44.8	31.6	57.8	43.4	43.7
Incr Delay (d2), s/veh	12.9	73.9	0.0	53.0	0.5	0.0	91.7	2.2	52.5	100.5	23.1	22.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	23.8	0.0	22.0	11.8	0.0	5.8	10.8	41.1	12.6	21.8	22.1
LnGrp Delay(d),s/veh	70.6	123.2	0.0	101.2	29.8	0.0	153.4	47.1	84.0	158.3	66.5	66.5
LnGrp LOS	E	F		F	C		F	D	F	F	E	E
Approach Vol, veh/h		1070			1779			1923			1512	
Approach Delay, s/veh		117.5			67.4			69.1			94.6	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	37.0	38.0	36.5	11.0	45.0	15.9	58.6
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	13.0	30.5	32.0	* 30	5.0	38.5	11.1	50.9
Max Q Clear Time (g_c+I1), s	17.0	35.0	36.0	34.0	9.0	39.2	10.6	26.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1396	840	20	150	950	406	10	296	130	250	130	1170
Future Volume (veh/h)	1396	840	20	150	950	406	10	296	130	250	130	1170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1469	884	20	158	1000	0	11	312	105	263	137	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1406	1890	43	184	801	358	18	314	104	365	403	343
Arrive On Green	0.42	0.55	0.53	0.10	0.23	0.00	0.01	0.12	0.12	0.11	0.22	0.00
Sat Flow, veh/h	3343	3439	78	1774	3438	1538	1774	2616	864	3442	1863	1583
Grp Volume(v), veh/h	1469	442	462	158	1000	0	11	209	208	263	137	0
Grp Sat Flow(s),veh/h/ln	1672	1720	1797	1774	1719	1538	1774	1770	1710	1721	1863	1583
Q Serve(g_s), s	56.0	20.7	20.8	11.7	31.0	0.0	0.8	15.7	16.0	9.8	8.3	0.0
Cycle Q Clear(g_c), s	56.0	20.7	20.8	11.7	31.0	0.0	0.8	15.7	16.0	9.8	8.3	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	1406	945	987	184	801	358	18	213	206	365	403	343
V/C Ratio(X)	1.04	0.47	0.47	0.86	1.25	0.00	0.62	0.98	1.01	0.72	0.34	0.00
Avail Cap(c_a), veh/h	1406	945	987	280	801	358	213	213	206	840	434	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.6	18.2	18.2	58.7	51.1	0.0	65.6	58.4	58.6	57.6	44.1	0.0
Incr Delay (d2), s/veh	36.5	0.4	0.3	15.0	122.4	0.0	30.0	56.9	65.6	2.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.9	9.9	10.4	6.5	28.3	0.0	0.6	11.0	11.3	4.8	4.3	0.0
LnGrp Delay(d),s/veh	75.1	18.5	18.6	73.7	173.5	0.0	95.7	115.4	124.2	60.3	44.6	0.0
LnGrp LOS	F	B	B	E	F		F	F	F	E	D	
Approach Vol, veh/h		2373			1158			428			400	
Approach Delay, s/veh		53.6			159.9			119.2			54.9	
Approach LOS		D			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	77.2	5.3	32.8	60.0	35.0	16.6	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	13.7	22.8	2.8	10.3	58.0	33.0	11.8	18.0
Green Ext Time (p_c), s	0.2	19.0	0.0	2.8	0.0	0.0	0.8	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	88.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	620	90	120	430	120	100	60	0	0	48	347
Future Volume (veh/h)	179	620	90	120	430	120	100	60	0	0	48	347
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	195	674	84	130	467	117	109	65	0	0	52	95
Adj No. of Lanes	0	2	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1106	138	178	557	129	292	391	0	130	121	222
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.21	0.21	0.00	0.00	0.21	0.21
Sat Flow, veh/h	406	1763	219	160	888	205	1224	1863	0	1331	579	1057
Grp Volume(v), veh/h	322	0	631	714	0	0	109	65	0	0	0	147
Grp Sat Flow(s),veh/h/ln	740	0	1648	1254	0	0	1224	1863	0	1331	0	1636
Q Serve(g_s), s	0.0	0.0	12.8	16.0	0.0	0.0	4.7	1.6	0.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s	16.9	0.0	12.8	28.8	0.0	0.0	9.0	1.6	0.0	0.0	0.0	4.3
Prop In Lane	0.61		0.13	0.18		0.16	1.00		0.00	1.00		0.65
Lane Grp Cap(c), veh/h	569	0	1034	863	0	0	292	391	0	130	0	343
V/C Ratio(X)	0.57	0.00	0.61	0.83	0.00	0.00	0.37	0.17	0.00	0.00	0.00	0.43
Avail Cap(c_a), veh/h	586	0	1059	885	0	0	378	523	0	225	0	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	6.2	9.3	0.0	0.0	22.8	17.9	0.0	0.0	0.0	18.9
Incr Delay (d2), s/veh	1.2	0.0	1.0	6.4	0.0	0.0	0.8	0.2	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	5.9	11.1	0.0	0.0	1.6	0.8	0.0	0.0	0.0	2.0
LnGrp Delay(d),s/veh	7.5	0.0	7.2	15.7	0.0	0.0	23.6	18.1	0.0	0.0	0.0	19.8
LnGrp LOS	A		A	B			C	B				B
Approach Vol, veh/h		953			714			174			147	
Approach Delay, s/veh		7.3			15.7			21.6			19.8	
Approach LOS		A			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.1		39.1		16.1		39.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5
Max Q Clear Time (g_c+I1), s		11.0		18.9		6.3		30.8
Green Ext Time (p_c), s		0.6		11.1		1.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	210	691	220	110	500	1260	814	120	1230	30
Future Volume (veh/h)	40	70	210	691	220	110	500	1260	814	120	1230	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	76	19	706	303	33	543	1370	742	130	1337	31
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	165	137	847	445	372	538	2503	1123	98	1250	29
Arrive On Green	0.09	0.09	0.09	0.24	0.24	0.24	0.30	0.49	0.49	0.06	0.24	0.23
Sat Flow, veh/h	1774	1863	1540	3548	1863	1559	1774	5085	1514	1774	5111	119
Grp Volume(v), veh/h	43	76	19	706	303	33	543	1370	742	130	887	481
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1774	1863	1559	1774	1695	1514	1774	1695	1839
Q Serve(g_s), s	2.9	5.0	1.5	24.2	18.9	2.1	38.8	24.0	33.1	7.1	31.3	31.3
Cycle Q Clear(g_c), s	2.9	5.0	1.5	24.2	18.9	2.1	38.8	24.0	33.1	7.1	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	157	165	137	847	445	372	538	2503	1123	98	829	450
V/C Ratio(X)	0.27	0.46	0.14	0.83	0.68	0.09	1.01	0.55	0.66	1.32	1.07	1.07
Avail Cap(c_a), veh/h	396	416	344	1001	525	440	538	2503	1123	98	829	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	55.4	53.8	46.3	44.3	37.9	44.6	22.6	9.1	60.5	48.3	48.4
Incr Delay (d2), s/veh	0.3	0.7	0.2	4.6	1.9	0.0	41.3	0.9	3.1	199.1	51.6	62.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	0.6	12.4	10.0	0.9	25.1	11.4	26.9	8.9	20.6	23.7
LnGrp Delay(d),s/veh	54.8	56.2	54.0	50.9	46.2	37.9	86.0	23.5	12.2	259.6	100.0	110.7
LnGrp LOS	D	E	D	D	D	D	F	C	B	F	F	F
Approach Vol, veh/h		138			1042			2655			1498	
Approach Delay, s/veh		55.4			49.1			33.1			117.3	
Approach LOS		E			D			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	67.0		15.4	42.8	35.3		34.6
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.0	38.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	9.1	35.1		7.0	40.8	33.3		26.2
Green Ext Time (p_c), s	0.0	1.8		0.2	0.0	0.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	60.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	20	90	60	20	20	210	1642	186	20	1210	631
Future Volume (veh/h)	404	20	90	60	20	20	210	1642	186	20	1210	631
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	439	22	44	65	22	15	228	1785	193	22	1315	0
Adj No. of Lanes	0	1	1	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	459	20	555	45	14	2	150	2414	260	64	2389	0
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.34	0.08	0.52	0.50	0.04	0.47	0.00
Sat Flow, veh/h	1146	57	1570	0	38	7	1774	4658	501	1774	5253	0
Grp Volume(v), veh/h	461	0	44	102	0	0	228	1297	681	22	1315	0
Grp Sat Flow(s),veh/h/ln	1203	0	1570	45	0	0	1774	1695	1770	1774	1695	0
Q Serve(g_s), s	0.0	0.0	2.4	0.0	0.0	0.0	11.0	38.8	39.4	1.6	24.1	0.0
Cycle Q Clear(g_c), s	46.0	0.0	2.4	46.0	0.0	0.0	11.0	38.8	39.4	1.6	24.1	0.0
Prop In Lane	0.95		1.00	0.64		0.15	1.00		0.28	1.00		0.00
Lane Grp Cap(c), veh/h	479	0	555	61	0	0	150	1757	917	64	2389	0
V/C Ratio(X)	0.96	0.00	0.08	1.67	0.00	0.00	1.52	0.74	0.74	0.34	0.55	0.00
Avail Cap(c_a), veh/h	479	0	555	61	0	0	150	2110	1101	150	3165	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.8	0.0	28.0	53.4	0.0	0.0	59.6	24.5	24.9	61.2	24.7	0.0
Incr Delay (d2), s/veh	31.2	0.0	0.0	361.6	0.0	0.0	265.1	0.8	1.7	1.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.7	0.0	1.1	8.3	0.0	0.0	16.4	18.2	19.6	0.8	11.2	0.0
LnGrp Delay(d),s/veh	75.0	0.0	28.0	415.1	0.0	0.0	324.7	25.3	26.5	62.4	24.7	0.0
LnGrp LOS	E		C	F			F	C	C	E	C	
Approach Vol, veh/h		505			102			2206			1337	
Approach Delay, s/veh		70.9			415.1			56.6			25.4	
Approach LOS		E			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	71.4		50.0	15.0	65.1		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	13.6	41.4		48.0	13.0	26.1		48.0
Green Ext Time (p_c), s	0.0	23.5		0.0	0.0	28.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	742	179	30	30	437	130	30	250	40	50	170	703
Future Volume (veh/h)	742	179	30	30	437	130	30	250	40	50	170	703
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1820	1900
Adj Flow Rate, veh/h	807	195	26	33	475	124	33	272	35	54	185	288
Adj No. of Lanes	2	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	954	1523	200	54	657	170	54	769	98	87	437	381
Arrive On Green	0.28	0.48	0.47	0.03	0.24	0.23	0.03	0.24	0.24	0.05	0.25	0.26
Sat Flow, veh/h	3442	3145	414	1774	2764	716	1774	3159	402	1723	1729	1504
Grp Volume(v), veh/h	807	109	112	33	303	296	33	151	156	54	185	288
Grp Sat Flow(s),veh/h/ln	1721	1770	1790	1774	1770	1711	1774	1770	1792	1723	1729	1504
Q Serve(g_s), s	20.9	3.2	3.3	1.7	14.8	15.1	1.7	6.7	6.8	2.9	8.4	16.6
Cycle Q Clear(g_c), s	20.9	3.2	3.3	1.7	14.8	15.1	1.7	6.7	6.8	2.9	8.4	16.6
Prop In Lane	1.00		0.23	1.00		0.42	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	954	857	867	54	421	407	54	431	436	87	437	381
V/C Ratio(X)	0.85	0.13	0.13	0.61	0.72	0.73	0.61	0.35	0.36	0.62	0.42	0.76
Avail Cap(c_a), veh/h	2007	857	867	282	676	653	282	657	665	292	642	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	13.4	13.5	45.1	33.0	33.3	45.1	29.5	29.6	43.9	29.5	32.1
Incr Delay (d2), s/veh	2.2	0.1	0.1	10.4	2.3	2.5	10.4	0.5	0.5	6.9	0.7	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	1.6	1.6	1.0	7.5	7.4	1.0	3.3	3.4	1.5	4.1	7.2
LnGrp Delay(d),s/veh	34.4	13.4	13.5	55.5	35.4	35.8	55.5	30.0	30.0	50.8	30.1	35.5
LnGrp LOS	C	B	B	E	D	D	E	C	C	D	C	D
Approach Vol, veh/h		1028			632			340			527	
Approach Delay, s/veh		29.9			36.6			32.5			35.2	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	28.0	7.9	49.7	7.9	28.8	31.1	26.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	4.9	8.8	3.7	5.3	3.7	18.6	22.9	17.1
Green Ext Time (p_c), s	0.1	4.9	0.0	5.4	0.0	4.2	3.3	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	640	330	350	800	320	300	365	730	280	254	574
Future Volume (veh/h)	545	640	330	350	800	320	300	365	730	280	254	574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	586	688	313	376	860	0	323	392	567	301	273	0
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	377	631	287	434	988	442	358	558	498	307	519	0
Arrive On Green	0.11	0.27	0.26	0.13	0.29	0.00	0.20	0.32	0.31	0.18	0.29	0.00
Sat Flow, veh/h	3442	2364	1075	3343	3438	1538	1774	1770	1580	1723	1810	0
Grp Volume(v), veh/h	586	515	486	376	860	0	323	392	567	301	273	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1670	1672	1719	1538	1774	1770	1580	1723	1810	0
Q Serve(g_s), s	16.0	39.0	39.0	16.1	34.7	0.0	25.9	28.4	46.0	25.4	18.5	0.0
Cycle Q Clear(g_c), s	16.0	39.0	39.0	16.1	34.7	0.0	25.9	28.4	46.0	25.4	18.5	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	377	473	446	434	988	442	358	558	498	307	519	0
V/C Ratio(X)	1.55	1.09	1.09	0.87	0.87	0.00	0.90	0.70	1.14	0.98	0.53	0.00
Avail Cap(c_a), veh/h	377	473	446	596	1084	485	377	558	498	307	519	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.0	53.5	53.7	62.2	49.4	0.0	56.8	43.9	50.4	59.7	43.7	0.0
Incr Delay (d2), s/veh	261.6	67.9	69.1	7.6	9.6	0.0	22.5	6.4	84.2	45.7	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	27.9	26.5	7.9	17.8	0.0	15.0	14.9	31.7	16.0	9.7	0.0
LnGrp Delay(d),s/veh	326.5	121.4	122.8	69.8	59.0	0.0	79.4	50.3	134.6	105.4	46.7	0.0
LnGrp LOS	F	F	F	E	E		E	D	F	F	D	
Approach Vol, veh/h		1587			1236			1282			574	
Approach Delay, s/veh		197.6			62.3			94.9			77.5	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	43.0	33.5	46.5	20.0	45.9	30.0	50.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	18.1	41.0	27.9	20.5	18.0	36.7	27.4	48.0
Green Ext Time (p_c), s	0.2	0.0	0.0	2.6	0.0	4.4	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		119.0
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	440	220	581	500	160	390	690	491	240	690	200
Future Volume (veh/h)	370	440	220	581	500	160	390	690	491	240	690	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	402	478	118	632	543	152	424	750	237	261	750	201
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	472	680	304	703	707	197	500	1019	455	294	847	227
Arrive On Green	0.14	0.20	0.20	0.21	0.27	0.26	0.15	0.29	0.29	0.17	0.31	0.30
Sat Flow, veh/h	3343	3438	1538	3343	2647	738	3442	3539	1580	1774	2749	737
Grp Volume(v), veh/h	402	478	118	632	352	343	424	750	237	261	483	468
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1665	1721	1770	1580	1774	1770	1716
Q Serve(g_s), s	13.6	15.0	7.7	21.3	21.8	22.0	13.9	22.1	14.5	16.6	30.0	30.0
Cycle Q Clear(g_c), s	13.6	15.0	7.7	21.3	21.8	22.0	13.9	22.1	14.5	16.6	30.0	30.0
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	472	680	304	703	459	445	500	1019	455	294	545	528
V/C Ratio(X)	0.85	0.70	0.39	0.90	0.77	0.77	0.85	0.74	0.52	0.89	0.89	0.89
Avail Cap(c_a), veh/h	608	1071	479	897	610	591	923	1103	492	476	551	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	43.2	40.3	44.4	39.0	39.4	48.1	37.2	34.5	47.2	38.0	38.3
Incr Delay (d2), s/veh	8.4	0.5	0.3	8.7	2.8	3.0	1.6	2.4	0.9	7.3	15.8	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	7.2	3.3	10.7	10.7	10.5	6.7	11.2	6.5	8.7	17.0	16.6
LnGrp Delay(d),s/veh	56.9	43.7	40.6	53.1	41.8	42.4	49.7	39.6	35.4	54.4	53.8	54.5
LnGrp LOS	E	D	D	D	D	D	D	D	D	D	D	D
Approach Vol, veh/h		998			1327			1411			1212	
Approach Delay, s/veh		48.6			47.4			41.9			54.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	37.3	28.3	26.9	20.8	39.6	20.3	34.9
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	18.6	24.1	23.3	17.0	15.9	32.0	15.6	24.0
Green Ext Time (p_c), s	0.3	7.7	0.8	4.3	0.7	2.3	0.5	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.7
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	70	70	180	50	0	0	0	0	176	0	20
Future Vol, veh/h	10	70	70	180	50	0	0	0	0	176	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	76	76	196	54	0	0	0	0	191	0	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	54	0	0	76	0	0				544	544	54
Stage 1	-	-	-	-	-	-				446	446	-
Stage 2	-	-	-	-	-	-				98	98	-
Critical Hdwy	4.12	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1523	-	0				500	446	1013
Stage 1	-	-	-	-	-	0				645	574	-
Stage 2	-	-	-	-	-	0				926	814	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1551	-	-	1523	-	-				432	0	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-				432	0	-
Stage 1	-	-	-	-	-	-				562	0	-
Stage 2	-	-	-	-	-	-				919	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	6	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	1551	-	-	1523	-	432	1013
HCM Lane V/C Ratio	0.007	-	-	0.128	-	0.443	0.021
HCM Control Delay (s)	7.3	-	-	7.7	-	19.8	8.6
HCM Lane LOS	A	-	-	A	-	C	A
HCM 95th %tile Q(veh)	0	-	-	0.4	-	2.2	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	196	0	0	140	429	90	0	70	0	0	0
Future Vol, veh/h	50	196	0	0	140	429	90	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	213	0	0	152	466	98	0	76	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	152	0	-	-	-	0	474	474	213
Stage 1	-	-	-	-	-	-	322	322	-
Stage 2	-	-	-	-	-	-	152	152	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1429	-	0	0	-	-	549	489	827
Stage 1	-	-	0	0	-	-	735	651	-
Stage 2	-	-	0	0	-	-	876	772	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1429	-	-	-	-	-	528	0	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	0	-
Stage 1	-	-	-	-	-	-	707	0	-
Stage 2	-	-	-	-	-	-	876	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.5	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	528	827	1429	-	-	-
HCM Lane V/C Ratio	0.185	0.092	0.038	-	-	-
HCM Control Delay (s)	13.4	9.8	7.6	-	-	-
HCM Lane LOS	B	A	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.3	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	282	0	0	180	401	10	10	130	0	0	0
Future Vol, veh/h	10	282	0	0	180	401	10	10	130	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	307	0	0	196	436	11	11	141	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10	14.4	10.9
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	130	10	141	141	180	401
LT Vol	10	0	10	0	0	0	0
Through Vol	10	0	0	141	141	180	0
RT Vol	0	130	0	0	0	0	401
Lane Flow Rate	22	141	11	153	153	196	436
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.043	0.244	0.021	0.272	0.197	0.316	0.618
Departure Headway (Hd)	7.167	6.21	6.887	6.381	4.627	5.81	5.104
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	499	577	519	562	772	618	706
Service Time	4.92	3.962	4.632	4.126	2.371	3.545	2.839
HCM Lane V/C Ratio	0.044	0.244	0.021	0.272	0.198	0.317	0.618
HCM Control Delay	10.2	11	9.8	11.5	8.5	11.2	15.8
HCM Lane LOS	B	B	A	B	A	B	C
HCM 95th-tile Q	0.1	1	0.1	1.1	0.7	1.4	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	372	0	0	0	501	50	0	0	100	80
Future Volume (veh/h)	40	0	372	0	0	0	501	50	0	0	100	80
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	43	0	200				545	54	0	0	109	19
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	269	0	240				624	1171	0	0	310	262
Arrive On Green	0.15	0.00	0.15				0.35	0.63	0.00	0.00	0.17	0.17
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1574
Grp Volume(v), veh/h	43	0	200				545	54	0	0	109	19
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1574
Q Serve(g_s), s	0.8	0.0	4.5				10.5	0.4	0.0	0.0	1.9	0.4
Cycle Q Clear(g_c), s	0.8	0.0	4.5				10.5	0.4	0.0	0.0	1.9	0.4
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	269	0	240				624	1171	0	0	310	262
V/C Ratio(X)	0.16	0.00	0.83				0.87	0.05	0.00	0.00	0.35	0.07
Avail Cap(c_a), veh/h	1169	0	1043				984	3084	0	0	3084	2606
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	15.0				11.0	2.6	0.0	0.0	13.4	12.8
Incr Delay (d2), s/veh	0.1	0.0	2.9				3.3	0.0	0.0	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.9				5.6	0.2	0.0	0.0	1.0	0.2
LnGrp Delay(d),s/veh	13.5	0.0	17.8				14.4	2.6	0.0	0.0	14.2	12.9
LnGrp LOS	B		B				B	A			B	B
Approach Vol, veh/h		243						599			128	
Approach Delay, s/veh		17.1						13.3			14.0	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.9		9.5	16.8	10.1		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.4		6.5	12.5	3.9		
Green Ext Time (p_c), s		1.5		0.1	0.2	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	275	10	0	10	20	10	20	54	10	10	40	307
Future Vol, veh/h	275	10	0	10	20	10	20	54	10	10	40	307
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	299	11	0	11	22	11	22	59	11	11	43	334
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.9	8.9	9.3	11.8
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	96%	25%	3%
Vol Thru, %	64%	4%	50%	11%
Vol Right, %	12%	0%	25%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	285	40	357
LT Vol	20	275	10	10
Through Vol	54	10	20	40
RT Vol	10	0	10	307
Lane Flow Rate	91	310	43	388
Geometry Grp	1	1	1	1
Degree of Util (X)	0.138	0.462	0.067	0.484
Departure Headway (Hd)	5.431	5.373	5.529	4.491
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	672	650	792
Service Time	3.455	3.381	3.546	2.585
HCM Lane V/C Ratio	0.138	0.461	0.066	0.49
HCM Control Delay	9.3	12.9	8.9	11.8
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.5	2.4	0.2	2.7

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	164	30	167	140	10	30	10	201	10	10	10
Future Vol, veh/h	10	164	30	167	140	10	30	10	201	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	178	33	182	152	11	33	11	218	11	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	211	0	0	748	742	195	852	754	158
Stage 1	-	-	-	-	-	-	216	216	-	521	521	-
Stage 2	-	-	-	-	-	-	532	526	-	331	233	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1416	-	-	1360	-	-	329	344	846	280	338	887
Stage 1	-	-	-	-	-	-	786	724	-	539	532	-
Stage 2	-	-	-	-	-	-	531	529	-	682	712	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1416	-	-	1360	-	-	278	291	846	178	286	887
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	291	-	178	286	-
Stage 1	-	-	-	-	-	-	779	717	-	534	454	-
Stage 2	-	-	-	-	-	-	437	451	-	494	706	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	4.2	14.6	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	634	1416	-	-	1360	-	-	433
HCM Lane V/C Ratio	0.413	0.008	-	-	0.133	-	-	0.05
HCM Control Delay (s)	14.6	7.6	0	-	8.1	0	-	13.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2	0	-	-	0.5	-	-	0.2

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	190	211	64	120	177
Future Vol, veh/h	50	190	211	64	120	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	207	229	70	130	192

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	264	0	0	299	0
Stage 1	264	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	396	775	-	-	1262	-
Stage 1	780	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	350	775	-	-	1262	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	3.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	1262	-
HCM Lane V/C Ratio	-	-	0.421	0.103	-
HCM Control Delay (s)	-	-	15	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.1	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	156	210	170	281	377	220	134	160	244	129	100
Future Volume (veh/h)	30	156	210	170	281	377	220	134	160	244	129	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	33	170	53	185	305	245	239	146	34	265	140	18
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	808	362	416	894	400	560	569	129	473	606	271
Arrive On Green	0.08	0.23	0.23	0.12	0.25	0.25	0.16	0.20	0.18	0.14	0.17	0.17
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	2867	651	3442	3539	1583
Grp Volume(v), veh/h	33	170	53	185	305	245	239	89	91	265	140	18
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1748	1721	1770	1583
Q Serve(g_s), s	0.5	2.0	1.4	2.5	3.6	7.0	3.2	2.1	2.3	3.7	1.7	0.5
Cycle Q Clear(g_c), s	0.5	2.0	1.4	2.5	3.6	7.0	3.2	2.1	2.3	3.7	1.7	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	278	808	362	416	894	400	560	351	347	473	606	271
V/C Ratio(X)	0.12	0.21	0.15	0.45	0.34	0.61	0.43	0.25	0.26	0.56	0.23	0.07
Avail Cap(c_a), veh/h	1084	3623	1621	1084	3623	1621	1287	1638	1617	1287	3275	1465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	15.9	15.6	20.7	15.5	16.8	19.1	17.2	17.3	20.5	18.2	17.6
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.3	0.1	0.9	0.2	0.6	0.6	0.4	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.0	0.6	1.2	1.8	3.1	1.5	1.1	1.2	1.8	0.9	0.2
LnGrp Delay(d),s/veh	21.7	16.0	15.9	21.0	15.7	17.7	19.3	17.8	18.0	20.9	18.5	17.8
LnGrp LOS	C	B	B	C	B	B	B	B	B	C	B	B
Approach Vol, veh/h		256			735			419			423	
Approach Delay, s/veh		16.7			17.7			18.7			19.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	15.6	12.3	12.8	8.1	17.6	11.0	14.1
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46
Max Q Clear Time (g_c+I1), s	4.5	4.0	5.2	3.7	2.5	9.0	5.7	4.3
Green Ext Time (p_c), s	0.1	3.4	0.1	3.3	0.0	3.4	0.2	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	600	100	62	738	427	80	140	88	288	120	30
Future Volume (veh/h)	90	600	100	62	738	427	80	140	88	288	120	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.94	0.96		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	98	652	50	67	802	461	87	152	53	313	130	29
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1458	632	78	849	484	272	455	638	343	119	27
Arrive On Green	0.06	0.41	0.41	0.04	0.39	0.39	0.43	0.43	0.43	0.43	0.43	0.42
Sat Flow, veh/h	1774	3539	1533	1774	2172	1238	528	1066	1494	665	276	62
Grp Volume(v), veh/h	98	652	50	67	652	611	239	0	53	472	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1533	1774	1770	1641	1594	0	1494	1002	0	0
Q Serve(g_s), s	5.8	14.2	2.1	4.0	37.9	38.5	0.0	0.0	2.2	35.8	0.0	0.0
Cycle Q Clear(g_c), s	5.8	14.2	2.1	4.0	37.9	38.5	10.2	0.0	2.2	46.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.75	0.36		1.00	0.66		0.06
Lane Grp Cap(c), veh/h	115	1458	632	78	692	641	727	0	638	489	0	0
V/C Ratio(X)	0.85	0.45	0.08	0.86	0.94	0.95	0.33	0.00	0.08	0.97	0.00	0.00
Avail Cap(c_a), veh/h	333	1458	632	333	697	646	734	0	645	489	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.3	22.6	19.1	50.6	31.3	31.7	20.3	0.0	18.1	36.9	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.3	0.1	9.7	21.2	24.3	0.1	0.0	0.0	31.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	6.9	0.9	2.2	22.6	21.8	4.7	0.0	0.9	18.1	0.0	0.0
LnGrp Delay(d),s/veh	55.8	22.9	19.1	60.4	52.5	56.0	20.4	0.0	18.2	68.7	0.0	0.0
LnGrp LOS	E	C	B	E	D	E	C		B	E		
Approach Vol, veh/h		800			1330			292			472	
Approach Delay, s/veh		26.7			54.5			20.0			68.7	
Approach LOS		C			D			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	47.9		50.0	10.9	45.7		50.0
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46
Max Q Clear Time (g_c+I1), s	6.0	16.2		48.0	7.8	40.5		12.2
Green Ext Time (p_c), s	0.0	17.1		0.0	0.0	0.5		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		45.6
HCM 2010 LOS		D

Notes

Intersection	
Intersection Delay, s/veh	23.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	58	10	320	42	67	10	187	360	80	250	10
Future Vol, veh/h	30	58	10	320	42	67	10	187	360	80	250	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	63	11	348	46	73	11	203	391	87	272	11
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	14.9	29.8	23.1	16.9
HCM LOS	B	D	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	31%	100%	0%	39%	0%
Vol Thru, %	95%	0%	59%	0%	39%	61%	93%
Vol Right, %	0%	100%	10%	0%	61%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	360	98	320	109	205	135
LT Vol	10	0	30	320	0	80	0
Through Vol	187	0	58	0	42	125	125
RT Vol	0	360	10	0	67	0	10
Lane Flow Rate	214	391	107	348	118	223	147
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.45	0.741	0.259	0.792	0.238	0.499	0.318
Departure Headway (Hd)	7.562	6.816	8.76	8.197	7.243	8.066	7.811
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	528	409	442	495	446	459
Service Time	5.324	4.576	6.846	5.957	5.002	5.836	5.58
HCM Lane V/C Ratio	0.451	0.741	0.262	0.787	0.238	0.5	0.32
HCM Control Delay	16.4	26.7	14.9	35.8	12.3	18.7	14.2
HCM Lane LOS	C	D	B	E	B	C	B
HCM 95th-tile Q	2.3	6.3	1	7	0.9	2.7	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	347	228	48	464	9	242	398	43	10	570	260
Future Volume (veh/h)	270	347	228	48	464	9	242	398	43	10	570	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	377	78	52	504	10	263	433	47	11	620	193
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	1125	491	67	651	281	292	1771	776	11	637	528
Arrive On Green	0.18	0.32	0.32	0.04	0.18	0.18	0.16	0.50	0.50	0.01	0.34	0.34
Sat Flow, veh/h	1774	3539	1544	1774	3539	1530	1774	3539	1552	1774	1863	1546
Grp Volume(v), veh/h	293	377	78	52	504	10	263	433	47	11	620	193
Grp Sat Flow(s),veh/h/ln	1774	1770	1544	1774	1770	1530	1774	1770	1552	1774	1863	1546
Q Serve(g_s), s	19.5	9.8	4.4	3.5	16.3	0.6	17.4	8.4	1.9	0.7	39.4	11.3
Cycle Q Clear(g_c), s	19.5	9.8	4.4	3.5	16.3	0.6	17.4	8.4	1.9	0.7	39.4	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1125	491	67	651	281	292	1771	776	11	637	528
V/C Ratio(X)	0.94	0.34	0.16	0.77	0.77	0.04	0.90	0.24	0.06	1.02	0.97	0.37
Avail Cap(c_a), veh/h	444	1210	528	237	797	344	533	2096	919	89	637	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	31.2	29.4	57.2	46.6	40.2	49.1	17.1	15.4	59.6	38.9	29.7
Incr Delay (d2), s/veh	19.2	0.1	0.1	16.7	3.9	0.1	4.1	0.2	0.1	83.7	29.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	4.8	1.9	2.0	8.3	0.3	8.9	4.1	0.8	0.6	25.3	4.9
LnGrp Delay(d),s/veh	67.9	31.3	29.4	73.9	50.4	40.2	53.2	17.3	15.5	143.5	67.9	30.1
LnGrp LOS	E	C	C	E	D	D	D	B	B	F	E	C
Approach Vol, veh/h		748			566			743			824	
Approach Delay, s/veh		45.4			52.4			29.9			60.1	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	64.0	8.6	42.6	23.7	45.0	25.1	26.0
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	30.5	27.0
Max Q Clear Time (g_c+I1), s	2.7	10.4	5.5	11.8	19.4	41.4	21.5	18.3
Green Ext Time (p_c), s	0.0	17.1	0.1	4.4	0.1	0.0	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	312	385	222	200	40
Future Vol, veh/h	60	312	385	222	200	40
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	339	418	241	217	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1185	227	217	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	195	812	1351	-	-	0
Stage 1	818	-	-	-	-	0
Stage 2	330	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	134	805	1340	-	-	-
Mov Cap-2 Maneuver	134	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	227	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	5.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1340	-	831	-
HCM Lane V/C Ratio	0.312	-	0.487	-
HCM Control Delay (s)	8.9	-	13.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	1.3	-	2.7	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	194	234	149	264	20	209	356	76	10	172	20
Future Vol, veh/h	21	194	234	149	264	20	209	356	76	10	172	20
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	211	254	162	287	22	227	387	83	11	187	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1031	1164	124	1124	1133	255	219	0	0	480	0	0
Stage 1	230	230	-	893	893	-	-	-	-	-	-	-
Stage 2	801	934	-	231	240	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	187	~ 193	904	~ 160	~ 202	744	1348	-	-	1079	-	-
Stage 1	752	713	-	303	358	-	-	-	-	-	-	-
Stage 2	344	343	-	751	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 144	889	-	~ 151	732	1337	-	-	1070	-	-
Mov Cap-2 Maneuver	-	~ 144	-	-	~ 151	-	-	-	-	-	-	-
Stage 1	572	699	-	230	~ 272	-	-	-	-	-	-	-
Stage 2	-	261	-	367	692	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2.9	0.4
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	-	353	-	169	1070	-	-
HCM Lane V/C Ratio	0.17	-	-	-	1.019	-	0.978	0.01	-	-
HCM Control Delay (s)	8.2	0.4	-	-	88.1	-	118.2	8.4	0	-
HCM Lane LOS	A	A	-	-	F	-	F	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	-	12	-	7.6	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	100.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	28	210	75	32	7	90	566	147	10	736	20
Future Vol, veh/h	20	28	210	75	32	7	90	566	147	10	736	20
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	30	228	82	35	8	98	615	160	11	800	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1374	1814	431	1338	1744	398	832	0	0	775	0	0
Stage 1	843	843	-	891	891	-	-	-	-	-	-	-
Stage 2	531	971	-	447	853	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	105	77	573	111	86	601	796	-	-	837	-	-
Stage 1	325	378	-	304	359	-	-	-	-	-	-	-
Stage 2	500	329	-	560	374	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	58	563	~ 32	65	596	789	-	-	830	-	-
Mov Cap-2 Maneuver	49	58	-	~ 32	65	-	-	-	-	-	-	-
Stage 1	250	366	-	236	278	-	-	-	-	-	-	-
Stage 2	332	255	-	295	362	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	241.2	$ 1157.1	1.8	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	789	-	-	204	40	830	-	-
HCM Lane V/C Ratio	0.124	-	-	1.375	3.098	0.013	-	-
HCM Control Delay (s)	10.2	0.9	-	241.2	$ 1157.1	9.4	-	-
HCM Lane LOS	B	A	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	16.1	13.8	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	253	110	0	635	1125	0	0	0	501	10	170
Future Volume (veh/h)	0	253	110	0	635	1125	0	0	0	501	10	170
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	275	0	0	690	0				553	0	60
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2152	0	0	1498	670				1112	0	496
Arrive On Green	0.00	0.44	0.00	0.00	0.44	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	275	0	0	690	0				553	0	60
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	1.1	0.0	0.0	4.5	0.0				4.0	0.0	0.9
Cycle Q Clear(g_c), s	0.0	1.1	0.0	0.0	4.5	0.0				4.0	0.0	0.9
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2152	0	0	1498	670				1112	0	496
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.46	0.00				0.50	0.00	0.12
Avail Cap(c_a), veh/h	0	9453	0	0	6579	2943				3451	0	1540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.4	0.0	0.0	6.3	0.0				8.9	0.0	7.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.0	0.0	2.1	0.0				1.9	0.0	0.4
LnGrp Delay(d),s/veh	0.0	5.4	0.0	0.0	6.4	0.0				9.0	0.0	7.9
LnGrp LOS		A			A					A		A
Approach Vol, veh/h		275			690						613	
Approach Delay, s/veh		5.4			6.4						8.9	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		17.9		14.0		17.9		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		3.1		6.0		6.5		
Green Ext Time (p_c), s		4.3		1.2		4.3		

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	694	50	1	1610	551	150	0	714	0	0	0
Future Volume (vph)	10	694	50	1	1610	551	150	0	714	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		6.8	4.0			4.0	4.0			
Lane Util. Factor		0.91		1.00	0.91			1.00	0.88			
Frpb, ped/bikes		1.00		1.00	0.99			1.00	1.00			
Flpb, ped/bikes		1.00		1.00	1.00			1.00	1.00			
Frt		0.99		1.00	0.96			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (prot)		4883		1719	4711			1770	2787			
Flt Permitted		0.87		0.95	1.00			0.95	1.00			
Satd. Flow (perm)		4268		1719	4711			1770	2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	754	54	1	1750	599	163	0	776	0	0	0
RTOR Reduction (vph)	0	7	0	0	95	0	0	0	105	0	0	0
Lane Group Flow (vph)	0	812	0	1	2254	0	0	163	671	0	0	0
Confl. Peds. (#/hr)			4			4						
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Prot	NA		Split	NA	pt+ov			
Protected Phases		2		1	6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		26.9		6.9	40.6			11.0	24.7			
Effective Green, g (s)		29.7		6.9	43.4			13.8	27.5			
Actuated g/C Ratio		0.46		0.11	0.67			0.21	0.42			
Clearance Time (s)		6.8		6.8	6.8			6.8				
Vehicle Extension (s)		2.0		2.0	2.0			2.0				
Lane Grp Cap (vph)		1944		181	3135			374	1175			
v/s Ratio Prot				0.00	c0.48			0.09	c0.24			
v/s Ratio Perm		0.19										
v/c Ratio		0.42		0.01	0.72			0.44	0.57			
Uniform Delay, d1		11.9		26.1	7.0			22.3	14.4			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.1		0.0	0.7			0.3	0.4			
Delay (s)		12.0		26.1	7.7			22.6	14.8			
Level of Service		B		C	A			C	B			
Approach Delay (s)		12.0			7.7			16.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	14.8
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	849	190	30	1281	384	270	340	20	199	260	510
Future Volume (veh/h)	240	849	190	30	1281	384	270	340	20	199	260	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	261	923	66	33	1392	358	293	370	0	216	283	433
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	257	1105	495	239	1518	389	335	871	390	295	1116	497
Arrive On Green	0.08	0.32	0.32	0.14	0.39	0.38	0.10	0.25	0.00	0.17	0.32	0.32
Sat Flow, veh/h	3343	3438	1538	1723	3918	1004	3442	3539	1583	1774	3539	1576
Grp Volume(v), veh/h	261	923	66	33	1169	581	293	370	0	216	283	433
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1629	1721	1770	1583	1774	1770	1576
Q Serve(g_s), s	10.0	32.4	4.0	2.2	43.9	44.2	10.9	11.4	0.0	15.0	7.7	25.8
Cycle Q Clear(g_c), s	10.0	32.4	4.0	2.2	43.9	44.2	10.9	11.4	0.0	15.0	7.7	25.8
Prop In Lane	1.00		1.00	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	1105	495	239	1276	631	335	871	390	295	1116	497
V/C Ratio(X)	1.01	0.84	0.13	0.14	0.92	0.92	0.88	0.42	0.00	0.73	0.25	0.87
Avail Cap(c_a), veh/h	257	1428	639	239	1292	639	335	871	390	295	1116	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	40.9	31.3	49.1	37.8	38.4	57.9	41.3	0.0	51.4	33.1	24.5
Incr Delay (d2), s/veh	55.6	3.0	0.1	0.3	10.4	18.6	21.9	1.5	0.0	8.9	0.5	18.6
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	15.8	1.7	1.1	21.8	23.1	6.2	5.8	0.0	8.1	3.9	13.7
LnGrp Delay(d),s/veh	115.7	43.9	31.4	49.4	48.2	57.0	79.8	42.8	0.0	60.4	33.7	43.1
LnGrp LOS	F	D	C	D	D	E	E	D		E	C	D
Approach Vol, veh/h		1250			1783			663			932	
Approach Delay, s/veh		58.2			51.1			59.1			44.2	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.6	36.0	22.6	45.8	16.6	45.0	14.0	54.4
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	20.0	30.5	6.0	* 53	11.0	39.5	9.0	49.5
Max Q Clear Time (g_c+I1), s	17.0	13.4	4.2	34.4	12.9	27.8	12.0	46.2
Green Ext Time (p_c), s	0.6	2.1	1.5	5.9	0.0	2.7	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	20	20	525	20	30	20	420	569	20	330	20
Future Volume (veh/h)	20	20	20	525	20	30	20	420	569	20	330	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	22	2	587	0	0	22	457	0	22	359	20
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	52	89	878	0	392	60	1324	592	60	1844	102
Arrive On Green	0.06	0.06	0.06	0.25	0.00	0.00	0.03	0.37	0.00	0.03	0.37	0.35
Sat Flow, veh/h	909	909	1567	3548	0	1583	1774	3539	1583	1774	4932	272
Grp Volume(v), veh/h	44	0	2	587	0	0	22	457	0	22	246	133
Grp Sat Flow(s),veh/h/ln	1817	0	1567	1774	0	1583	1774	1770	1583	1774	1695	1813
Q Serve(g_s), s	1.3	0.0	0.1	8.3	0.0	0.0	0.7	5.2	0.0	0.7	2.7	2.8
Cycle Q Clear(g_c), s	1.3	0.0	0.1	8.3	0.0	0.0	0.7	5.2	0.0	0.7	2.7	2.8
Prop In Lane	0.50		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	103	0	89	878	0	392	60	1324	592	60	1268	678
V/C Ratio(X)	0.43	0.00	0.02	0.67	0.00	0.00	0.37	0.35	0.00	0.37	0.19	0.20
Avail Cap(c_a), veh/h	1014	0	874	2618	0	1168	990	2962	1325	990	2837	1518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	24.7	18.8	0.0	0.0	26.3	12.5	0.0	26.3	11.7	11.8
Incr Delay (d2), s/veh	2.7	0.0	0.1	0.9	0.0	0.0	3.8	0.3	0.0	3.8	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	4.2	0.0	0.0	0.4	2.5	0.0	0.4	1.3	1.4
LnGrp Delay(d),s/veh	28.1	0.0	24.8	19.7	0.0	0.0	30.1	12.8	0.0	30.1	11.9	12.1
LnGrp LOS	C		C	B			C	B		C	B	B
Approach Vol, veh/h		46			587			479			401	
Approach Delay, s/veh		27.9			19.7			13.6			13.0	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.9	24.8		17.8	5.9	24.8		7.2
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	2.7	7.2		10.3	2.7	4.8		3.3
Green Ext Time (p_c), s	0.0	12.1		2.1	0.0	12.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	927	50	212	1135	414	70	400	159	478	343	380
Future Volume (veh/h)	130	927	50	212	1135	414	70	400	159	478	343	380
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	1008	49	230	1234	198	76	435	141	520	373	258
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	300	1235	60	283	1805	549	181	847	368	628	1307	571
Arrive On Green	0.09	0.37	0.35	0.08	0.37	0.37	0.05	0.24	0.24	0.18	0.37	0.37
Sat Flow, veh/h	3343	3333	162	3343	4940	1503	3442	3539	1538	3442	3539	1547
Grp Volume(v), veh/h	141	520	537	230	1234	198	76	435	141	520	373	258
Grp Sat Flow(s),veh/h/ln	1672	1719	1776	1672	1647	1503	1721	1770	1538	1721	1770	1547
Q Serve(g_s), s	5.2	35.5	35.5	8.8	27.5	7.1	2.8	13.9	10.0	18.9	9.7	16.4
Cycle Q Clear(g_c), s	5.2	35.5	35.5	8.8	27.5	7.1	2.8	13.9	10.0	18.9	9.7	16.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	637	658	283	1805	549	181	847	368	628	1307	571
V/C Ratio(X)	0.47	0.82	0.82	0.81	0.68	0.36	0.42	0.51	0.38	0.83	0.29	0.45
Avail Cap(c_a), veh/h	300	637	658	283	1805	549	188	847	368	635	1307	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	36.9	37.0	58.5	34.9	9.6	59.7	42.9	41.4	51.2	28.9	31.0
Incr Delay (d2), s/veh	0.4	11.1	10.8	15.3	2.1	1.8	0.6	2.2	3.0	8.3	0.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	18.7	19.4	4.7	12.8	3.2	1.3	7.0	4.5	9.7	4.8	7.4
LnGrp Delay(d),s/veh	56.7	48.0	47.8	73.8	37.0	11.4	60.2	45.1	44.4	59.4	29.5	33.6
LnGrp LOS	E	D	D	E	D	B	E	D	D	E	C	C
Approach Vol, veh/h		1198			1662			652			1151	
Approach Delay, s/veh		48.9			39.1			46.7			43.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	51.5	27.7	35.1	15.0	52.2	10.8	52.0
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.1	6.8
Max Green Setting (Gmax), s	8.6	45.4	21.2	29.0	8.9	45.1	5.0	45.2
Max Q Clear Time (g_c+I1), s	7.2	29.5	20.9	15.9	10.8	37.5	4.8	18.4
Green Ext Time (p_c), s	0.5	3.0	0.0	0.9	0.0	1.6	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	239	0.0	0.488	16.6	LOS C	3.1	76.8	0.85	0.97	24.2
8	T1	276	0.0	0.597	15.7	LOS C	5.0	124.7	0.90	1.09	21.5
18	R2	134	0.0	0.597	15.7	LOS C	5.0	124.7	0.90	1.09	31.8
Approach		649	0.0	0.597	16.0	LOS C	5.0	124.7	0.89	1.05	24.8
East: WB Boronda Rd											
1	L2	215	1.2	0.879	30.7	LOS D	17.3	436.7	0.99	1.62	23.2
6	T1	1553	1.2	0.879	26.7	LOS D	20.2	510.9	0.98	1.60	27.2
16	R2	190	6.3	0.169	4.7	LOS A	1.1	28.9	0.66	0.50	33.2
Approach		1959	1.7	0.879	25.0	LOS C	20.2	510.9	0.95	1.50	27.3
North: SB McKinnon St											
7	L2	223	0.0	0.371	11.3	LOS B	2.8	69.0	1.00	1.02	31.4
4	T1	161	1.8	0.440	19.3	LOS C	2.7	68.3	0.91	1.01	24.1
14	R2	285	1.1	0.440	12.2	LOS B	3.5	88.7	0.99	1.06	28.9
Approach		668	0.9	0.440	13.6	LOS B	3.5	88.7	0.97	1.03	29.1
West: EB Boronda Rd											
5	L2	387	0.0	0.620	12.2	LOS B	5.7	143.5	0.67	0.80	29.0
2	T1	1074	0.0	0.620	10.6	LOS B	6.1	152.4	0.64	0.72	33.0
12	R2	261	0.0	0.182	4.0	LOS A	1.0	24.6	0.43	0.29	29.8
Approach		1722	0.0	0.620	9.9	LOS A	6.1	152.4	0.62	0.67	31.9
All Vehicles		4998	0.8	0.879	17.1	LOS C	20.2	510.9	0.83	1.09	28.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	207	0.0	0.228	6.3	LOS A	1.4	35.3	0.82	0.78	34.5
8	T1	124	0.0	0.204	8.5	LOS A	1.1	26.3	0.79	0.79	34.1
18	R2	199	0.0	0.198	5.5	LOS A	1.1	28.2	0.75	0.70	35.7
Approach		529	0.0	0.228	6.5	LOS A	1.4	35.3	0.79	0.75	34.9
East: WB Baronda Rd											
1	L2	204	0.0	0.920	33.2	LOS D	26.7	670.1	1.00	1.69	27.9
6	T1	1618	0.9	0.920	31.7	LOS D	28.4	715.7	0.99	1.66	29.8
16	R2	117	0.0	0.920	30.5	LOS D	28.4	715.7	0.99	1.64	27.5
Approach		1940	0.8	0.920	31.8	LOS D	28.4	715.7	0.99	1.66	29.5
North: SB El Dorado Dr (Future)											
7	L2	148	0.0	0.284	11.1	LOS B	2.1	53.6	1.00	0.98	32.2
4	T1	139	0.0	0.448	22.9	LOS C	2.8	70.0	0.93	1.02	28.6
14	R2	98	0.0	0.151	7.3	LOS A	1.0	25.7	0.94	0.87	34.8
Approach		385	0.0	0.448	14.4	LOS B	2.8	70.0	0.96	0.97	31.6
West: EB Boronda Rd											
5u	U	63	0.0	0.690	15.0	LOS B	8.9	224.2	0.78	0.96	34.4
5	L2	91	0.0	0.690	15.0	LOS B	8.9	224.2	0.78	0.96	32.5
2	T1	1167	2.0	0.690	14.3	LOS B	9.2	232.7	0.77	0.93	34.1
12	R2	109	0.0	0.690	13.6	LOS B	9.2	232.7	0.76	0.90	33.1
Approach		1430	1.6	0.690	14.3	LOS B	9.2	232.7	0.77	0.93	33.9
All Vehicles		4285	0.9	0.920	21.2	LOS C	28.4	715.7	0.89	1.24	31.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU + WASP + CASP AM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
Movement Performance - Vehicles											
South: NB Natividad Rd											
3	L2	245	0.0	0.448	14.1	LOS B	2.1	52.3	0.79	0.86	31.5
8	T1	608	1.6	0.484	13.4	LOS B	2.7	69.4	0.80	0.87	30.2
18	R2	410	0.0	0.245	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		1262	0.8	0.484	9.2	LOS A	2.7	69.4	0.54	0.59	33.0
East: WB Boronda Rd											
1	L2	351	0.0	0.676	16.9	LOS C	6.0	150.0	0.80	1.00	28.5
6	T1	1398	0.6	0.676	15.5	LOS C	6.7	167.9	0.80	1.00	35.4
16	R2	453	1.6	0.410	7.6	LOS A	2.2	56.5	0.62	0.61	35.7
Approach		2202	0.7	0.676	14.1	LOS B	6.7	167.9	0.76	0.92	34.5
North: SB Natividad Rd											
7	L2	378	0.0	0.774	32.2	LOS D	6.6	164.8	0.92	1.22	26.0
4	T1	1051	0.0	0.933	49.8	LOS E	15.7	393.0	0.98	1.62	18.3
14	R2	124	0.0	0.159	6.3	LOS A	0.8	19.3	0.75	0.75	38.0
Approach		1553	0.0	0.933	42.1	LOS E	15.7	393.0	0.95	1.45	21.7
West: EB Boronda Rd											
5u	U	92	0.0	0.769	30.7	LOS D	6.7	166.7	0.91	1.21	30.2
5	L2	180	0.0	0.769	30.7	LOS D	6.7	166.7	0.91	1.21	28.5
2	T1	1030	0.3	0.769	27.5	LOS D	8.0	200.9	0.92	1.22	31.3
12	R2	189	0.0	0.242	7.3	LOS A	1.3	32.6	0.77	0.77	35.9
Approach		1492	0.2	0.769	25.6	LOS D	8.0	200.9	0.90	1.16	31.2
All Vehicles		6510	0.4	0.933	22.4	LOS C	15.7	393.0	0.79	1.04	30.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_Existing + WASP + CASP AM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	181	0.0	0.201	6.0	LOS A	1.2	31.0	0.82	0.77	34.6
8	T1	136	0.0	0.232	9.2	LOS A	1.2	29.9	0.80	0.80	33.8
18	R2	211	0.0	0.207	5.5	LOS A	1.2	29.4	0.75	0.70	35.7
Approach		527	0.0	0.232	6.6	LOS A	1.2	31.0	0.79	0.75	34.8
East: WB Baronda Rd											
1	L2	210	0.0	0.943	37.3	LOS E	29.2	734.1	1.00	1.80	26.9
6	T1	1608	0.9	0.943	35.6	LOS E	31.4	790.3	1.00	1.78	28.9
16	R2	139	0.0	0.943	34.3	LOS D	31.4	790.3	1.00	1.77	26.6
Approach		1957	0.7	0.943	35.7	LOS E	31.4	790.3	1.00	1.78	28.6
North: SB El Dorado Dr (Future)											
7	L2	174	0.0	0.332	11.9	LOS B	2.5	62.8	1.00	1.00	31.9
4	T1	152	0.0	0.479	23.7	LOS C	3.1	77.3	0.94	1.04	28.4
14	R2	107	0.0	0.164	7.4	LOS A	1.1	27.8	0.93	0.88	34.8
Approach		433	0.0	0.479	14.9	LOS B	3.1	77.3	0.96	0.98	31.4
West: EB Boronda Rd											
5u	U	70	0.0	0.694	15.5	LOS C	8.7	220.9	0.79	1.00	34.1
5	L2	131	0.0	0.694	15.5	LOS C	8.7	220.9	0.79	1.00	32.2
2	T1	1095	2.0	0.694	14.7	LOS B	9.1	231.2	0.78	0.97	33.9
12	R2	101	0.0	0.694	14.0	LOS B	9.1	231.2	0.78	0.95	33.0
Approach		1398	1.6	0.694	14.7	LOS B	9.1	231.2	0.79	0.97	33.7
All Vehicles		4315	0.8	0.943	23.3	LOS C	31.4	790.3	0.90	1.31	31.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	928	173	171	1137	120	217	17	50	142	23	103
Future Volume (veh/h)	125	928	173	171	1137	120	217	17	50	142	23	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1814	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	136	1009	178	186	1236	125	236	18	49	154	25	11
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	150	1307	230	210	1535	155	277	21	58	177	122	54
Arrive On Green	0.03	0.15	0.15	0.12	0.49	0.49	0.21	0.21	0.21	0.10	0.10	0.10
Sat Flow, veh/h	1774	2905	512	1723	3151	318	1351	103	281	1774	1218	536
Grp Volume(v), veh/h	136	596	591	186	674	687	303	0	0	154	0	36
Grp Sat Flow(s),veh/h/ln	1774	1719	1697	1723	1724	1745	1735	0	0	1774	0	1753
Q Serve(g_s), s	9.9	43.4	43.5	13.8	42.8	43.3	21.9	0.0	0.0	11.1	0.0	2.5
Cycle Q Clear(g_c), s	9.9	43.4	43.5	13.8	42.8	43.3	21.9	0.0	0.0	11.1	0.0	2.5
Prop In Lane	1.00		0.30	1.00		0.18	0.78		0.16	1.00		0.31
Lane Grp Cap(c), veh/h	150	774	764	210	840	850	356	0	0	177	0	175
V/C Ratio(X)	0.91	0.77	0.77	0.89	0.80	0.81	0.85	0.00	0.00	0.87	0.00	0.21
Avail Cap(c_a), veh/h	150	774	764	212	840	850	454	0	0	177	0	175
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.7	48.9	49.0	56.2	28.1	28.2	49.7	0.0	0.0	57.7	0.0	53.8
Incr Delay (d2), s/veh	39.1	5.7	5.8	33.1	8.0	8.1	11.8	0.0	0.0	33.8	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	21.9	21.7	8.5	22.1	22.7	11.7	0.0	0.0	7.1	0.0	1.2
LnGrp Delay(d),s/veh	101.8	54.6	54.8	89.3	36.1	36.3	61.5	0.0	0.0	91.4	0.0	54.3
LnGrp LOS	F	D	D	F	D	D	E			F		D
Approach Vol, veh/h		1323			1547			303			190	
Approach Delay, s/veh		59.5			42.6			61.5			84.4	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.8	62.5		17.0	15.0	67.3		30.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	51.0		13.0	11.0	56.0		34.0
Max Q Clear Time (g_c+I1), s	15.8	45.5		13.1	11.9	45.3		23.9
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	9.1		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.3
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	15	4	216	339	17
Future Vol, veh/h	33	15	4	216	339	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	16	4	235	368	18
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.2	10.1	12.6
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	95%
Vol Right, %	0%	0%	0%	100%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	216	33	15	356
LT Vol	4	0	33	0	0
Through Vol	0	216	0	0	339
RT Vol	0	0	0	15	17
Lane Flow Rate	4	235	36	16	387
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.007	0.325	0.065	0.024	0.509
Departure Headway (Hd)	5.49	4.987	6.51	5.297	4.737
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	653	721	550	674	762
Service Time	3.217	2.714	4.258	3.045	2.762
HCM Lane V/C Ratio	0.006	0.326	0.065	0.024	0.508
HCM Control Delay	8.3	10.1	9.7	8.2	12.6
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0	1.4	0.2	0.1	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	330	140	300	310	264	40	620	320	216	745	140
Future Volume (veh/h)	146	330	140	300	310	264	40	620	320	216	745	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.98	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	159	359	23	326	337	84	43	674	274	235	810	84
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	808	334	373	596	496	275	1223	489	323	1430	429
Arrive On Green	0.12	0.23	0.23	0.21	0.32	0.32	0.16	0.34	0.33	0.09	0.28	0.28
Sat Flow, veh/h	1774	3539	1465	1774	1863	1551	1774	3570	1428	3442	5085	1526
Grp Volume(v), veh/h	159	359	23	326	337	84	43	640	308	235	810	84
Grp Sat Flow(s),veh/h/ln	1774	1770	1465	1774	1863	1551	1774	1695	1608	1721	1695	1526
Q Serve(g_s), s	11.1	11.1	1.1	22.8	19.2	5.0	2.7	19.6	20.2	8.5	17.4	3.8
Cycle Q Clear(g_c), s	11.1	11.1	1.1	22.8	19.2	5.0	2.7	19.6	20.2	8.5	17.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.89	1.00		1.00
Lane Grp Cap(c), veh/h	211	808	334	373	596	496	275	1161	551	323	1430	429
V/C Ratio(X)	0.76	0.44	0.07	0.87	0.57	0.17	0.16	0.55	0.56	0.73	0.57	0.20
Avail Cap(c_a), veh/h	292	998	413	430	669	557	275	1161	551	323	1430	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	42.4	17.7	48.9	36.1	31.3	46.8	34.1	35.1	56.4	39.3	17.3
Incr Delay (d2), s/veh	4.1	0.1	0.0	14.7	0.3	0.1	0.1	1.9	4.1	7.1	1.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.5	0.4	12.7	10.0	2.1	1.3	9.5	9.6	4.4	8.4	1.7
LnGrp Delay(d),s/veh	58.7	42.6	17.7	63.6	36.5	31.3	46.9	36.0	39.2	63.5	41.0	18.3
LnGrp LOS	E	D	B	E	D	C	D	D	D	E	D	B
Approach Vol, veh/h		541			747			991			1129	
Approach Delay, s/veh		46.2			47.7			37.4			44.0	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.8	30.9	33.2	23.8	40.0	19.2	45.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	9.9	30.8	28.9	34.0	6.8	33.9	19.0	43.9
Max Q Clear Time (g_c+I1), s	10.5	22.2	24.8	13.1	4.7	19.4	13.1	21.2
Green Ext Time (p_c), s	0.0	1.8	0.1	1.5	0.7	2.0	0.0	1.5

Intersection Summary		
HCM 2010 Ctrl Delay		43.3
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	0	400	0	0	0	380	1025	0	0	1661	265
Future Volume (veh/h)	278	0	400	0	0	0	380	1025	0	0	1661	265
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	980	0	980				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	302	0	92				413	1114	0	0	1805	260
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	356	0	164				452	3656	0	2	1891	270
Arrive On Green	0.20	0.00	0.20				0.25	0.72	0.00	0.00	0.42	0.41
Sat Flow, veh/h	1811	0	833				1774	5253	0	1774	4481	640
Grp Volume(v), veh/h	302	0	92				413	1114	0	0	1361	704
Grp Sat Flow(s),veh/h/ln	906	0	833				1774	1695	0	1774	1695	1730
Q Serve(g_s), s	15.2	0.0	9.5				21.4	7.5	0.0	0.0	36.8	37.6
Cycle Q Clear(g_c), s	15.2	0.0	9.5				21.4	7.5	0.0	0.0	36.8	37.6
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.37
Lane Grp Cap(c), veh/h	356	0	164				452	3656	0	2	1431	730
V/C Ratio(X)	0.85	0.00	0.56				0.91	0.30	0.00	0.00	0.95	0.96
Avail Cap(c_a), veh/h	497	0	229				487	3656	0	112	1431	730
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	0.0	34.4				34.3	4.8	0.0	0.0	26.5	27.0
Incr Delay (d2), s/veh	9.5	0.0	3.0				22.4	0.0	0.0	0.0	13.9	24.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	4.5				13.3	3.4	0.0	0.0	19.8	22.8
LnGrp Delay(d),s/veh	46.2	0.0	37.4				56.7	4.8	0.0	0.0	40.4	51.5
LnGrp LOS	D		D				E	A			D	D
Approach Vol, veh/h		394						1527			2065	
Approach Delay, s/veh		44.2						18.9			44.2	
Approach LOS		D						B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	72.1		22.6	28.1	44.0		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	10.0	9.5		17.2	23.4	39.6		
Green Ext Time (p_c), s	0.0	38.3		0.9	0.7	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	718	110	10	1209	60	200	90	20	70	120	654
Future Volume (veh/h)	302	718	110	10	1209	60	200	90	20	70	120	654
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	321	764	106	11	1286	61	213	96	12	74	128	390
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	1679	233	68	1245	59	298	523	65	412	602	498
Arrive On Green	0.21	0.54	0.52	0.04	0.36	0.34	0.32	0.32	0.31	0.32	0.32	0.32
Sat Flow, veh/h	1774	3123	433	1774	3439	163	870	1618	202	1254	1863	1542
Grp Volume(v), veh/h	321	433	437	11	661	686	213	0	108	74	128	390
Grp Sat Flow(s),veh/h/ln	1774	1770	1786	1774	1770	1832	870	0	1820	1254	1863	1542
Q Serve(g_s), s	20.6	17.8	17.9	0.7	43.0	43.0	28.0	0.0	5.1	5.4	5.9	27.2
Cycle Q Clear(g_c), s	20.6	17.8	17.9	0.7	43.0	43.0	33.9	0.0	5.1	10.4	5.9	27.2
Prop In Lane	1.00		0.24	1.00		0.09	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	379	952	961	68	641	663	298	0	588	412	602	498
V/C Ratio(X)	0.85	0.45	0.46	0.16	1.03	1.03	0.71	0.00	0.18	0.18	0.21	0.78
Avail Cap(c_a), veh/h	388	952	961	134	641	663	303	0	598	419	612	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	16.8	17.0	55.3	37.9	38.0	41.6	0.0	29.0	32.7	29.2	36.4
Incr Delay (d2), s/veh	15.5	0.3	0.3	1.1	44.0	44.1	7.6	0.0	0.1	0.2	0.2	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	8.7	8.9	0.4	28.6	29.7	7.4	0.0	2.6	1.9	3.1	12.6
LnGrp Delay(d),s/veh	60.3	17.1	17.4	56.4	81.9	82.1	49.2	0.0	29.1	32.9	29.4	44.1
LnGrp LOS	E	B	B	E	F	F	D		C	C	C	D
Approach Vol, veh/h		1191			1358			321			592	
Approach Delay, s/veh		28.9			81.8			42.4			39.5	
Approach LOS		C			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	67.9		42.4	29.4	47.0		42.4
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	2.7	19.9		29.2	22.6	45.0		35.9
Green Ext Time (p_c), s	0.0	20.0		2.9	0.1	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	75	130	120	142	33	70	900	70	24	896	243
Future Volume (veh/h)	371	75	130	120	142	33	70	900	70	24	896	243
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	403	82	39	130	154	36	76	978	76	26	974	184
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	424	566	252	276	442	100	132	1311	102	57	1247	545
Arrive On Green	0.24	0.24	0.22	0.16	0.16	0.13	0.08	0.41	0.39	0.03	0.36	0.36
Sat Flow, veh/h	1774	2370	1055	1774	2842	643	1723	3229	251	1723	3438	1503
Grp Volume(v), veh/h	403	60	61	130	94	96	76	521	533	26	974	184
Grp Sat Flow(s),veh/h/ln	1774	1770	1655	1774	1770	1716	1723	1719	1761	1723	1719	1503
Q Serve(g_s), s	21.5	2.6	2.9	6.4	4.6	4.8	4.1	24.8	24.9	1.4	24.2	8.6
Cycle Q Clear(g_c), s	21.5	2.6	2.9	6.4	4.6	4.8	4.1	24.8	24.9	1.4	24.2	8.6
Prop In Lane	1.00		0.64	1.00		0.37	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	424	423	396	276	275	267	132	698	715	57	1247	545
V/C Ratio(X)	0.95	0.14	0.15	0.47	0.34	0.36	0.58	0.75	0.75	0.45	0.78	0.34
Avail Cap(c_a), veh/h	424	423	396	682	681	660	287	698	715	287	1358	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	28.8	29.4	37.0	36.2	36.7	42.9	24.3	24.5	45.6	27.3	22.3
Incr Delay (d2), s/veh	31.2	0.2	0.2	1.3	0.7	0.8	3.9	4.4	4.3	5.5	2.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	1.3	1.3	3.2	2.3	2.4	2.1	12.6	12.9	0.8	12.0	3.6
LnGrp Delay(d),s/veh	67.3	29.0	29.6	38.3	37.0	37.5	46.8	28.7	28.8	51.1	30.0	22.6
LnGrp LOS	E	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		524			320			1130			1184	
Approach Delay, s/veh		58.5			37.7			30.0			29.4	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	38.9		18.9	7.2	43.1		27.0
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0
Max Q Clear Time (g_c+I1), s	6.1	26.2		8.4	3.4	26.9		23.5
Green Ext Time (p_c), s	0.1	6.7		1.3	0.0	7.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1045	310	0	1355	328	0	0	0	263	0	440
Future Volume (veh/h)	0	1045	310	0	1355	328	0	0	0	263	0	440
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1100	0	0	1426	0				277	0	440
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	1971	882	0	1971	0				1102	0	507
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1100	0	0	1426	0				277	0	440
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	15.0	0.0	0.0	22.7	0.0				4.5	0.0	19.6
Cycle Q Clear(g_c), s	0.0	15.0	0.0	0.0	22.7	0.0				4.5	0.0	19.6
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1971	882	0	1971	0				1102	0	507
V/C Ratio(X)	0.00	0.56	0.00	0.00	0.72	0.00				0.25	0.00	0.87
Avail Cap(c_a), veh/h	0	2570	1150	0	2570	0				1654	0	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	0.0	0.0	11.7	0.0				18.8	0.0	24.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.4	0.0				0.1	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.1	0.0	0.0	10.6	0.0				2.1	0.0	9.4
LnGrp Delay(d),s/veh	0.0	10.1	0.0	0.0	12.1	0.0				18.9	0.0	30.2
LnGrp LOS		B			B					B		C
Approach Vol, veh/h		1100			1426						717	
Approach Delay, s/veh		10.1			12.1						25.8	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		46.9		28.0		46.9		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		54.9		35.4		54.9		
Max Q Clear Time (g_c+I1), s		17.0		21.6		24.7		
Green Ext Time (p_c), s		19.3		1.8		17.2		

Intersection Summary			
HCM 2010 Ctrl Delay			14.5
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	968	340	0	1433	305	250	0	127	0	0	0
Future Volume (vph)	0	968	340	0	1433	305	250	0	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1538		3331		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1538		3331		1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1052	370	0	1558	332	272	0	138	0	0	0
RTOR Reduction (vph)	0	0	111	0	15	0	0	0	103	0	0	0
Lane Group Flow (vph)	0	1052	259	0	1875	0	136	136	35	0	0	0
Confl. Peds. (#/hr)						3						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.8	63.8		63.8		18.4	18.4	18.4			
Effective Green, g (s)		64.4	63.8		64.4		18.6	18.6	18.6			
Actuated g/C Ratio		0.71	0.70		0.71		0.20	0.20	0.20			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2433	1078		2357		343	343	323			
v/s Ratio Prot		0.31			c0.56		c0.08	0.08				
v/s Ratio Perm			0.17						0.02			
v/c Ratio		0.43	0.24		0.80		0.40	0.40	0.11			
Uniform Delay, d1		5.6	4.9		8.9		31.3	31.3	29.5			
Progression Factor		1.00	1.00		0.71		1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.1		1.3		0.3	0.3	0.1			
Delay (s)		5.7	5.0		7.6		31.6	31.6	29.5			
Level of Service		A	A		A		C	C	C			
Approach Delay (s)		5.5			7.6			30.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	518	90	160	609	100	80	688	140	180	962	143
Future Volume (veh/h)	222	518	90	160	609	100	80	688	140	180	962	143
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	241	563	85	174	662	95	87	748	57	196	1046	142
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	297	889	134	224	767	110	188	1282	569	296	1778	241
Arrive On Green	0.17	0.30	0.28	0.13	0.25	0.24	0.05	0.36	0.36	0.09	0.39	0.38
Sat Flow, veh/h	1723	2994	451	1723	3012	432	3442	3539	1570	3442	4519	612
Grp Volume(v), veh/h	241	323	325	174	377	380	87	748	57	196	784	404
Grp Sat Flow(s),veh/h/ln	1723	1719	1726	1723	1719	1724	1721	1770	1570	1721	1695	1742
Q Serve(g_s), s	17.2	20.8	21.0	12.5	26.8	26.9	3.1	21.9	3.1	7.1	23.4	23.6
Cycle Q Clear(g_c), s	17.2	20.8	21.0	12.5	26.8	26.9	3.1	21.9	3.1	7.1	23.4	23.6
Prop In Lane	1.00		0.26	1.00		0.25	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	297	511	513	224	438	439	188	1282	569	296	1334	685
V/C Ratio(X)	0.81	0.63	0.64	0.78	0.86	0.86	0.46	0.58	0.10	0.66	0.59	0.59
Avail Cap(c_a), veh/h	337	535	537	327	525	527	194	1282	569	296	1334	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	38.9	39.2	53.9	45.5	45.8	58.7	33.0	27.0	56.7	30.6	31.0
Incr Delay (d2), s/veh	11.1	1.6	1.7	3.8	10.6	10.8	0.7	1.9	0.4	4.4	1.9	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	10.1	10.2	6.2	14.0	14.2	1.5	11.0	1.4	3.6	11.2	12.0
LnGrp Delay(d),s/veh	62.1	40.6	40.9	57.7	56.1	56.6	59.3	35.0	27.4	61.1	32.5	34.7
LnGrp LOS	E	D	D	E	E	E	E	C	C	E	C	C
Approach Vol, veh/h		889			931			892			1384	
Approach Delay, s/veh		46.5			56.6			36.8			37.2	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	50.4	20.6	42.0	11.0	54.4	26.0	36.6
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	34.8	22.2	37.7	5.1	38.6	22.9	37.0
Max Q Clear Time (g_c+I1), s	9.1	23.9	14.5	23.0	5.1	25.6	19.2	28.9
Green Ext Time (p_c), s	0.0	4.3	0.0	1.3	0.0	4.7	0.7	1.2

Intersection Summary		
HCM 2010 Ctrl Delay		43.6
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	617	110	860	774	387	60	1248	660	418	1573	80
Future Volume (veh/h)	160	617	110	860	774	387	60	1248	660	418	1573	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	174	671	0	935	841	0	65	1357	668	454	1710	85
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	184	768	344	713	1146	513	71	1227	1560	367	1419	70
Arrive On Green	0.11	0.22	0.00	0.21	0.33	0.00	0.04	0.35	0.35	0.11	0.41	0.40
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2759	3442	3433	170
Grp Volume(v), veh/h	174	671	0	935	841	0	65	1357	668	454	877	918
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1833
Q Serve(g_s), s	15.1	28.3	0.0	32.0	32.4	0.0	5.5	52.0	20.9	16.0	62.0	62.0
Cycle Q Clear(g_c), s	15.1	28.3	0.0	32.0	32.4	0.0	5.5	52.0	20.9	16.0	62.0	62.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	184	768	344	713	1146	513	71	1227	1560	367	731	757
V/C Ratio(X)	0.95	0.87	0.00	1.31	0.73	0.00	0.92	1.11	0.43	1.24	1.20	1.21
Avail Cap(c_a), veh/h	184	779	349	713	1146	513	71	1227	1560	367	731	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	56.2	0.0	59.0	44.1	0.0	71.8	49.0	18.9	67.0	44.0	44.1
Incr Delay (d2), s/veh	50.5	10.5	0.0	150.0	2.3	0.0	77.1	60.0	0.1	127.9	102.4	107.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	14.5	0.0	29.6	15.8	0.0	4.2	35.6	8.0	14.1	51.1	54.0
LnGrp Delay(d),s/veh	117.1	66.7	0.0	209.0	46.5	0.0	148.8	109.0	19.0	195.0	146.4	151.9
LnGrp LOS	F	E		F	D		F	F	B	F	F	F
Approach Vol, veh/h		845			1776			2090			2249	
Approach Delay, s/veh		77.1			132.0			81.5			158.4	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	56.0	36.0	38.0	10.0	66.0	20.0	54.0
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	54.0	34.0	30.3	7.5	64.0	17.1	34.4
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	118.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	977	658	30	130	727	268	50	271	150	435	195	1574
Future Volume (veh/h)	977	658	30	130	727	268	50	271	150	435	195	1574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1812	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1062	715	31	141	790	0	54	295	66	473	212	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1167	1572	68	165	726	325	70	314	69	393	543	461
Arrive On Green	0.35	0.47	0.45	0.09	0.21	0.00	0.04	0.11	0.11	0.22	0.29	0.00
Sat Flow, veh/h	3343	3362	146	1774	3438	1538	1774	2884	636	1774	1863	1583
Grp Volume(v), veh/h	1062	366	380	141	790	0	54	179	182	473	212	0
Grp Sat Flow(s),veh/h/ln	1672	1721	1786	1774	1719	1538	1774	1770	1751	1774	1863	1583
Q Serve(g_s), s	44.5	21.1	21.2	11.5	31.0	0.0	4.4	14.7	15.1	32.5	13.4	0.0
Cycle Q Clear(g_c), s	44.5	21.1	21.2	11.5	31.0	0.0	4.4	14.7	15.1	32.5	13.4	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	1167	805	835	165	726	325	70	193	191	393	543	461
V/C Ratio(X)	0.91	0.45	0.46	0.86	1.09	0.00	0.78	0.93	0.95	1.20	0.39	0.00
Avail Cap(c_a), veh/h	1276	805	835	254	726	325	193	193	191	393	543	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.5	26.4	26.5	65.6	57.9	0.0	69.8	64.8	65.0	57.1	41.6	0.0
Incr Delay (d2), s/veh	9.3	0.4	0.4	15.7	59.8	0.0	16.6	45.1	51.3	113.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.0	10.2	10.6	6.4	20.7	0.0	2.5	9.6	10.0	28.2	7.0	0.0
LnGrp Delay(d),s/veh	54.9	26.8	26.9	81.3	117.6	0.0	86.4	109.9	116.2	170.7	42.0	0.0
LnGrp LOS	D	C	C	F	F		F	F	F	F	D	
Approach Vol, veh/h		1808			931			415			685	
Approach Delay, s/veh		43.3			112.1			109.6			130.9	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	72.6	9.8	46.7	55.2	35.0	35.0	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	13.5	23.2	6.4	15.4	46.5	33.0	34.5	17.1
Green Ext Time (p_c), s	0.2	13.7	0.1	2.6	2.8	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	82.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	735	381	190	576	0	415	0	30	0	0	0
Future Volume (veh/h)	0	735	381	190	576	0	415	0	30	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	799	396	207	626	0	451	0	8	0	0	-11
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	892	440	266	2080	0	534	533	465	2	2	371
Arrive On Green	0.00	0.40	0.39	0.15	0.61	0.00	0.30	0.00	0.29	0.00	0.00	0.00
Sat Flow, veh/h	1774	2208	1088	1723	3529	0	1774	1770	1542	1774	3632	0
Grp Volume(v), veh/h	0	621	574	207	626	0	451	0	8	0	-11	-11
Grp Sat Flow(s),veh/h/ln	1774	1719	1577	1723	1719	0	1774	1770	1542	1774	1770	1583
Q Serve(g_s), s	0.0	28.8	29.2	9.9	7.5	0.0	20.3	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	28.8	29.2	9.9	7.5	0.0	20.3	0.0	0.3	0.0	0.0	0.0
Prop In Lane	1.00		0.69	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	695	637	266	2080	0	534	533	465	2	2	0
V/C Ratio(X)	0.00	0.89	0.90	0.78	0.30	0.00	0.84	0.00	0.02	0.00	-5.31	0.00
Avail Cap(c_a), veh/h	125	704	646	484	2133	0	727	725	632	727	725	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	23.8	24.2	34.7	8.1	0.0	28.0	0.0	21.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.8	15.6	4.9	0.1	0.0	6.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.3	15.4	5.1	3.6	0.0	10.9	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	37.6	39.8	39.6	8.2	0.0	34.7	0.0	21.3	0.0	0.0	0.0
LnGrp LOS		D	D	D	A		C		C			
Approach Vol, veh/h		1195			833			459			-22	
Approach Delay, s/veh		38.7			16.0			34.5			0.0	
Approach LOS		D			B			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	38.5		29.7	0.0	55.7		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	11.9	31.2		22.3	0.0	9.5		0.0
Green Ext Time (p_c), s	0.4	2.3		1.2	0.0	17.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	188.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	163	310	80	60	560	120	50	57	0	10	50	204
Future Vol, veh/h	163	310	80	60	560	120	50	57	0	10	50	204
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	177	337	87	65	609	130	54	62	0	11	54	222

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	747	378	185	590	489	82	286	0	0	72	0	0
Stage 1	197	197	-	181	181	-	-	-	-	-	-	-
Stage 2	550	181	-	409	308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	329	554	857	419	~ 480	978	1276	-	-	1528	-	-
Stage 1	805	738	-	821	750	-	-	-	-	-	-	-
Stage 2	519	750	-	619	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	518	843	171	~ 449	962	1265	-	-	1515	-	-
Mov Cap-2 Maneuver	-	518	-	171	~ 449	-	-	-	-	-	-	-
Stage 1	764	727	-	779	712	-	-	-	-	-	-	-
Stage 2	~ 62	712	-	293	650	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 422.4	3.7	0.3
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1265	-	-	-	596	430	1515	-	-
HCM Lane V/C Ratio	0.043	-	-	-	0.429	1.871	0.007	-	-
HCM Control Delay (s)	8	-	-	-	15.5	$ 422.4	7.4	-	-
HCM Lane LOS	A	-	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	2.1	52.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	180	924	90	50	220	818	590	70	1162	20
Future Volume (veh/h)	20	40	180	924	90	50	220	818	590	70	1162	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	43	78	1004	98	16	239	889	286	76	1263	21
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	158	995	538	456	393	1084	469	313	1343	22
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.22	0.31	0.31	0.18	0.26	0.24
Sat Flow, veh/h	1774	1863	1533	3442	1863	1577	1774	3539	1530	1774	5148	86
Grp Volume(v), veh/h	22	43	78	1004	98	16	239	889	286	76	832	452
Grp Sat Flow(s),veh/h/ln	1774	1863	1533	1721	1863	1577	1774	1770	1530	1774	1695	1844
Q Serve(g_s), s	1.4	2.7	6.2	37.0	5.1	0.9	15.5	29.8	20.4	4.7	30.8	30.8
Cycle Q Clear(g_c), s	1.4	2.7	6.2	37.0	5.1	0.9	15.5	29.8	20.4	4.7	30.8	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	183	192	158	995	538	456	393	1084	469	313	885	481
V/C Ratio(X)	0.12	0.22	0.49	1.01	0.18	0.04	0.61	0.82	0.61	0.24	0.94	0.94
Avail Cap(c_a), veh/h	396	416	342	995	538	456	393	1084	469	313	885	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	52.7	54.2	45.5	34.1	32.7	44.8	41.1	37.9	45.4	46.3	46.4
Incr Delay (d2), s/veh	0.1	0.2	0.9	30.8	0.1	0.0	1.9	7.0	5.8	0.1	18.8	28.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	2.7	21.8	2.6	0.4	7.8	15.6	9.3	2.3	16.8	19.5
LnGrp Delay(d),s/veh	52.2	52.9	55.1	76.3	34.2	32.7	46.8	48.1	43.7	45.5	65.1	74.9
LnGrp LOS	D	D	E	F	C	C	D	D	D	D	E	E
Approach Vol, veh/h		143			1118			1414			1360	
Approach Delay, s/veh		54.0			72.0			47.0			67.3	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.6	43.2		17.2	32.4	37.4		41.0
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.1	37.1		27.0	10.9	31.3		34.9
Max Q Clear Time (g_c+I1), s	6.7	31.8		8.2	17.5	32.8		39.0
Green Ext Time (p_c), s	0.0	1.5		0.1	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	10	120	85	20	30	70	1408	131	30	2099	364
Future Volume (veh/h)	410	10	120	85	20	30	70	1408	131	30	2099	364
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	446	11	53	92	22	15	76	1530	142	33	2282	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	448	10	484	41	9	1	123	1872	172	72	1919	0
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.29	0.07	0.57	0.55	0.04	0.54	0.00
Sat Flow, veh/h	1301	32	1571	0	28	4	1774	3277	302	1774	3632	0
Grp Volume(v), veh/h	457	0	53	129	0	0	76	821	851	33	2282	0
Grp Sat Flow(s),veh/h/ln	1333	0	1571	32	0	0	1774	1770	1809	1774	1770	0
Q Serve(g_s), s	0.0	0.0	3.6	0.0	0.0	0.0	6.2	55.4	57.1	2.7	81.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	3.6	46.0	0.0	0.0	6.2	55.4	57.1	2.7	81.0	0.0
Prop In Lane	0.98		1.00	0.71		0.12	1.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	458	0	484	51	0	0	123	1011	1033	72	1919	0
V/C Ratio(X)	1.00	0.00	0.11	2.52	0.00	0.00	0.62	0.81	0.82	0.46	1.19	0.00
Avail Cap(c_a), veh/h	458	0	484	51	0	0	131	1011	1033	131	1919	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.0	0.0	37.0	66.0	0.0	0.0	67.6	25.6	26.1	70.1	34.2	0.0
Incr Delay (d2), s/veh	41.4	0.0	0.0	739.9	0.0	0.0	5.3	4.7	5.2	1.7	90.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.1	0.0	1.6	12.6	0.0	0.0	3.2	28.2	29.9	1.4	63.6	0.0
LnGrp Delay(d),s/veh	95.4	0.0	37.1	806.0	0.0	0.0	72.8	30.3	31.3	71.8	124.8	0.0
LnGrp LOS	F		D	F			E	C	C	E	F	
Approach Vol, veh/h		510			129			1748			2315	
Approach Delay, s/veh		89.3			806.0			32.6			124.0	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	89.4		50.0	14.4	85.0		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	4.7	59.1		48.0	8.2	83.0		48.0
Green Ext Time (p_c), s	0.0	17.4		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	380	103	20	680	280	95	397	40	220	451	390
Future Volume (veh/h)	210	380	103	20	680	280	95	397	40	220	451	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	228	413	109	22	739	112	103	432	10	239	490	194
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	321	1112	290	26	1189	508	134	998	445	332	573	486
Arrive On Green	0.10	0.42	0.41	0.01	0.34	0.34	0.08	0.28	0.28	0.10	0.32	0.32
Sat Flow, veh/h	3343	2668	695	1774	3539	1513	1774	3539	1580	3343	1810	1534
Grp Volume(v), veh/h	228	264	258	22	739	112	103	432	10	239	490	194
Grp Sat Flow(s),veh/h/ln	1672	1719	1644	1774	1770	1513	1774	1770	1580	1672	1810	1534
Q Serve(g_s), s	6.0	9.6	9.9	1.1	15.9	4.8	5.2	9.1	0.4	6.3	23.1	9.0
Cycle Q Clear(g_c), s	6.0	9.6	9.9	1.1	15.9	4.8	5.2	9.1	0.4	6.3	23.1	9.0
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	717	685	26	1189	508	134	998	445	332	573	486
V/C Ratio(X)	0.71	0.37	0.38	0.84	0.62	0.22	0.77	0.43	0.02	0.72	0.86	0.40
Avail Cap(c_a), veh/h	1104	717	685	586	1422	608	586	1208	539	1104	618	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	18.2	18.4	44.6	25.3	21.6	41.2	26.7	23.6	39.7	29.1	24.3
Incr Delay (d2), s/veh	2.9	0.3	0.3	46.8	0.6	0.2	8.9	0.3	0.0	2.9	10.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.6	4.5	0.9	7.9	2.0	2.9	4.5	0.2	3.1	13.1	3.8
LnGrp Delay(d),s/veh	42.8	18.6	18.7	91.5	25.9	21.9	50.2	27.0	23.6	42.6	39.8	24.8
LnGrp LOS	D	B	B	F	C	C	D	C	C	D	D	C
Approach Vol, veh/h		750			873			545			923	
Approach Delay, s/veh		26.0			27.1			31.3			37.4	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	41.9	10.9	32.8	12.7	34.5	13.0	30.6
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	3.1	11.9	7.2	25.1	8.0	17.9	8.3	11.1
Green Ext Time (p_c), s	0.0	9.5	0.2	2.6	0.7	7.4	0.7	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	153	20	30	194	50	20	160	20	60	230	635
Future Volume (veh/h)	396	153	20	30	194	50	20	160	20	60	230	635
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1823	1900
Adj Flow Rate, veh/h	430	166	8	33	211	9	22	174	15	65	250	525
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	478	1296	62	55	476	20	41	1128	96	101	635	555
Arrive On Green	0.27	0.38	0.37	0.03	0.14	0.13	0.02	0.34	0.34	0.06	0.37	0.38
Sat Flow, veh/h	1774	3438	165	1774	3452	146	1774	3301	282	1723	1732	1515
Grp Volume(v), veh/h	430	85	89	33	108	112	22	93	96	65	250	525
Grp Sat Flow(s),veh/h/ln	1774	1770	1834	1774	1770	1829	1774	1770	1813	1723	1732	1515
Q Serve(g_s), s	21.9	2.9	3.0	1.7	5.2	5.3	1.1	3.4	3.5	3.5	10.0	31.5
Cycle Q Clear(g_c), s	21.9	2.9	3.0	1.7	5.2	5.3	1.1	3.4	3.5	3.5	10.0	31.5
Prop In Lane	1.00		0.09	1.00		0.08	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	478	667	691	55	244	252	41	605	619	101	635	555
V/C Ratio(X)	0.90	0.13	0.13	0.60	0.44	0.45	0.53	0.15	0.16	0.64	0.39	0.95
Avail Cap(c_a), veh/h	1041	680	704	284	680	702	284	661	677	294	647	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	19.1	19.2	44.9	37.1	37.1	45.3	21.4	21.5	43.2	22.0	28.3
Incr Delay (d2), s/veh	6.4	0.1	0.1	10.3	1.2	1.2	10.3	0.1	0.1	6.6	0.4	24.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	1.5	1.5	1.0	2.7	2.8	0.7	1.7	1.8	1.8	4.9	16.9
LnGrp Delay(d),s/veh	39.4	19.2	19.2	55.2	38.3	38.4	55.5	21.6	21.6	49.8	22.4	53.1
LnGrp LOS	D	B	B	E	D	D	E	C	C	D	C	D
Approach Vol, veh/h		604			253			211			840	
Approach Delay, s/veh		33.6			40.5			25.1			43.7	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	37.0	7.9	39.3	7.2	39.4	30.3	16.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	5.5	5.5	3.7	5.0	3.1	33.5	23.9	7.3
Green Ext Time (p_c), s	0.1	6.8	0.0	2.2	0.0	0.9	1.4	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	180	30	100	300	20	50	419	130	20	509	220
Future Volume (veh/h)	140	180	30	100	300	20	50	419	130	20	509	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	196	10	109	326	18	54	455	34	22	553	53
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	231	448	380	179	719	39	150	746	625	104	697	584
Arrive On Green	0.13	0.25	0.25	0.10	0.22	0.19	0.08	0.40	0.40	0.06	0.37	0.37
Sat Flow, veh/h	1723	1810	1538	1723	3304	181	1774	1863	1562	1774	1863	1559
Grp Volume(v), veh/h	152	196	10	109	169	175	54	455	34	22	553	53
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1767	1774	1863	1562	1774	1863	1559
Q Serve(g_s), s	7.1	7.7	0.4	5.1	7.2	7.3	2.4	16.3	1.1	1.0	22.3	1.9
Cycle Q Clear(g_c), s	7.1	7.7	0.4	5.1	7.2	7.3	2.4	16.3	1.1	1.0	22.3	1.9
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	448	380	179	374	384	150	746	625	104	697	584
V/C Ratio(X)	0.66	0.44	0.03	0.61	0.45	0.46	0.36	0.61	0.05	0.21	0.79	0.09
Avail Cap(c_a), veh/h	736	880	748	348	655	673	232	1238	1038	232	796	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	26.8	24.0	36.1	28.6	28.7	36.4	20.0	15.5	37.8	23.5	17.1
Incr Delay (d2), s/veh	3.2	0.7	0.0	3.3	0.9	0.8	1.5	0.8	0.0	1.0	4.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.9	0.2	2.6	3.5	3.6	1.2	8.5	0.5	0.5	12.3	0.8
LnGrp Delay(d),s/veh	37.9	27.4	24.1	39.4	29.5	29.6	37.9	20.9	15.5	38.8	28.4	17.1
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		358			453			543			628	
Approach Delay, s/veh		31.8			31.9			22.2			27.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	24.8	11.1	35.5	15.3	22.3	8.9	37.7
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	7.1	9.7	4.4	24.3	9.1	9.3	3.0	18.3
Green Ext Time (p_c), s	0.1	3.3	0.0	4.5	0.4	3.0	0.0	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	490	170	210	710	53	240	186	210	76	201	30
Future Volume (veh/h)	10	490	170	210	710	53	240	186	210	76	201	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	533	155	228	772	58	261	202	82	83	218	12
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	31	908	263	278	1582	119	384	685	558	384	642	35
Arrive On Green	0.02	0.35	0.33	0.16	0.49	0.47	0.37	0.37	0.37	0.37	0.37	0.36
Sat Flow, veh/h	1723	2609	755	1723	3221	242	1118	1863	1517	1065	1745	96
Grp Volume(v), veh/h	11	350	338	228	412	418	261	202	82	83	0	230
Grp Sat Flow(s),veh/h/ln	1723	1719	1645	1723	1719	1744	1118	1863	1517	1065	0	1841
Q Serve(g_s), s	0.6	16.3	16.6	12.5	15.7	15.8	21.5	7.5	3.5	5.9	0.0	8.8
Cycle Q Clear(g_c), s	0.6	16.3	16.6	12.5	15.7	15.8	30.4	7.5	3.5	13.4	0.0	8.8
Prop In Lane	1.00		0.46	1.00		0.14	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	31	598	573	278	844	857	384	685	558	384	0	677
V/C Ratio(X)	0.35	0.59	0.59	0.82	0.49	0.49	0.68	0.29	0.15	0.22	0.00	0.34
Avail Cap(c_a), veh/h	546	914	874	370	844	857	441	780	636	438	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.5	26.1	26.6	39.7	16.7	16.8	33.3	21.9	20.7	26.7	0.0	22.4
Incr Delay (d2), s/veh	6.6	1.9	2.1	10.4	0.9	0.9	3.5	0.2	0.1	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.0	7.9	6.8	7.7	7.8	7.0	3.9	1.5	1.8	0.0	4.5
LnGrp Delay(d),s/veh	54.1	28.1	28.6	50.1	17.6	17.7	36.8	22.2	20.8	26.9	0.0	22.7
LnGrp LOS	D	C	C	D	B	B	D	C	C	C		C
Approach Vol, veh/h		699			1058			545			313	
Approach Delay, s/veh		28.8			24.6			29.0			23.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.8	38.1		40.0	5.8	52.1		40.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	14.5	18.6		15.4	2.6	17.8		32.4
Green Ext Time (p_c), s	0.3	13.5		4.4	0.0	16.2		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	497	20	110	810	130	40	100	109	110	100	80
Future Volume (veh/h)	20	497	20	110	810	130	40	100	109	110	100	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	540	20	120	880	82	43	109	25	120	109	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1437	53	179	1698	744	349	367	289	211	221	188
Arrive On Green	0.03	0.41	0.39	0.10	0.48	0.48	0.20	0.20	0.20	0.12	0.12	0.00
Sat Flow, veh/h	1774	3479	129	1774	3539	1550	1774	1863	1470	1774	1863	1583
Grp Volume(v), veh/h	22	274	286	120	880	82	43	109	25	120	109	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1838	1774	1770	1550	1774	1863	1470	1774	1863	1583
Q Serve(g_s), s	1.1	10.1	10.2	6.1	16.2	2.7	1.9	4.7	1.3	6.0	5.2	0.0
Cycle Q Clear(g_c), s	1.1	10.1	10.2	6.1	16.2	2.7	1.9	4.7	1.3	6.0	5.2	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	731	759	179	1698	744	349	367	289	211	221	188
V/C Ratio(X)	0.36	0.38	0.38	0.67	0.52	0.11	0.12	0.30	0.09	0.57	0.49	0.00
Avail Cap(c_a), veh/h	207	865	899	490	2295	1005	679	713	563	490	515	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.4	19.2	19.2	40.8	16.9	13.4	31.1	32.2	30.9	39.2	38.8	0.0
Incr Delay (d2), s/veh	3.5	0.7	0.7	4.3	0.5	0.1	0.2	0.4	0.1	2.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.1	5.3	3.2	7.9	1.2	0.9	2.5	0.5	3.1	2.7	0.0
LnGrp Delay(d),s/veh	47.9	19.9	19.9	45.0	17.5	13.6	31.3	32.7	31.0	41.6	40.5	0.0
LnGrp LOS	D	B	B	D	B	B	C	C	C	D	D	
Approach Vol, veh/h		582			1082			177			229	
Approach Delay, s/veh		20.9			20.2			32.1			41.1	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	42.9		15.2	7.2	49.1		22.5
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	8.1	12.2		8.0	3.1	18.2		6.7
Green Ext Time (p_c), s	0.2	21.2		0.8	0.0	24.9		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		23.7
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	100	40	260	220	29	70	320	210	20	595	315
Future Volume (veh/h)	168	100	40	260	220	29	70	320	210	20	595	315
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	183	109	5	283	239	0	76	348	129	22	647	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	629	29	344	458	389	317	906	330	101	1207	0
Arrive On Green	0.13	0.18	0.18	0.19	0.25	0.00	0.36	0.36	0.36	0.36	0.36	0.00
Sat Flow, veh/h	1774	3443	157	1774	1863	1583	779	2538	925	45	3465	0
Grp Volume(v), veh/h	183	56	58	283	239	0	76	241	236	356	313	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1830	1774	1863	1583	779	1770	1693	1815	1610	0
Q Serve(g_s), s	4.5	1.2	1.2	6.9	5.0	0.0	3.9	4.6	4.7	0.0	7.0	0.0
Cycle Q Clear(g_c), s	4.5	1.2	1.2	6.9	5.0	0.0	10.9	4.6	4.7	6.9	7.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.55	0.06		0.00
Lane Grp Cap(c), veh/h	232	323	334	344	458	389	317	632	605	733	575	0
V/C Ratio(X)	0.79	0.17	0.17	0.82	0.52	0.00	0.24	0.38	0.39	0.49	0.54	0.00
Avail Cap(c_a), veh/h	787	1178	1218	1181	1653	1405	575	1217	1164	1312	1107	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.0	15.5	15.6	17.4	14.7	0.0	15.9	10.8	10.8	11.5	11.6	0.0
Incr Delay (d2), s/veh	2.2	0.1	0.1	1.9	0.3	0.0	0.1	0.1	0.2	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.6	0.6	3.6	2.6	0.0	0.8	2.2	2.2	3.5	3.1	0.0
LnGrp Delay(d),s/veh	21.2	15.6	15.6	19.3	15.1	0.0	16.0	10.9	11.0	11.7	11.9	0.0
LnGrp LOS	C	B	B	B	B		B	B	B	B	B	
Approach Vol, veh/h		297			522			553			669	
Approach Delay, s/veh		19.1			17.4			11.6			11.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	12.2		20.1	9.9	15.1		20.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	8.9	3.2		9.0	6.5	7.0		12.9
Green Ext Time (p_c), s	0.1	0.6		2.6	0.1	0.6		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	170	110	425	400	30	110	417	420	70	638	331
Future Volume (veh/h)	167	170	110	425	400	30	110	417	420	70	638	331
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	182	185	35	462	435	12	120	453	178	76	693	326
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	235	491	91	506	1126	501	165	1124	493	113	977	453
Arrive On Green	0.13	0.17	0.15	0.29	0.32	0.32	0.10	0.33	0.33	0.07	0.30	0.28
Sat Flow, veh/h	1774	2971	550	1774	3539	1576	1723	3438	1508	1723	3294	1528
Grp Volume(v), veh/h	182	109	111	462	435	12	120	453	178	76	693	326
Grp Sat Flow(s),veh/h/ln	1774	1770	1751	1774	1770	1576	1723	1719	1508	1723	1647	1528
Q Serve(g_s), s	10.1	5.6	5.8	25.6	9.7	0.5	6.9	10.4	9.2	4.4	19.1	19.6
Cycle Q Clear(g_c), s	10.1	5.6	5.8	25.6	9.7	0.5	6.9	10.4	9.2	4.4	19.1	19.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	292	289	506	1126	501	165	1124	493	113	977	454
V/C Ratio(X)	0.78	0.37	0.39	0.91	0.39	0.02	0.73	0.40	0.36	0.67	0.71	0.72
Avail Cap(c_a), veh/h	540	626	619	540	1252	557	660	1892	830	186	977	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	37.8	38.1	35.2	27.0	23.8	44.7	26.6	26.1	46.5	31.9	32.7
Incr Delay (d2), s/veh	5.4	0.8	0.8	19.3	0.2	0.0	2.3	0.2	0.4	2.6	3.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	2.8	2.9	15.3	4.7	0.2	3.4	4.9	3.9	2.2	9.1	9.1
LnGrp Delay(d),s/veh	48.1	38.6	38.9	54.5	27.2	23.9	47.0	26.8	26.6	49.1	34.9	39.5
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	C	D
Approach Vol, veh/h		402			909			751			1095	
Approach Delay, s/veh		43.0			41.0			30.0			37.2	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	37.3	33.0	20.8	13.7	34.2	17.5	36.4
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5
Max Q Clear Time (g_c+I1), s	6.4	12.4	27.6	7.8	8.9	21.6	12.1	11.7
Green Ext Time (p_c), s	0.0	19.4	0.4	4.3	0.1	4.2	0.4	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	0	20	10	20	30	20	229	0	0	214	173
Future Vol, veh/h	104	0	20	10	20	30	20	229	0	0	214	173
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	113	0	22	11	22	33	22	249	0	0	233	188
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.4	9.2	10	10.3
HCM LOS	B	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	21%	0%	84%	17%	0%	0%
Vol Thru, %	79%	100%	0%	33%	100%	0%
Vol Right, %	0%	0%	16%	50%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	153	124	60	214	173
LT Vol	20	0	104	10	0	0
Through Vol	76	153	0	20	214	0
RT Vol	0	0	20	30	0	173
Lane Flow Rate	105	166	135	65	233	188
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.166	0.259	0.216	0.1	0.351	0.247
Departure Headway (Hd)	5.721	5.616	5.775	5.544	5.529	4.823
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	630	644	624	648	654	748
Service Time	3.421	3.316	3.789	3.561	3.229	2.523
HCM Lane V/C Ratio	0.167	0.258	0.216	0.1	0.356	0.251
HCM Control Delay	9.6	10.3	10.4	9.2	11.2	9.1
HCM Lane LOS	A	B	B	A	B	A
HCM 95th-tile Q	0.6	1	0.8	0.3	1.6	1

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	203	20	10	19	30	43
Future Vol, veh/h	203	20	10	19	30	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	221	22	11	21	33	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	75	16	33	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	916	1050	1578	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	910	1050	1578	-	-	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	10		2.5		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1578	-	910	1050	-	-
HCM Lane V/C Ratio	0.007	-	0.242	0.021	-	-
HCM Control Delay (s)	7.3	0	10.2	8.5	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	278	70	220	425	70	80	454	140	50	789	185
Future Volume (veh/h)	158	278	70	220	425	70	80	454	140	50	789	185
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	172	302	52	239	462	18	87	493	61	54	858	189
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	230	598	101	297	836	357	134	1453	644	94	1118	246
Arrive On Green	0.13	0.20	0.18	0.17	0.24	0.24	0.08	0.42	0.42	0.05	0.40	0.38
Sat Flow, veh/h	1774	3014	512	1774	3539	1511	1723	3438	1523	1723	2800	617
Grp Volume(v), veh/h	172	176	178	239	462	18	87	493	61	54	527	520
Grp Sat Flow(s),veh/h/ln	1774	1770	1756	1774	1770	1511	1723	1719	1523	1723	1719	1697
Q Serve(g_s), s	9.5	9.0	9.2	13.2	11.7	0.9	5.0	9.8	2.4	3.1	27.0	27.1
Cycle Q Clear(g_c), s	9.5	9.0	9.2	13.2	11.7	0.9	5.0	9.8	2.4	3.1	27.0	27.1
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	230	351	348	297	836	357	134	1453	644	94	686	678
V/C Ratio(X)	0.75	0.50	0.51	0.80	0.55	0.05	0.65	0.34	0.09	0.58	0.77	0.77
Avail Cap(c_a), veh/h	356	555	551	403	1204	514	169	1633	723	181	828	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	36.3	36.6	40.7	34.1	30.0	45.5	19.8	17.7	46.9	26.5	26.7
Incr Delay (d2), s/veh	4.8	1.1	1.2	8.3	0.6	0.1	5.7	0.1	0.1	5.5	3.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.5	4.6	7.1	5.8	0.4	2.6	4.7	1.0	1.6	13.4	13.3
LnGrp Delay(d),s/veh	47.5	37.4	37.7	49.0	34.7	30.1	51.2	19.9	17.7	52.5	30.1	30.4
LnGrp LOS	D	D	D	D	C	C	D	B	B	D	C	C
Approach Vol, veh/h		526			719			641			1101	
Approach Delay, s/veh		40.8			39.3			24.0			31.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	24.2	11.9	44.6	17.2	28.0	9.5	47.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.6	30.4	8.5	47.5	18.9	33.1	9.2	46.8
Max Q Clear Time (g_c+I1), s	15.2	11.2	7.0	29.1	11.5	13.7	5.1	11.8
Green Ext Time (p_c), s	0.4	5.0	0.0	10.0	0.2	5.0	0.0	13.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	210	885	1138	20	30	600
Future Volume (vph)	210	885	1138	20	30	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3429		1770	1583
Flt Permitted	0.13	1.00	1.00		0.95	1.00
Satd. Flow (perm)	231	3438	3429		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	962	1237	22	33	652
RTOR Reduction (vph)	0	0	1	0	0	379
Lane Group Flow (vph)	228	962	1258	0	33	273
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	59.2	63.8	48.2		18.4	18.4
Effective Green, g (s)	60.4	64.4	48.8		18.6	18.6
Actuated g/C Ratio	0.66	0.71	0.54		0.20	0.20
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	343	2433	1838		361	323
v/s Ratio Prot	c0.08	0.28	c0.37		0.02	
v/s Ratio Perm	0.36					c0.17
v/c Ratio	0.66	0.40	0.68		0.09	0.85
Uniform Delay, d1	11.3	5.4	15.5		29.3	34.8
Progression Factor	1.20	0.31	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.1	1.1		0.0	17.4
Delay (s)	17.1	1.7	16.5		29.4	52.3
Level of Service	B	A	B		C	D
Approach Delay (s)		4.7	16.5		51.2	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	220	20	1015	460	320	20	333	965	170	295	20
Future Volume (veh/h)	30	220	20	1015	460	320	20	333	965	170	295	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	33	239	18	1103	500	0	22	362	799	185	321	19
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	79	579	43	1199	1690	756	71	837	1630	315	979	58
Arrive On Green	0.04	0.17	0.16	0.36	0.49	0.00	0.04	0.24	0.24	0.09	0.30	0.28
Sat Flow, veh/h	1774	3339	250	3343	3438	1538	1723	3438	2707	3343	3300	194
Grp Volume(v), veh/h	33	126	131	1103	500	0	22	362	799	185	167	173
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1672	1719	1538	1723	1719	1354	1672	1719	1775
Q Serve(g_s), s	2.3	8.0	8.2	40.1	11.0	0.0	1.6	11.3	21.1	6.7	9.6	9.7
Cycle Q Clear(g_c), s	2.3	8.0	8.2	40.1	11.0	0.0	1.6	11.3	21.1	6.7	9.6	9.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	79	307	316	1199	1690	756	71	837	1630	315	510	526
V/C Ratio(X)	0.42	0.41	0.42	0.92	0.30	0.00	0.31	0.43	0.49	0.59	0.33	0.33
Avail Cap(c_a), veh/h	154	642	660	1212	2196	982	353	976	1739	817	556	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	46.6	46.8	38.9	19.2	0.0	59.0	40.6	14.2	55.1	34.8	34.9
Incr Delay (d2), s/veh	1.3	1.9	1.9	11.8	0.2	0.0	0.9	0.4	0.2	3.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.1	4.2	20.3	5.3	0.0	0.8	5.4	7.9	3.3	4.6	4.8
LnGrp Delay(d),s/veh	60.3	48.5	48.6	50.7	19.4	0.0	60.0	40.9	14.5	58.8	35.1	35.2
LnGrp LOS	E	D	D	D	B		E	D	B	E	D	D
Approach Vol, veh/h		290			1603			1183			525	
Approach Delay, s/veh		49.9			40.9			23.4			43.5	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.5	26.5	9.2	41.6	9.6	66.4	16.0	34.9
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	42.1	10.2	3.6	11.7	4.3	13.0	8.7	23.1
Green Ext Time (p_c), s	1.4	10.4	0.0	9.1	0.0	11.9	1.2	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	570	80	208	40	1402	280	262	1733	20
Future Volume (veh/h)	0	0	20	570	80	208	40	1402	280	262	1733	20
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				682	0	144	43	1524	0	285	1884	21
Adj No. of Lanes				2	0	1	1	2	1	1	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				834	0	366	149	1876	797	265	2475	28
Arrive On Green				0.23	0.00	0.23	0.50	0.50	0.00	0.15	0.69	0.69
Sat Flow, veh/h				3548	0	1559	235	3725	1583	1774	3585	40
Grp Volume(v), veh/h				682	0	144	43	1524	0	285	928	977
Grp Sat Flow(s),veh/h/ln				1774	0	1559	235	1863	1583	1774	1770	1856
Q Serve(g_s), s				19.5	0.0	8.3	15.7	36.8	0.0	16.0	36.6	36.8
Cycle Q Clear(g_c), s				19.5	0.0	8.3	32.5	36.8	0.0	16.0	36.6	36.8
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h				834	0	366	149	1876	797	265	1222	1281
V/C Ratio(X)				0.82	0.00	0.39	0.29	0.81	0.00	1.08	0.76	0.76
Avail Cap(c_a), veh/h				1193	0	524	153	1948	828	265	1256	1317
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				38.8	0.0	34.5	28.0	22.3	0.0	45.5	10.8	10.8
Incr Delay (d2), s/veh				2.0	0.0	0.3	0.4	2.4	0.0	76.6	2.4	2.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.8	0.0	3.6	1.0	19.5	0.0	13.4	18.3	19.3
LnGrp Delay(d),s/veh				40.8	0.0	34.8	28.4	24.8	0.0	122.2	13.2	13.2
LnGrp LOS				D		C	C	C		F	B	B
Approach Vol, veh/h					826			1567			2190	
Approach Delay, s/veh					39.8			24.9			27.3	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	57.9				77.9		29.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	18.0	38.8				38.8		21.5
Green Ext Time (p_c), s	0.0	15.1				28.9		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	904	0	0	818	1140	1183
Future Volume (vph)	904	0	0	818	1140	1183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	983	0	0	889	1239	1286
RTOR Reduction (vph)	0	0	0	48	0	629
Lane Group Flow (vph)	983	0	0	841	1239	657
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	17.9			27.1	27.1	28.1
Effective Green, g (s)	18.9			28.1	28.1	28.1
Actuated g/C Ratio	0.34			0.51	0.51	0.51
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1714			1423	1753	1423
v/s Ratio Prot	c0.20			0.30	c0.36	0.24
v/s Ratio Perm						
v/c Ratio	0.57			0.59	0.71	0.46
Uniform Delay, d1	14.8			9.4	10.3	8.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.7	1.3	0.2
Delay (s)	15.2			10.1	11.6	8.8
Level of Service	B			B	B	A
Approach Delay (s)		15.2	10.1		10.2	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	589	620	340	290	640	250	590	279	250	210	410	760
Future Volume (veh/h)	589	620	340	290	640	250	590	279	250	210	410	760
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	640	674	321	315	696	0	641	303	143	228	446	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	369	562	268	300	1061	474	369	434	200	504	478	0
Arrive On Green	0.11	0.24	0.24	0.17	0.31	0.00	0.21	0.18	0.18	0.29	0.26	0.00
Sat Flow, veh/h	3442	2328	1109	1723	3438	1538	1774	2355	1086	1723	1810	0
Grp Volume(v), veh/h	640	512	483	315	696	0	641	226	220	228	446	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1667	1723	1719	1538	1774	1770	1671	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	26.2	0.0	31.0	17.8	18.5	16.1	35.9	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	26.2	0.0	31.0	17.8	18.5	16.1	35.9	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.65	1.00		0.00
Lane Grp Cap(c), veh/h	369	427	402	300	1061	474	369	326	308	504	478	0
V/C Ratio(X)	1.73	1.20	1.20	1.05	0.66	0.00	1.74	0.69	0.71	0.45	0.93	0.00
Avail Cap(c_a), veh/h	369	427	402	300	1061	474	369	546	515	504	498	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	66.6	56.6	56.8	61.6	44.7	0.0	59.1	56.9	57.4	43.0	53.5	0.0
Incr Delay (d2), s/veh	341.1	110.3	111.4	65.1	2.7	0.0	343.3	9.2	10.6	0.2	26.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.1	30.7	29.0	17.8	12.9	0.0	50.3	9.6	9.5	7.7	21.5	0.0
LnGrp Delay(d),s/veh	407.6	166.9	168.2	126.7	47.4	0.0	402.3	66.1	68.0	43.2	80.0	0.0
LnGrp LOS	F	F	F	F	D		F	E	E	D	F	
Approach Vol, veh/h		1635			1011			1087			674	
Approach Delay, s/veh		261.5			72.1			264.8			67.6	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	35.0	44.1	20.0	50.0	47.6	31.5
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	18.0	38.0	33.0	37.9	18.0	28.2	18.1	20.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	15.0	2.6	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	189.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	830	0	0	1170	70	70	864	110	0	0	0
Future Volume (veh/h)	240	830	0	0	1170	70	70	864	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	261	902	0	0	1272	71	76	939	41			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	333	2166	0	0	1604	89	531	1059	462			
Arrive On Green	0.19	1.00	0.00	0.00	0.47	0.46	0.30	0.30	0.30			
Sat Flow, veh/h	3442	3632	0	0	3501	190	1774	3539	1545			
Grp Volume(v), veh/h	261	902	0	0	660	683	76	939	41			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1828	1774	1770	1545			
Q Serve(g_s), s	6.5	0.0	0.0	0.0	28.3	28.4	2.8	22.8	1.7			
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.0	28.3	28.4	2.8	22.8	1.7			
Prop In Lane	1.00		0.00	0.00		0.10	1.00		1.00			
Lane Grp Cap(c), veh/h	333	2166	0	0	833	861	531	1059	462			
V/C Ratio(X)	0.78	0.42	0.00	0.00	0.79	0.79	0.14	0.89	0.09			
Avail Cap(c_a), veh/h	344	2166	0	0	833	861	552	1101	481			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	35.4	0.0	0.0	0.0	20.1	20.2	23.1	30.1	22.7			
Incr Delay (d2), s/veh	1.1	0.1	0.0	0.0	7.6	7.5	0.1	8.9	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.0	15.5	16.0	1.4	12.4	0.7			
LnGrp Delay(d),s/veh	36.5	0.1	0.0	0.0	27.7	27.6	23.2	39.0	22.8			
LnGrp LOS	D	A			C	C	C	D	C			
Approach Vol, veh/h		1163			1343			1056				
Approach Delay, s/veh		8.2			27.7			37.2				
Approach LOS		A			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		59.1			12.7	46.4		30.9
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		53.1			* 8.8	40.1		27.8
Max Q Clear Time (g_c+I1), s		2.0			8.5	30.4		24.8
Green Ext Time (p_c), s		31.2			0.0	8.4		1.9

Intersection Summary		
HCM 2010 Ctrl Delay		24.2
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	850	80	310	930	0	0	0	0	210	1683	490
Future Volume (veh/h)	0	850	80	310	930	0	0	0	0	210	1683	490
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	924	0	337	1011	0				228	1829	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	944	0	256	1612	0				174	1472	721
Arrive On Green	0.00	0.27	0.00	0.29	0.91	0.00				0.46	0.46	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				381	3232	1583
Grp Volume(v), veh/h	0	924	0	337	1011	0				1103	954	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1844	1770	1583
Q Serve(g_s), s	0.0	23.3	0.0	13.0	5.3	0.0				41.0	41.0	0.0
Cycle Q Clear(g_c), s	0.0	23.3	0.0	13.0	5.3	0.0				41.0	41.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.21		1.00
Lane Grp Cap(c), veh/h	0	944	0	256	1612	0				840	806	721
V/C Ratio(X)	0.00	0.98	0.00	1.32	0.63	0.00				1.31	1.18	0.00
Avail Cap(c_a), veh/h	0	944	0	256	1612	0				840	806	721
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.51	0.51	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	32.8	0.0	32.0	2.4	0.0				24.5	24.5	0.0
Incr Delay (d2), s/veh	0.0	24.7	0.0	155.4	1.0	0.0				149.6	94.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.5	0.0	17.3	2.2	0.0				55.7	41.2	0.0
LnGrp Delay(d),s/veh	0.0	57.4	0.0	187.4	3.4	0.0				174.1	119.4	0.0
LnGrp LOS		E		F	A					F	F	
Approach Vol, veh/h		924			1348						2057	
Approach Delay, s/veh		57.4			49.4						148.7	
Approach LOS		E			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.0	28.0		45.0		45.0		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 13	23.1		* 41		40.1		
Max Q Clear Time (g_c+I1), s	15.0	25.3		43.0		7.3		
Green Ext Time (p_c), s	0.0	0.0		0.0		20.4		

Intersection Summary		
HCM 2010 Ctrl Delay		98.3
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	550	290	611	390	110	260	976	700	120	670	140
Future Volume (veh/h)	230	550	290	611	390	110	260	976	700	120	670	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	598	190	664	424	103	283	1061	439	130	728	140
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	313	730	326	723	921	222	312	1262	564	159	800	154
Arrive On Green	0.09	0.21	0.21	0.22	0.33	0.32	0.18	0.36	0.36	0.09	0.27	0.26
Sat Flow, veh/h	3343	3438	1534	3343	2749	662	1774	3539	1583	1774	2960	569
Grp Volume(v), veh/h	250	598	190	664	264	263	283	1061	439	130	435	433
Grp Sat Flow(s),veh/h/ln	1672	1719	1534	1672	1719	1693	1774	1770	1583	1774	1770	1760
Q Serve(g_s), s	9.3	21.2	14.2	24.8	15.4	15.7	20.0	35.2	31.5	9.2	30.4	30.4
Cycle Q Clear(g_c), s	9.3	21.2	14.2	24.8	15.4	15.7	20.0	35.2	31.5	9.2	30.4	30.4
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	313	730	326	723	576	567	312	1262	564	159	478	475
V/C Ratio(X)	0.80	0.82	0.58	0.92	0.46	0.46	0.91	0.84	0.78	0.82	0.91	0.91
Avail Cap(c_a), veh/h	550	970	433	812	576	567	431	1262	564	431	499	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	47.9	45.2	48.9	33.3	33.7	51.6	37.7	36.6	57.1	45.1	45.3
Incr Delay (d2), s/veh	3.5	3.2	0.6	13.6	0.2	0.2	15.2	5.3	6.8	3.9	20.3	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	10.4	6.1	12.8	7.4	7.4	11.1	18.0	14.9	4.7	17.6	17.5
LnGrp Delay(d),s/veh	60.2	51.1	45.8	62.5	33.6	33.9	66.8	43.0	43.4	61.0	65.4	65.8
LnGrp LOS	E	D	D	E	C	C	E	D	D	E	E	E
Approach Vol, veh/h		1038			1191			1783			998	
Approach Delay, s/veh		52.3			49.8			46.9			65.0	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	49.5	31.6	31.1	26.5	38.5	16.0	46.8
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	11.2	37.2	26.8	23.2	22.0	32.4	11.3	17.7
Green Ext Time (p_c), s	0.1	0.0	0.6	2.5	0.3	0.8	0.4	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	52.3
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	242.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	110	40	110	230	0	0	0	0	761	0	50
Future Vol, veh/h	0	110	40	110	230	0	0	0	0	761	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	40	100	-	-	-	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	116	42	116	242	0	0	0	0	801	0	53

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	116	0	0				590	590	242
Stage 1	-	-	-	-	-	-				474	474	-
Stage 2	-	-	-	-	-	-				116	116	-
Critical Hdwy	-	-	-	4.12	-	-				6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-				5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-				3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1473	-	0				~ 470	420	797
Stage 1	0	-	-	-	-	0				~ 626	558	-
Stage 2	0	-	-	-	-	0				909	800	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1473	-	-				~ 433	0	797
Mov Cap-2 Maneuver	-	-	-	-	-	-				~ 433	0	-
Stage 1	-	-	-	-	-	-				~ 577	0	-
Stage 2	-	-	-	-	-	-				909	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	$ 388.2
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1473	-	433	797
HCM Lane V/C Ratio	-	-	0.079	-	1.85	0.066
HCM Control Delay (s)	-	-	7.7	-	$ 413.1	9.8
HCM Lane LOS	-	-	A	-	F	A
HCM 95th %tile Q(veh)	-	-	0.3	-	51.8	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	851	0	0	190	537	150	0	70	0	0	0
Future Vol, veh/h	20	851	0	0	190	537	150	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	-	-	50	220	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	896	0	0	200	565	158	0	74	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	200	0	-	-	-	0	1138	1138	896
Stage 1	-	-	-	-	-	-	938	938	-
Stage 2	-	-	-	-	-	-	200	200	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1372	-	0	0	-	-	223	201	339
Stage 1	-	-	0	0	-	-	381	343	-
Stage 2	-	-	0	0	-	-	834	736	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1372	-	-	-	-	-	220	0	339
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	0	-
Stage 1	-	-	-	-	-	-	375	0	-
Stage 2	-	-	-	-	-	-	834	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	43
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	220	339	1372	-	-	-
HCM Lane V/C Ratio	0.718	0.217	0.015	-	-	-
HCM Control Delay (s)	54.4	18.5	7.7	-	-	-
HCM Lane LOS	F	C	A	-	-	-
HCM 95th %tile Q(veh)	4.7	0.8	0	-	-	-

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	530	0	0	260	346	10	10	230	0	0	0
Future Vol, veh/h	20	530	0	0	260	346	10	10	230	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	558	0	0	274	364	11	11	242	0	0	0
Number of Lanes	1	2	0	0	1	1	0	1	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	15	18.4	16
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	50%	0%	100%	0%	0%	0%	0%
Vol Thru, %	50%	0%	0%	100%	100%	100%	0%
Vol Right, %	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	230	20	265	265	260	346
LT Vol	10	0	20	0	0	0	0
Through Vol	10	0	0	265	265	260	0
RT Vol	0	230	0	0	0	0	346
Lane Flow Rate	21	242	21	279	279	274	364
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.048	0.482	0.045	0.553	0.416	0.53	0.633
Departure Headway (Hd)	8.14	7.174	7.648	7.139	5.371	6.971	6.258
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	504	469	505	669	517	575
Service Time	5.884	4.917	5.387	4.877	3.11	4.71	3.997
HCM Lane V/C Ratio	0.048	0.48	0.045	0.552	0.417	0.53	0.633
HCM Control Delay	11.3	16.4	10.7	18.4	11.9	17.3	19.2
HCM Lane LOS	B	C	B	C	B	C	C
HCM 95th-tile Q	0.2	2.6	0.1	3.3	2.1	3.1	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	680	0	0	0	516	80	0	0	140	90
Future Volume (veh/h)	80	0	680	0	0	0	516	80	0	0	140	90
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1900	1863	1863
Adj Flow Rate, veh/h	86	0	289				555	86	0	0	151	21
Adj No. of Lanes	1	0	1				1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	375	0	335				618	1139	0	0	325	276
Arrive On Green	0.21	0.00	0.21				0.35	0.61	0.00	0.00	0.17	0.17
Sat Flow, veh/h	1774	0	1583				1774	1863	0	0	1863	1583
Grp Volume(v), veh/h	86	0	289				555	86	0	0	151	21
Grp Sat Flow(s),veh/h/ln	1774	0	1583				1774	1863	0	0	1863	1583
Q Serve(g_s), s	1.8	0.0	8.0				13.4	0.9	0.0	0.0	3.3	0.5
Cycle Q Clear(g_c), s	1.8	0.0	8.0				13.4	0.9	0.0	0.0	3.3	0.5
Prop In Lane	1.00		1.00				1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	375	0	335				618	1139	0	0	325	276
V/C Ratio(X)	0.23	0.00	0.86				0.90	0.08	0.00	0.00	0.46	0.08
Avail Cap(c_a), veh/h	941	0	840				792	2482	0	0	2482	2110
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	17.2				14.0	3.6	0.0	0.0	16.8	15.6
Incr Delay (d2), s/veh	0.1	0.0	2.6				9.5	0.1	0.0	0.0	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.7				8.1	0.5	0.0	0.0	1.8	0.2
LnGrp Delay(d),s/veh	14.9	0.0	19.8				23.5	3.7	0.0	0.0	17.9	15.7
LnGrp LOS	B		B				C	A			B	B
Approach Vol, veh/h		375						641			172	
Approach Delay, s/veh		18.7						20.8			17.6	
Approach LOS		B						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.7		13.6	19.8	11.9		
Change Period (Y+Rc), s		4.3		3.5	* 4.2	4.3		
Max Green Setting (Gmax), s		60.0		24.5	* 20	60.0		
Max Q Clear Time (g_c+I1), s		2.9		10.0	15.4	5.3		
Green Ext Time (p_c), s		2.3		0.2	0.2	2.3		

Intersection Summary			
HCM 2010 Ctrl Delay			19.7
HCM 2010 LOS			B

Notes

Intersection	
Intersection Delay, s/veh	161.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	370	20	0	10	30	10	10	47	10	10	54	897
Future Vol, veh/h	370	20	0	10	30	10	10	47	10	10	54	897
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	402	22	0	11	33	11	11	51	11	11	59	975
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	28.3	12.1	11.5	233.3
HCM LOS	D	B	B	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	95%	20%	1%
Vol Thru, %	70%	5%	60%	6%
Vol Right, %	15%	0%	20%	93%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	390	50	961
LT Vol	10	370	10	10
Through Vol	47	20	30	54
RT Vol	10	0	10	897
Lane Flow Rate	73	424	54	1045
Geometry Grp	1	1	1	1
Degree of Util (X)	0.133	0.739	0.104	1.467
Departure Headway (Hd)	7.343	7.31	8.124	5.056
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	492	500	444	721
Service Time	5.343	5.31	6.124	3.136
HCM Lane V/C Ratio	0.148	0.848	0.122	1.449
HCM Control Delay	11.5	28.3	12.1	233.3
HCM Lane LOS	B	D	B	F
HCM 95th-tile Q	0.5	6.1	0.3	48.8

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	120	30	393	194	10	20	10	190	10	20	20
Future Vol, veh/h	10	120	30	393	194	10	20	10	190	10	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	130	33	427	211	11	22	11	207	11	22	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	222	0	0	163	0	0	1260	1244	149	1350	1256	216
Stage 1	-	-	-	-	-	-	168	168	-	1071	1071	-
Stage 2	-	-	-	-	-	-	1092	1076	-	279	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1347	-	-	1416	-	-	147	174	898	128	171	824
Stage 1	-	-	-	-	-	-	834	759	-	267	297	-
Stage 2	-	-	-	-	-	-	260	296	-	728	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1347	-	-	1414	-	-	89	113	897	67	111	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	113	-	67	111	-
Stage 1	-	-	-	-	-	-	826	752	-	265	195	-
Stage 2	-	-	-	-	-	-	147	194	-	546	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	5.7	24.4	45.7
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	1347	-	-	1414	-	-	141
HCM Lane V/C Ratio	0.571	0.008	-	-	0.302	-	-	0.385
HCM Control Delay (s)	24.4	7.7	0	-	8.6	0	-	45.7
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	3.5	0	-	-	1.3	-	-	1.6

Intersection	
Int Delay, s/veh	8.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	230	260	47	150	603
Future Vol, veh/h	54	230	260	47	150	603
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	250	283	51	163	655

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1290	308	0	0	334	0
Stage 1	308	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	180	732	-	-	1225	-
Stage 1	745	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	142	732	-	-	1225	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	287	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.3	0	1.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	409	1225	-
HCM Lane V/C Ratio	-	-	0.755	0.133	-
HCM Control Delay (s)	-	-	36.3	8.4	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	6.2	0.5	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	445	830	170	157	266	220	150	290	438	252	80
Future Volume (veh/h)	190	445	830	170	157	266	220	150	290	438	252	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	192	449	590	172	159	195	222	152	36	442	255	12
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	1553	694	291	1502	669	342	429	99	550	744	333
Arrive On Green	0.09	0.44	0.44	0.08	0.42	0.42	0.10	0.15	0.14	0.16	0.21	0.21
Sat Flow, veh/h	3442	3539	1581	3442	3539	1576	3442	2850	657	3442	3539	1583
Grp Volume(v), veh/h	192	449	590	172	159	195	222	93	95	442	255	12
Grp Sat Flow(s),veh/h/ln	1721	1770	1581	1721	1770	1576	1721	1770	1737	1721	1770	1583
Q Serve(g_s), s	5.2	7.8	32.2	4.6	2.6	7.8	6.0	4.5	4.8	11.9	5.9	0.6
Cycle Q Clear(g_c), s	5.2	7.8	32.2	4.6	2.6	7.8	6.0	4.5	4.8	11.9	5.9	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	311	1553	694	291	1502	669	342	267	262	550	744	333
V/C Ratio(X)	0.62	0.29	0.85	0.59	0.11	0.29	0.65	0.35	0.36	0.80	0.34	0.04
Avail Cap(c_a), veh/h	572	1912	854	572	1912	851	679	864	848	679	1728	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	17.4	24.2	42.5	16.7	18.2	41.7	36.6	36.9	39.0	32.3	30.2
Incr Delay (d2), s/veh	0.7	0.1	7.2	0.7	0.0	0.1	0.8	1.2	1.3	4.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.8	15.3	2.2	1.3	3.4	2.9	2.3	2.4	6.0	2.9	0.3
LnGrp Delay(d),s/veh	42.9	17.5	31.4	43.2	16.7	18.3	42.5	37.9	38.2	43.5	32.8	30.3
LnGrp LOS	D	B	C	D	B	B	D	D	D	D	C	C
Approach Vol, veh/h		1231			526			410			709	
Approach Delay, s/veh		28.1			26.0			40.5			39.4	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	46.2	13.6	24.3	12.7	45.7	19.4	18.5
Change Period (Y+Rc), s	5.5	5.3	5.5	* 4.8	5.5	* 5.3	* 5.3	* 4.8
Max Green Setting (Gmax), s	14.5	50.7	17.5	* 46	14.5	* 52	* 18	* 46
Max Q Clear Time (g_c+I1), s	6.6	34.2	8.0	7.9	7.2	9.8	13.9	6.8
Green Ext Time (p_c), s	0.1	6.8	0.1	4.7	0.1	8.9	0.2	4.7

Intersection Summary			
HCM 2010 Ctrl Delay			32.3
HCM 2010 LOS			C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1173	230	69	563	353	70	30	65	356	10	10
Future Volume (veh/h)	200	1173	230	69	563	353	70	30	65	356	10	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	215	1261	174	74	605	337	75	32	45	383	11	8
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	1613	719	86	810	451	507	206	578	493	12	9
Arrive On Green	0.13	0.46	0.46	0.05	0.37	0.36	0.37	0.37	0.37	0.37	0.37	0.36
Sat Flow, veh/h	1774	3539	1578	1774	2191	1220	1210	561	1576	1129	32	24
Grp Volume(v), veh/h	215	1261	174	74	489	453	107	0	45	402	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1578	1774	1770	1641	1771	0	1576	1185	0	0
Q Serve(g_s), s	11.6	29.3	6.6	4.0	23.4	23.5	0.0	0.0	1.8	28.2	0.0	0.0
Cycle Q Clear(g_c), s	11.6	29.3	6.6	4.0	23.4	23.5	3.9	0.0	1.8	32.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.74	0.70		1.00	0.95		0.02
Lane Grp Cap(c), veh/h	239	1613	719	86	654	607	713	0	578	513	0	0
V/C Ratio(X)	0.90	0.78	0.24	0.86	0.75	0.75	0.15	0.00	0.08	0.78	0.00	0.00
Avail Cap(c_a), veh/h	365	1613	719	365	764	709	872	0	745	647	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.4	22.4	16.2	45.9	26.7	26.9	20.7	0.0	20.1	31.1	0.0	0.0
Incr Delay (d2), s/veh	12.8	2.7	0.2	8.9	3.7	4.0	0.0	0.0	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	14.8	2.9	2.2	12.1	11.3	1.9	0.0	0.8	10.8	0.0	0.0
LnGrp Delay(d),s/veh	54.2	25.0	16.4	54.8	30.4	30.9	20.7	0.0	20.1	34.8	0.0	0.0
LnGrp LOS	D	C	B	D	C	C	C		C	C		
Approach Vol, veh/h		1650			1016			152			402	
Approach Delay, s/veh		27.9			32.4			20.5			34.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	48.3		40.2	17.1	39.9		40.2
Change Period (Y+Rc), s	3.5	4.6		5.0	3.5	4.6		* 5
Max Green Setting (Gmax), s	20.5	41.4		45.0	20.5	41.4		* 46
Max Q Clear Time (g_c+I1), s	6.0	31.3		34.1	13.6	25.5		5.9
Green Ext Time (p_c), s	0.0	8.9		1.1	0.0	9.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Notes

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	45	10	190	39	46	10	264	280	100	404	0
Future Vol, veh/h	20	45	10	190	39	46	10	264	280	100	404	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	49	11	207	42	50	11	287	304	109	439	0
Number of Lanes	0	1	0	1	1	0	0	1	1	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	13.4	16.3	17.5	18.2
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	27%	100%	0%	43%	0%
Vol Thru, %	96%	0%	60%	0%	46%	57%	100%
Vol Right, %	0%	100%	13%	0%	54%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	274	280	75	190	85	235	269
LT Vol	10	0	20	190	0	100	0
Through Vol	264	0	45	0	39	135	269
RT Vol	0	280	10	0	46	0	0
Lane Flow Rate	298	304	82	207	92	255	293
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.582	0.532	0.19	0.474	0.189	0.514	0.572
Departure Headway (Hd)	7.029	6.293	8.379	8.271	7.37	7.251	7.032
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	572	428	436	487	497	512
Service Time	4.77	4.035	6.433	6.015	5.113	4.993	4.774
HCM Lane V/C Ratio	0.582	0.531	0.192	0.475	0.189	0.513	0.572
HCM Control Delay	19.1	16	13.4	18.3	11.8	17.5	18.8
HCM Lane LOS	C	C	B	C	B	C	C
HCM 95th-tile Q	3.7	3.1	0.7	2.5	0.7	2.9	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	459	445	44	376	6	349	418	53	12	472	250
Future Volume (veh/h)	270	459	445	44	376	6	349	418	53	12	472	250
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	499	366	48	409	7	379	454	58	13	513	154
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1046	456	62	562	242	405	1880	825	14	579	480
Arrive On Green	0.18	0.30	0.30	0.04	0.16	0.16	0.23	0.53	0.53	0.01	0.31	0.31
Sat Flow, veh/h	1774	3539	1543	1774	3539	1524	1774	3539	1552	1774	1863	1544
Grp Volume(v), veh/h	293	499	366	48	409	7	379	454	58	13	513	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1543	1774	1770	1524	1774	1770	1552	1774	1863	1544
Q Serve(g_s), s	20.6	14.6	27.7	3.4	13.9	0.5	26.5	8.7	2.3	0.9	33.1	9.7
Cycle Q Clear(g_c), s	20.6	14.6	27.7	3.4	13.9	0.5	26.5	8.7	2.3	0.9	33.1	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1046	456	62	562	242	405	1880	825	14	579	480
V/C Ratio(X)	0.94	0.48	0.80	0.77	0.73	0.03	0.94	0.24	0.07	0.96	0.89	0.32
Avail Cap(c_a), veh/h	435	1147	500	224	727	313	505	1986	871	84	604	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	36.5	41.2	60.5	50.6	45.0	47.9	15.9	14.4	62.8	41.5	33.4
Incr Delay (d2), s/veh	20.6	0.1	7.5	18.0	2.6	0.0	20.7	0.2	0.1	59.0	14.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	7.2	12.8	2.0	7.0	0.2	15.3	4.3	1.0	0.7	19.3	4.2
LnGrp Delay(d),s/veh	72.1	36.7	48.7	78.5	53.2	45.0	68.6	16.1	14.5	121.8	55.9	33.8
LnGrp LOS	E	D	D	E	D	D	E	B	B	F	E	C
Approach Vol, veh/h		1158			464			891			680	
Approach Delay, s/veh		49.4			55.7			38.4			52.2	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	71.2	8.4	41.9	32.9	43.3	26.2	24.1
Change Period (Y+Rc), s	3.5	4.3	4.0	* 4	* 4.2	4.3	3.5	4.0
Max Green Setting (Gmax), s	6.5	70.7	16.0	* 42	* 36	40.7	31.5	26.0
Max Q Clear Time (g_c+I1), s	2.9	10.7	5.4	29.7	28.5	35.1	22.6	15.9
Green Ext Time (p_c), s	0.0	15.6	0.0	3.3	0.1	3.9	0.1	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.8
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	37.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	90	339	225	240	604	90
Future Vol, veh/h	90	339	225	240	604	90
Conflicting Peds, #/hr	10	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	368	245	261	657	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1287	667	657	0	-	0
Stage 1	657	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	168	458	928	-	-	0
Stage 1	515	-	-	-	-	0
Stage 2	494	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	123	454	920	-	-	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	125	5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	920	-	404	-
HCM Lane V/C Ratio	0.266	-	1.154	-
HCM Control Delay (s)	10.3	-	125	-
HCM Lane LOS	B	-	F	-
HCM 95th %tile Q(veh)	1.1	-	17.7	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	257	329	137	211	20	164	475	129	10	361	22
Future Vol, veh/h	20	257	329	137	211	20	164	475	129	10	361	22
Conflicting Peds, #/hr	0	0	10	0	0	10	0	0	10	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	279	358	149	229	22	178	516	140	11	392	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1175	1459	228	1321	1401	348	426	0	0	667	0	0
Stage 1	436	436	-	953	953	-	-	-	-	-	-	-
Stage 2	739	1023	-	368	448	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	147	~ 128	775	~ 115	~ 139	648	1130	-	-	919	-	-
Stage 1	569	578	-	278	336	-	-	-	-	-	-	-
Stage 2	375	311	-	624	571	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 92	762	-	~ 100	637	1121	-	-	911	-	-
Mov Cap-2 Maneuver	-	~ 92	-	-	~ 100	-	-	-	-	-	-	-
Stage 1	420	564	-	205	248	-	-	-	-	-	-	-
Stage 2	~ 20	~ 229	-	163	557	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2.3	0.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	-	250	-	116	911	-	-
HCM Lane V/C Ratio	0.159	-	-	-	1.989	-	1.176	0.012	-	-
HCM Control Delay (s)	8.8	0.7	-	-	$ 491.8	-	209.8	9	0.1	-
HCM Lane LOS	A	A	-	-	F	-	F	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	-	36.1	-	8.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	35	170	68	29	8	180	742	181	12	859	30
Future Vol, veh/h	10	35	170	68	29	8	180	742	181	12	859	30
Conflicting Peds, #/hr	10	0	10	0	0	0	0	0	0	0	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	92	94	92	92	92	94	94	92	92	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	38	181	74	32	9	191	789	197	13	914	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1769	2335	493	1783	2253	503	956	0	0	986	0	0
Stage 1	966	966	-	1271	1271	-	-	-	-	-	-	-
Stage 2	803	1369	-	512	982	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	53	~ 36	522	~ 52	41	514	715	-	-	696	-	-
Stage 1	273	331	-	178	237	-	-	-	-	-	-	-
Stage 2	343	213	-	513	325	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 13	513	-	~ 15	510	709	-	-	690	-	-
Mov Cap-2 Maneuver	-	~ 13	-	-	~ 15	-	-	-	-	-	-	-
Stage 1	101	315	-	~ 67	89	-	-	-	-	-	-	-
Stage 2	81	80	-	278	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			3.6	0.1
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	-	-	690	-	-
HCM Lane V/C Ratio	0.27	-	-	-	-	0.019	-	-
HCM Control Delay (s)	11.9	2.5	-	-	-	10.3	-	-
HCM Lane LOS	B	A	-	-	-	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-	-	-	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	846	230	0	733	974	0	0	0	792	10	210
Future Volume (veh/h)	0	846	230	0	733	974	0	0	0	792	10	210
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	0	1810	1810				1863	1863	1863
Adj Flow Rate, veh/h	0	872	0	0	756	0				823	0	83
Adj No. of Lanes	0	3	0	0	2	1				2	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	5	5	0	5	5				2	2	2
Cap, veh/h	0	2295	0	0	1597	715				1241	0	554
Arrive On Green	0.00	0.46	0.00	0.00	0.46	0.00				0.35	0.00	0.35
Sat Flow, veh/h	0	5266	0	0	3529	1538				3548	0	1583
Grp Volume(v), veh/h	0	872	0	0	756	0				823	0	83
Grp Sat Flow(s),veh/h/ln	0	1647	0	0	1719	1538				1774	0	1583
Q Serve(g_s), s	0.0	4.9	0.0	0.0	6.5	0.0				8.5	0.0	1.6
Cycle Q Clear(g_c), s	0.0	4.9	0.0	0.0	6.5	0.0				8.5	0.0	1.6
Prop In Lane	0.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2295	0	0	1597	715				1241	0	554
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.47	0.00				0.66	0.00	0.15
Avail Cap(c_a), veh/h	0	6993	0	0	4867	2177				2552	0	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	0.0	0.0	7.9	0.0				11.9	0.0	9.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0				0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.0	0.0	3.1	0.0				4.2	0.0	0.7
LnGrp Delay(d),s/veh	0.0	7.5	0.0	0.0	8.0	0.0				12.1	0.0	9.7
LnGrp LOS		A			A					B		A
Approach Vol, veh/h		872			756						906	
Approach Delay, s/veh		7.5			8.0						11.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		24.0		19.1		24.0		
Change Period (Y+Rc), s		6.8		6.8		6.8		
Max Green Setting (Gmax), s		58.2		28.2		58.2		
Max Q Clear Time (g_c+I1), s		6.9		10.5		8.5		
Green Ext Time (p_c), s		8.7		1.8		8.7		

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1438	190	0	1577	644	130	0	1469	0	0	0
Future Volume (vph)	10	1438	190	0	1577	644	130	0	1469	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.91			0.91			1.00	0.88			
Frt		0.98			0.96			1.00	0.85			
Flt Protected		1.00			1.00			0.95	1.00			
Satd. Flow (prot)		4853			4725			1770	2787			
Flt Permitted		0.90			1.00			0.95	1.00			
Satd. Flow (perm)		4380			4725			1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	10	1482	196	0	1626	664	134	0	1514	0	0	0
RTOR Reduction (vph)	0	16	0	0	67	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	1672	0	0	2223	0	0	134	1495	0	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Split	NA	custom			
Protected Phases		2			6		8	8	1 8			
Permitted Phases	2											
Actuated Green, G (s)		43.4			84.4			11.0	52.0			
Effective Green, g (s)		46.2			87.2			13.8	54.8			
Actuated g/C Ratio		0.42			0.80			0.13	0.50			
Clearance Time (s)		6.8			6.8			6.8				
Vehicle Extension (s)		2.0			2.0			2.0				
Lane Grp Cap (vph)		1856			3780			224	1401			
v/s Ratio Prot					0.47			0.08	c0.54			
v/s Ratio Perm		c0.38										
v/c Ratio		0.90			0.59			0.60	1.07			
Uniform Delay, d1		29.3			4.1			45.0	27.1			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		6.3			0.2			2.9	44.2			
Delay (s)		35.6			4.3			47.8	71.3			
Level of Service		D			A			D	E			
Approach Delay (s)		35.6			4.3			69.4			0.0	
Approach LOS		D			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1716	500	70	1202	490	690	520	120	452	720	330
Future Volume (veh/h)	690	1716	500	70	1202	490	690	520	120	452	720	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	711	1769	259	72	1239	430	711	536	0	466	742	229
Adj No. of Lanes	2	2	1	1	3	0	2	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	514	1349	602	93	1073	371	966	817	365	580	980	427
Arrive On Green	0.15	0.39	0.39	0.05	0.30	0.28	0.28	0.23	0.00	0.33	0.28	0.28
Sat Flow, veh/h	3343	3438	1535	1723	3623	1254	3442	3539	1583	1774	3539	1543
Grp Volume(v), veh/h	711	1769	259	72	1126	543	711	536	0	466	742	229
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1583	1721	1770	1583	1774	1770	1543
Q Serve(g_s), s	20.0	51.0	16.0	5.4	38.5	38.5	24.3	17.8	0.0	31.2	24.9	13.9
Cycle Q Clear(g_c), s	20.0	51.0	16.0	5.4	38.5	38.5	24.3	17.8	0.0	31.2	24.9	13.9
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	514	1349	602	93	975	469	966	817	365	580	980	427
V/C Ratio(X)	1.38	1.31	0.43	0.78	1.15	1.16	0.74	0.66	0.00	0.80	0.76	0.54
Avail Cap(c_a), veh/h	514	1349	602	93	975	469	966	817	365	580	980	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.14	0.14	0.14	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	39.5	28.9	60.7	45.8	46.3	42.4	45.3	0.0	39.9	43.0	28.9
Incr Delay (d2), s/veh	173.8	141.0	0.1	32.9	81.4	92.5	3.0	4.1	0.0	8.0	5.5	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	50.6	6.8	3.4	28.5	28.9	12.0	9.2	0.0	16.6	12.9	6.5
LnGrp Delay(d),s/veh	228.8	180.5	28.9	93.6	127.1	138.9	45.3	49.4	0.0	48.0	48.5	33.7
LnGrp LOS	F	F	C	F	F	F	D	D		D	D	C
Approach Vol, veh/h		2739			1741			1247			1437	
Approach Delay, s/veh		178.7			129.4			47.1			45.9	
Approach LOS		F			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	47.0	34.0	11.5	55.0	41.0	40.0	24.0	42.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	25.0	28.5	6.0	* 50	19.0	34.5	19.0	36.5
Max Q Clear Time (g_c+I1), s	33.2	19.8	7.4	53.0	26.3	26.9	22.0	40.5
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	90	140	789	100	70	140	870	695	100	1250	20
Future Volume (veh/h)	50	90	140	789	100	70	140	870	695	100	1250	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	97	20	925	0	0	151	935	0	108	1344	21
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	3	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	152	199	1026	0	458	192	1323	592	147	1796	28
Arrive On Green	0.13	0.13	0.13	0.29	0.00	0.00	0.11	0.37	0.00	0.08	0.35	0.34
Sat Flow, veh/h	654	1176	1539	3548	0	1583	1774	3539	1583	1774	5157	81
Grp Volume(v), veh/h	151	0	20	925	0	0	151	935	0	108	884	481
Grp Sat Flow(s),veh/h/ln	1830	0	1539	1774	0	1583	1774	1770	1583	1774	1695	1847
Q Serve(g_s), s	10.1	0.0	1.5	32.2	0.0	0.0	10.7	28.9	0.0	7.6	29.5	29.5
Cycle Q Clear(g_c), s	10.1	0.0	1.5	32.2	0.0	0.0	10.7	28.9	0.0	7.6	29.5	29.5
Prop In Lane	0.36		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	237	0	199	1026	0	458	192	1323	592	147	1181	643
V/C Ratio(X)	0.64	0.00	0.10	0.90	0.00	0.00	0.78	0.71	0.00	0.73	0.75	0.75
Avail Cap(c_a), veh/h	442	0	371	1132	0	505	428	1323	592	428	1227	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	49.3	43.9	0.0	0.0	55.8	34.2	0.0	57.5	36.9	36.9
Incr Delay (d2), s/veh	2.8	0.0	0.2	9.4	0.0	0.0	6.9	2.2	0.0	6.9	3.1	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.6	17.1	0.0	0.0	5.6	14.6	0.0	4.0	14.3	16.0
LnGrp Delay(d),s/veh	55.9	0.0	49.5	53.3	0.0	0.0	62.7	36.4	0.0	64.4	40.0	42.5
LnGrp LOS	E		D	D			E	D		E	D	D
Approach Vol, veh/h		171			925			1086			1473	
Approach Delay, s/veh		55.2			53.3			40.1			42.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	52.0		41.2	17.9	48.8		20.6
Change Period (Y+Rc), s	5.0	5.5		5.0	5.0	5.5		5.0
Max Green Setting (Gmax), s	30.0	45.0		40.0	30.0	45.0		30.0
Max Q Clear Time (g_c+I1), s	9.6	30.9		34.2	12.7	31.5		12.1
Green Ext Time (p_c), s	0.2	13.4		2.0	0.3	11.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1369	110	306	959	274	210	650	247	418	573	210
Future Volume (veh/h)	230	1369	110	306	959	274	210	650	247	418	573	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	245	1456	110	326	1020	159	223	691	174	445	610	71
Adj No. of Lanes	2	2	0	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	998	1991	150	283	1984	604	270	847	368	416	977	426
Arrive On Green	0.30	0.62	0.59	0.08	0.40	0.40	0.08	0.24	0.24	0.12	0.28	0.28
Sat Flow, veh/h	3343	3236	243	3343	4940	1504	3442	3539	1538	3442	3539	1541
Grp Volume(v), veh/h	245	770	796	326	1020	159	223	691	174	445	610	71
Grp Sat Flow(s),veh/h/ln	1672	1719	1760	1672	1647	1504	1721	1770	1538	1721	1770	1541
Q Serve(g_s), s	7.2	40.6	41.5	11.0	20.2	9.2	8.3	24.0	12.7	15.7	19.6	4.5
Cycle Q Clear(g_c), s	7.2	40.6	41.5	11.0	20.2	9.2	8.3	24.0	12.7	15.7	19.6	4.5
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	998	1058	1083	283	1984	604	270	847	368	416	977	426
V/C Ratio(X)	0.25	0.73	0.74	1.15	0.51	0.26	0.83	0.82	0.47	1.07	0.62	0.17
Avail Cap(c_a), veh/h	998	1058	1083	283	1984	604	270	847	368	416	977	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	17.4	17.7	59.5	29.3	26.0	59.0	46.7	42.9	57.2	41.1	35.7
Incr Delay (d2), s/veh	0.0	4.4	4.4	101.2	1.0	1.1	17.5	8.6	4.3	64.3	3.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	20.3	21.3	9.0	9.3	4.0	4.6	12.7	5.8	11.2	10.0	2.0
LnGrp Delay(d),s/veh	34.6	21.8	22.2	160.7	30.3	27.1	76.6	55.3	47.2	121.4	44.2	36.5
LnGrp LOS	C	C	C	F	C	C	E	E	D	F	D	D
Approach Vol, veh/h		1811			1505			1088			1126	
Approach Delay, s/veh		23.7			58.2			58.4			74.2	
Approach LOS		C			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.5	56.2	19.7	35.1	15.0	84.7	14.9	39.9
Change Period (Y+Rc), s	6.8	6.1	6.8	6.1	6.1	6.8	6.8	* 6.8
Max Green Setting (Gmax), s	12.9	50.1	12.2	29.0	8.9	54.1	8.1	* 33
Max Q Clear Time (g_c+I1), s	9.2	22.2	17.7	26.0	13.0	43.5	10.3	21.6
Green Ext Time (p_c), s	1.7	2.5	0.0	0.7	0.0	3.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	50.2
HCM 2010 LOS	D

Notes

MOVEMENT SUMMARY

Site: 1 [Boronda at McKinnon_CU + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB McKinnon St											
3	L2	207	0.0	0.494	19.2	LOS C	3.7	91.4	0.89	1.01	23.2
8	T1	135	0.0	0.494	14.2	LOS B	3.7	91.4	0.92	1.04	21.8
18	R2	162	0.0	0.494	14.2	LOS B	3.7	91.4	0.92	1.04	32.4
Approach		503	0.0	0.494	16.2	LOS C	3.7	91.4	0.91	1.03	26.1
East: WB Boronda Rd											
1	L2	223	0.0	0.695	14.1	LOS B	9.1	228.3	0.77	0.97	27.4
6	T1	1486	0.4	0.695	12.6	LOS B	9.6	239.6	0.75	0.89	31.1
16	R2	137	0.0	0.092	3.1	LOS A	0.5	12.0	0.40	0.24	33.9
Approach		1846	0.3	0.695	12.1	LOS B	9.6	239.6	0.72	0.85	30.9
North: SB McKinnon St											
7	L2	190	0.0	0.253	7.7	LOS A	1.7	41.8	0.91	0.90	32.5
4	T1	150	0.0	0.317	12.7	LOS B	1.7	42.0	0.85	0.87	26.9
14	R2	176	0.0	0.219	6.8	LOS A	1.4	35.9	0.88	0.84	31.3
Approach		516	0.0	0.317	8.8	LOS A	1.7	42.0	0.88	0.87	31.0
West: EB Boronda Rd											
5	L2	190	0.0	0.714	15.0	LOS B	8.8	219.0	0.70	0.92	28.7
2	T1	1542	0.0	0.714	13.4	LOS B	9.5	238.2	0.68	0.85	32.1
12	R2	467	0.0	0.322	5.3	LOS A	1.9	46.7	0.46	0.33	29.0
Approach		2200	0.0	0.714	11.8	LOS B	9.5	238.2	0.63	0.74	31.5
All Vehicles		5065	0.1	0.714	12.0	LOS B	9.6	239.6	0.72	0.82	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at El Dorado_CU + WASP + CASP PM]

Roundabout

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB El Dorado Dr											
3	L2	196	0.0	0.309	9.7	LOS A	2.2	56.1	0.97	0.96	33.4
8	T1	124	0.0	0.293	13.5	LOS B	1.7	42.0	0.90	0.90	32.0
18	R2	238	0.0	0.322	8.8	LOS A	2.2	55.2	0.92	0.91	34.4
Approach		558	0.0	0.322	10.2	LOS B	2.2	56.1	0.94	0.93	33.6
East: WB Baronda Rd											
1	L2	179	0.0	0.861	25.6	LOS D	19.9	497.7	0.94	1.41	29.7
6	T1	1515	0.3	0.861	24.3	LOS C	21.0	526.3	0.93	1.38	31.5
16	R2	117	0.0	0.861	23.3	LOS C	21.0	526.3	0.92	1.36	29.3
Approach		1812	0.3	0.861	24.4	LOS C	21.0	526.3	0.93	1.38	31.2
North: SB El Dorado Dr (Future)											
7	L2	148	0.0	0.244	9.1	LOS A	1.8	44.1	0.98	0.95	32.9
4	T1	139	0.0	0.378	17.5	LOS C	2.2	55.8	0.91	0.96	30.4
14	R2	99	0.0	0.137	6.4	LOS A	0.9	22.4	0.90	0.82	35.1
Approach		386	0.0	0.378	11.4	LOS B	2.2	55.8	0.93	0.92	32.6
West: EB Boronda Rd											
5u	U	63	0.0	0.894	29.3	LOS D	24.0	602.1	0.98	1.55	30.9
5	L2	91	0.0	0.894	29.3	LOS D	24.0	602.1	0.98	1.55	28.5
2	T1	1447	0.4	0.894	28.1	LOS D	25.5	638.4	0.98	1.52	30.6
12	R2	293	0.0	0.894	26.8	LOS D	25.5	638.4	0.97	1.49	29.4
Approach		1895	0.3	0.894	28.0	LOS D	25.5	638.4	0.97	1.52	30.3
All Vehicles		4650	0.2	0.894	23.1	LOS C	25.5	638.4	0.95	1.35	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Boronda at Natividad_CU + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Natividad Rd											
3	L2	245	0.0	0.538	19.5	LOS C	2.8	69.3	0.86	0.96	29.5
8	T1	707	0.0	0.675	23.3	LOS C	5.0	125.2	0.90	1.06	25.8
18	R2	578	0.0	0.345	0.0	LOS A	0.0	0.0	0.00	0.00	39.3
Approach		1529	0.0	0.675	13.9	LOS B	5.0	125.2	0.55	0.64	30.5
East: WB Boronda Rd											
1	L2	277	0.0	0.684	18.0	LOS C	6.0	149.1	0.81	1.02	28.3
6	T1	1407	0.2	0.684	16.5	LOS C	6.7	167.7	0.81	1.02	35.0
16	R2	287	0.0	0.266	5.9	LOS A	1.3	31.3	0.59	0.55	36.9
Approach		1971	0.1	0.684	15.2	LOS C	6.7	167.7	0.78	0.95	34.5
North: SB Natividad Rd											
7	L2	541	0.3	1.102	99.9	LOS F	29.4	736.6	1.00	2.31	15.5
4	T1	1326	0.0	1.150	110.8	LOS F	46.7	1167.5	1.00	2.68	10.9
14	R2	139	7.5	0.190	7.0	LOS A	0.9	23.1	0.73	0.73	37.3
Approach		2007	0.6	1.150	100.7	LOS F	46.7	1167.5	0.98	2.45	13.3
West: EB Boronda Rd											
5u	U	92	0.0	1.112	106.7	LOS F	28.7	717.6	1.00	2.29	19.3
5	L2	141	0.0	1.112	106.7	LOS F	28.7	717.6	1.00	2.29	17.0
2	T1	1421	0.0	1.112	102.0	LOS F	37.3	931.6	1.00	2.36	18.4
12	R2	200	0.0	0.266	7.9	LOS A	1.4	36.1	0.79	0.79	35.6
Approach		1854	0.0	1.112	92.4	LOS F	37.3	931.6	0.98	2.18	19.1
All Vehicles		7361	0.2	1.150	57.7	LOS F	46.7	1167.5	0.84	1.61	21.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Boronda at Independence_CU + WASP + CASP PM]

Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB Independence Blvd											
3	L2	557	0.0	0.468	13.6	LOS B	4.0	99.5	0.97	1.05	28.9
8	T1	133	0.0	0.422	14.9	LOS B	2.7	68.5	0.91	0.98	29.4
18	R2	72	0.0	0.422	14.9	LOS B	2.7	68.5	0.91	0.98	29.6
Approach		761	0.0	0.468	13.9	LOS B	4.0	99.5	0.95	1.03	29.0
East: WB Boronda Rd											
1	L2	33	0.0	0.695	16.4	LOS C	6.9	172.2	0.77	1.02	30.0
6	T1	1325	0.2	0.695	15.1	LOS C	7.5	187.9	0.77	1.01	32.1
16	R2	225	0.0	0.164	4.0	LOS A	0.7	18.1	0.33	0.20	35.4
Approach		1583	0.2	0.695	13.5	LOS B	7.5	187.9	0.71	0.90	32.4
North: SB Independence Blvd (Future)											
7	L2	118	0.0	0.418	12.0	LOS B	2.7	66.3	0.87	0.94	31.8
4	T1	140	0.0	0.418	12.0	LOS B	2.7	66.3	0.87	0.94	29.6
14	R2	107	0.0	0.170	7.8	LOS A	0.9	22.7	0.82	0.82	33.4
Approach		365	0.0	0.418	10.8	LOS B	2.7	66.3	0.86	0.91	31.5
West: EB Boronda Rd											
5u	U	36	0.0	0.744	15.6	LOS C	13.2	330.0	0.77	0.78	32.0
5	L2	124	0.0	0.744	15.6	LOS C	13.2	330.0	0.77	0.78	30.7
2	T1	1676	0.1	0.744	14.5	LOS B	13.2	330.0	0.75	0.72	32.1
12	R2	704	0.0	0.421	0.0	LOS A	0.0	0.0	0.00	0.00	36.9
Approach		2540	0.1	0.744	10.6	LOS B	13.2	330.0	0.55	0.52	33.0
All Vehicles		5249	0.1	0.744	11.9	LOS B	13.2	330.0	0.67	0.74	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	1427	117	20	1274	164	103	23	20	108	17	79
Future Volume (veh/h)	173	1427	117	20	1274	164	103	23	20	108	17	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1815	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	180	1486	119	21	1327	165	107	24	16	112	18	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	191	2135	170	28	1761	217	163	37	24	123	92	31
Arrive On Green	0.14	0.88	0.88	0.02	0.57	0.57	0.13	0.13	0.13	0.07	0.07	0.07
Sat Flow, veh/h	1774	3218	256	1723	3078	380	1277	287	191	1774	1327	442
Grp Volume(v), veh/h	180	789	816	21	739	753	147	0	0	112	0	24
Grp Sat Flow(s),veh/h/ln	1774	1719	1755	1723	1725	1733	1755	0	0	1774	0	1770
Q Serve(g_s), s	13.1	18.0	18.6	1.6	41.7	42.7	10.4	0.0	0.0	8.2	0.0	1.7
Cycle Q Clear(g_c), s	13.1	18.0	18.6	1.6	41.7	42.7	10.4	0.0	0.0	8.2	0.0	1.7
Prop In Lane	1.00		0.15	1.00		0.22	0.73		0.11	1.00		0.25
Lane Grp Cap(c), veh/h	191	1141	1164	28	987	992	224	0	0	123	0	123
V/C Ratio(X)	0.94	0.69	0.70	0.75	0.75	0.76	0.66	0.00	0.00	0.91	0.00	0.20
Avail Cap(c_a), veh/h	191	1141	1164	53	987	992	459	0	0	123	0	123
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	3.6	3.7	63.7	20.8	21.0	54.0	0.0	0.0	60.1	0.0	57.1
Incr Delay (d2), s/veh	36.6	2.2	2.2	31.6	5.2	5.4	3.2	0.0	0.0	54.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	8.8	9.1	1.0	21.1	21.8	5.2	0.0	0.0	5.9	0.0	0.8
LnGrp Delay(d),s/veh	91.9	5.8	5.9	95.3	26.0	26.5	57.2	0.0	0.0	115.0	0.0	57.9
LnGrp LOS	F	A	A	F	C	C	E			F		E
Approach Vol, veh/h		1785			1513			147			136	
Approach Delay, s/veh		14.5			27.2			57.2			104.9	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	90.3		13.0	18.0	78.4		20.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	67.0		9.0	14.0	57.0		34.0
Max Q Clear Time (g_c+I1), s	3.6	20.6		10.2	15.1	44.7		12.4
Green Ext Time (p_c), s	0.0	35.8		0.0	0.0	11.3		0.8

Intersection Summary			
HCM 2010 Ctrl Delay			25.1
HCM 2010 LOS			C

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	14	5	375	300	23
Future Vol, veh/h	27	14	5	375	300	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	15	5	408	326	25
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.5	13.7	12.4
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	93%
Vol Right, %	0%	0%	0%	100%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	375	27	14	323
LT Vol	5	0	27	0	0
Through Vol	0	375	0	0	300
RT Vol	0	0	0	14	23
Lane Flow Rate	5	408	29	15	351
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.008	0.56	0.056	0.024	0.478
Departure Headway (Hd)	5.446	4.943	6.825	5.609	4.897
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	657	730	523	635	734
Service Time	3.177	2.674	4.59	3.373	2.93
HCM Lane V/C Ratio	0.008	0.559	0.055	0.024	0.478
HCM Control Delay	8.2	13.8	10	8.5	12.4
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0	3.5	0.2	0.1	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	210	60	220	190	248	120	1392	250	195	1427	236
Future Volume (veh/h)	234	210	60	220	190	248	120	1392	250	195	1427	236
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	246	221	9	232	200	107	126	1465	245	205	1502	173
Adj No. of Lanes	1	2	1	1	1	1	1	3	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	567	245	261	313	261	395	2196	367	231	1756	537
Arrive On Green	0.14	0.16	0.16	0.15	0.17	0.17	0.22	0.50	0.48	0.07	0.35	0.35
Sat Flow, veh/h	1774	3539	1527	1774	1863	1555	1774	4385	732	3442	5085	1554
Grp Volume(v), veh/h	246	221	9	232	200	107	126	1132	578	205	1502	173
Grp Sat Flow(s),veh/h/ln	1774	1770	1527	1774	1863	1555	1774	1695	1727	1721	1695	1554
Q Serve(g_s), s	17.7	7.2	0.4	16.4	12.8	7.9	7.6	32.0	32.4	7.6	35.1	6.7
Cycle Q Clear(g_c), s	17.7	7.2	0.4	16.4	12.8	7.9	7.6	32.0	32.4	7.6	35.1	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	247	567	245	261	313	261	395	1697	865	231	1756	537
V/C Ratio(X)	1.00	0.39	0.04	0.89	0.64	0.41	0.32	0.67	0.67	0.89	0.86	0.32
Avail Cap(c_a), veh/h	247	1081	466	261	584	487	395	1697	865	231	1756	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	48.1	17.5	53.6	49.6	47.6	41.6	24.0	24.4	59.2	38.9	12.7
Incr Delay (d2), s/veh	56.4	0.2	0.0	28.4	0.8	0.4	0.2	2.1	4.1	30.2	5.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	3.5	0.2	10.1	6.7	3.4	3.8	15.4	16.3	4.6	17.3	3.1
LnGrp Delay(d),s/veh	111.5	48.3	17.6	82.0	50.4	48.0	41.8	26.0	28.5	89.4	44.5	14.3
LnGrp LOS	F	D	B	F	D	D	D	C	C	F	D	B
Approach Vol, veh/h		476			539			1836			1880	
Approach Delay, s/veh		80.4			63.5			27.9			46.6	
Approach LOS		F			E			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	68.1	22.8	24.5	32.5	48.2	21.8	25.5				
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1				
Max Green Setting (Gmax), s	6.5	43.4	16.7	37.0	7.8	42.1	15.7	38.0				
Max Q Clear Time (g_c+I1), s	9.6	34.4	18.4	9.2	9.6	37.1	19.7	14.8				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.9	0.0	2.4	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			44.7									
HCM 2010 LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	0	320	0	0	0	410	1565	0	0	1343	150
Future Volume (veh/h)	306	0	320	0	0	0	410	1565	0	0	1343	150
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				1863	1863	0	1863	1863	1900
Adj Flow Rate, veh/h	329	0	55				441	1683	0	0	1444	144
Adj No. of Lanes	2	0	1				1	3	0	1	3	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	469	0	216				494	3895	0	2	2061	206
Arrive On Green	0.14	0.00	0.14				0.28	0.77	0.00	0.00	0.44	0.42
Sat Flow, veh/h	3442	0	1583				1774	5253	0	1774	4700	469
Grp Volume(v), veh/h	329	0	55				441	1683	0	0	1042	546
Grp Sat Flow(s),veh/h/ln	1721	0	1583				1774	1695	0	1774	1695	1778
Q Serve(g_s), s	7.5	0.0	2.5				19.5	9.5	0.0	0.0	20.4	20.5
Cycle Q Clear(g_c), s	7.5	0.0	2.5				19.5	9.5	0.0	0.0	20.4	20.5
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.26
Lane Grp Cap(c), veh/h	469	0	216				494	3895	0	2	1487	780
V/C Ratio(X)	0.70	0.00	0.25				0.89	0.43	0.00	0.00	0.70	0.70
Avail Cap(c_a), veh/h	1094	0	503				564	3895	0	130	1657	869
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	31.6				28.3	3.4	0.0	0.0	18.6	18.8
Incr Delay (d2), s/veh	1.9	0.0	0.6				17.2	0.1	0.0	0.0	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	2.4				11.9	4.4	0.0	0.0	9.6	10.5
LnGrp Delay(d),s/veh	35.7	0.0	32.2				45.5	3.4	0.0	0.0	19.8	21.0
LnGrp LOS	D		C				D	A			B	C
Approach Vol, veh/h		384						2124			1588	
Approach Delay, s/veh		35.2						12.2			20.2	
Approach LOS		D						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	0.0	66.7		15.2	26.8	39.9		
Change Period (Y+Rc), s	4.0	5.5		4.5	4.0	5.5		
Max Green Setting (Gmax), s	6.0	58.5		25.5	26.0	38.5		
Max Q Clear Time (g_c+I1), s	0.0	11.5		9.5	21.5	22.5		
Green Ext Time (p_c), s	0.0	37.7		1.2	1.2	11.9		

Intersection Summary		
HCM 2010 Ctrl Delay		17.4
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	1351	230	20	960	80	190	130	30	80	130	307
Future Volume (veh/h)	416	1351	230	20	960	80	190	130	30	80	130	307
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	443	1437	234	21	1021	79	202	138	22	85	138	166
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	407	1647	264	88	1195	92	327	477	76	349	569	471
Arrive On Green	0.23	0.54	0.52	0.05	0.36	0.34	0.31	0.31	0.29	0.31	0.31	0.31
Sat Flow, veh/h	1774	3053	490	1774	3327	257	1055	1562	249	1199	1863	1543
Grp Volume(v), veh/h	443	824	847	21	543	557	202	0	160	85	138	166
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1815	1055	0	1811	1199	1863	1543
Q Serve(g_s), s	26.0	45.5	47.8	1.3	32.1	32.2	20.1	0.0	7.6	6.6	6.3	9.5
Cycle Q Clear(g_c), s	26.0	45.5	47.8	1.3	32.1	32.2	26.4	0.0	7.6	14.2	6.3	9.5
Prop In Lane	1.00		0.28	1.00		0.14	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	407	954	956	88	636	652	327	0	553	349	569	471
V/C Ratio(X)	1.09	0.86	0.89	0.24	0.85	0.85	0.62	0.00	0.29	0.24	0.24	0.35
Avail Cap(c_a), veh/h	407	954	956	141	672	689	368	0	623	395	641	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	22.5	23.4	51.8	33.5	33.7	39.4	0.0	30.1	35.4	29.5	30.6
Incr Delay (d2), s/veh	70.3	8.3	10.0	1.4	10.1	9.9	2.6	0.0	0.3	0.4	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.6	24.2	26.0	0.7	17.5	17.9	6.1	0.0	3.9	2.2	3.3	4.1
LnGrp Delay(d),s/veh	114.0	30.8	33.4	53.2	43.6	43.6	42.0	0.0	30.4	35.8	29.7	31.1
LnGrp LOS	F	C	C	D	D	D	D		C	D	C	C
Approach Vol, veh/h		2114			1121			362			389	
Approach Delay, s/veh		49.2			43.8			36.9			31.6	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	65.1		38.6	30.0	44.7		38.6
Change Period (Y+Rc), s	6.7	6.7		5.6	6.7	6.7		5.6
Max Green Setting (Gmax), s	6.3	57.3		37.4	23.3	40.3		37.4
Max Q Clear Time (g_c+I1), s	3.3	49.8		16.2	28.0	34.2		28.4
Green Ext Time (p_c), s	0.0	6.8		3.5	0.0	3.8		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	102	130	92	109	25	100	1009	96	33	1000	292
Future Volume (veh/h)	465	102	130	92	109	25	100	1009	96	33	1000	292
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	489	107	38	97	115	26	105	1062	101	35	1053	198
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	424	618	209	244	393	86	166	1330	126	65	1241	542
Arrive On Green	0.24	0.24	0.22	0.14	0.14	0.12	0.10	0.42	0.40	0.04	0.36	0.36
Sat Flow, veh/h	1774	2584	876	1774	2862	624	1723	3169	301	1723	3438	1502
Grp Volume(v), veh/h	489	72	73	97	69	72	105	576	587	35	1053	198
Grp Sat Flow(s),veh/h/ln	1774	1770	1690	1774	1770	1717	1723	1719	1751	1723	1719	1502
Q Serve(g_s), s	23.0	3.1	3.4	4.8	3.4	3.6	5.6	28.1	28.2	1.9	27.1	9.3
Cycle Q Clear(g_c), s	23.0	3.1	3.4	4.8	3.4	3.6	5.6	28.1	28.2	1.9	27.1	9.3
Prop In Lane	1.00		0.52	1.00		0.36	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	424	423	404	244	243	236	166	721	735	65	1241	542
V/C Ratio(X)	1.15	0.17	0.18	0.40	0.29	0.30	0.63	0.80	0.80	0.54	0.85	0.37
Avail Cap(c_a), veh/h	424	423	404	682	681	660	287	721	735	287	1358	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	29.0	29.5	37.9	37.3	37.7	41.8	24.4	24.5	45.5	28.3	22.6
Incr Delay (d2), s/veh	92.6	0.2	0.2	1.1	0.6	0.7	3.9	6.3	6.3	6.8	4.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	1.5	1.6	2.4	1.7	1.8	2.9	14.5	14.8	1.0	13.7	3.9
LnGrp Delay(d),s/veh	129.2	29.2	29.8	38.9	37.9	38.4	45.7	30.7	30.8	52.2	33.2	23.0
LnGrp LOS	F	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		634			238			1268			1286	
Approach Delay, s/veh		106.4			38.5			32.0			32.2	
Approach LOS		F			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	38.7		17.2	7.6	44.4		27.0				
Change Period (Y+Rc), s	* 6	* 6		* 6	* 5.2	* 6		6.0				
Max Green Setting (Gmax), s	* 14	* 36		* 35	* 15	* 36		21.0				
Max Q Clear Time (g_c+I1), s	7.6	29.1		6.8	3.9	30.2		25.0				
Green Ext Time (p_c), s	0.1	3.6		0.9	0.0	5.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			46.3									
HCM 2010 LOS			D									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1596	480	0	1435	147	0	0	0	486	0	410
Future Volume (veh/h)	0	1596	480	0	1435	147	0	0	0	486	0	410
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1810	0	1810	1900				1863	0	1863
Adj Flow Rate, veh/h	0	1680	0	0	1511	0				512	0	413
Adj No. of Lanes	0	2	1	0	2	0				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	0	5	5				2	0	2
Cap, veh/h	0	2080	930	0	2080	0				1041	0	479
Arrive On Green	0.00	0.60	0.00	0.00	0.60	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3529	1538	0	3619	0				3442	0	1583
Grp Volume(v), veh/h	0	1680	0	0	1511	0				512	0	413
Grp Sat Flow(s),veh/h/ln	0	1719	1538	0	1719	0				1721	0	1583
Q Serve(g_s), s	0.0	32.6	0.0	0.0	26.8	0.0				10.5	0.0	21.3
Cycle Q Clear(g_c), s	0.0	32.6	0.0	0.0	26.8	0.0				10.5	0.0	21.3
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2080	930	0	2080	0				1041	0	479
V/C Ratio(X)	0.00	0.81	0.00	0.00	0.73	0.00				0.49	0.00	0.86
Avail Cap(c_a), veh/h	0	2229	997	0	2229	0				1435	0	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.2	0.0	0.0	12.0	0.0				24.7	0.0	28.4
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.0	0.9	0.0				0.3	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.7	0.0	0.0	12.9	0.0				5.0	0.0	10.3
LnGrp Delay(d),s/veh	0.0	15.1	0.0	0.0	13.0	0.0				24.9	0.0	36.2
LnGrp LOS		B			B					C		D
Approach Vol, veh/h		1680			1511						925	
Approach Delay, s/veh		15.1			13.0						30.0	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		56.2		30.1		56.2		
Change Period (Y+Rc), s		5.1		4.6		5.1		
Max Green Setting (Gmax), s		54.9		35.4		54.9		
Max Q Clear Time (g_c+I1), s		34.6		23.3		28.8		
Green Ext Time (p_c), s		16.5		2.3		20.3		

Intersection Summary		
HCM 2010 Ctrl Delay		17.7
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1542	540	0	1012	264	570	0	369	0	0	0
Future Volume (vph)	0	1542	540	0	1012	264	570	0	369	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.6		4.0		4.0	4.0	4.0			
Lane Util. Factor		0.95	1.00		0.95		0.95	0.95	1.00			
Frpb, ped/bikes		1.00	0.97		0.99		1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00	1.00			
Frt		1.00	0.85		0.97		1.00	1.00	0.85			
Flt Protected		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (prot)		3438	1499		3310		1681	1681	1583			
Flt Permitted		1.00	1.00		1.00		0.95	0.95	1.00			
Satd. Flow (perm)		3438	1499		3310		1681	1681	1583			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1640	574	0	1077	281	606	0	393	0	0	0
RTOR Reduction (vph)	0	0	193	0	22	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	1640	381	0	1336	0	303	303	341	0	0	0
Confl. Peds. (#/hr)			2			4						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Perm		NA		Split	NA	Perm			
Protected Phases		2			2		4	4				
Permitted Phases			2						4			
Actuated Green, G (s)		63.5	63.5		63.5		23.3	23.3	23.3			
Effective Green, g (s)		64.1	63.5		64.1		23.5	23.5	23.5			
Actuated g/C Ratio		0.67	0.66		0.67		0.25	0.25	0.25			
Clearance Time (s)		4.6	4.6		4.6		4.2	4.2	4.2			
Vehicle Extension (s)		3.0	3.0		3.0		2.0	2.0	2.0			
Lane Grp Cap (vph)		2305	995		2219		413	413	389			
v/s Ratio Prot		c0.48			0.40		0.18	0.18				
v/s Ratio Perm			0.25						c0.22			
v/c Ratio		0.71	0.38		0.60		0.73	0.73	0.88			
Uniform Delay, d1		9.9	7.2		8.7		33.2	33.2	34.7			
Progression Factor		1.00	1.00		0.80		1.00	1.00	1.00			
Incremental Delay, d2		1.1	0.2		0.3		5.7	5.7	18.8			
Delay (s)		11.0	7.5		7.3		38.9	38.9	53.5			
Level of Service		B	A		A		D	D	D			
Approach Delay (s)		10.1			7.3			44.6			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	13.4
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	800	110	620	610	620	160	1078	940	480	825	82
Future Volume (veh/h)	124	800	110	620	610	620	160	1078	940	480	825	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	127	816	102	633	622	491	163	1100	724	490	842	76
Adj No. of Lanes	1	2	0	1	2	0	2	2	1	2	3	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	145	906	113	269	671	528	268	1195	533	296	1640	147
Arrive On Green	0.08	0.30	0.28	0.16	0.37	0.35	0.08	0.34	0.34	0.09	0.35	0.33
Sat Flow, veh/h	1723	3071	384	1723	1829	1440	3442	3539	1578	3442	4743	426
Grp Volume(v), veh/h	127	457	461	633	585	528	163	1100	724	490	601	317
Grp Sat Flow(s),veh/h/ln	1723	1719	1736	1723	1719	1550	1721	1770	1578	1721	1695	1779
Q Serve(g_s), s	9.3	32.6	32.7	20.0	41.7	42.0	5.9	38.2	43.2	11.0	18.0	18.2
Cycle Q Clear(g_c), s	9.3	32.6	32.7	20.0	41.7	42.0	5.9	38.2	43.2	11.0	18.0	18.2
Prop In Lane	1.00		0.22	1.00		0.93	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	145	507	512	269	631	569	268	1195	533	296	1172	615
V/C Ratio(X)	0.87	0.90	0.90	2.35	0.93	0.93	0.61	0.92	1.36	1.66	0.51	0.52
Avail Cap(c_a), veh/h	145	525	530	269	649	585	368	1195	533	296	1172	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	43.3	43.5	54.0	38.9	39.9	57.1	40.7	42.4	58.5	33.3	33.6
Incr Delay (d2), s/veh	38.9	17.5	17.4	619.3	18.8	20.8	0.8	12.8	173.3	310.1	1.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	17.9	18.1	55.8	23.1	21.2	2.8	20.8	44.4	18.0	8.7	9.5
LnGrp Delay(d),s/veh	96.8	60.8	60.9	673.3	57.7	60.6	57.9	53.5	215.7	368.6	34.9	36.6
LnGrp LOS	F	E	E	F	E	E	E	D	F	F	C	D
Approach Vol, veh/h		1045			1746			1987			1408	
Approach Delay, s/veh		65.3			281.7			113.0			151.4	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	47.2	24.0	41.8	14.0	48.3	14.8	51.0
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	8.9	39.8	17.9	37.0	11.6	37.1	8.7	46.2
Max Q Clear Time (g_c+I1), s	13.0	45.2	22.0	34.7	7.9	20.2	11.3	44.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	6.1	0.0	0.8

Intersection Summary		
HCM 2010 Ctrl Delay		161.3
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	906	90	890	800	549	90	1326	890	447	1296	90
Future Volume (veh/h)	110	906	90	890	800	549	90	1326	890	447	1296	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	116	954	0	937	842	0	95	1396	888	471	1364	91
Adj No. of Lanes	1	2	1	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	153	777	347	711	1214	543	71	1223	1555	366	1386	92
Arrive On Green	0.09	0.23	0.00	0.21	0.35	0.00	0.04	0.35	0.35	0.11	0.41	0.40
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	3539	2758	3442	3365	224
Grp Volume(v), veh/h	116	954	0	937	842	0	95	1396	888	471	715	740
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1770	1379	1721	1770	1819
Q Serve(g_s), s	9.9	34.0	0.0	32.0	31.6	0.0	6.0	52.0	31.3	16.0	60.1	60.6
Cycle Q Clear(g_c), s	9.9	34.0	0.0	32.0	31.6	0.0	6.0	52.0	31.3	16.0	60.1	60.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	153	777	347	711	1214	543	71	1223	1555	366	729	749
V/C Ratio(X)	0.76	1.23	0.00	1.32	0.69	0.00	1.34	1.14	0.57	1.29	0.98	0.99
Avail Cap(c_a), veh/h	183	777	347	711	1214	543	71	1223	1555	366	729	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	58.2	0.0	59.3	41.7	0.0	72.3	49.3	21.3	67.3	43.7	44.0
Incr Delay (d2), s/veh	11.0	114.0	0.0	153.0	1.6	0.0	223.3	73.9	0.4	148.5	28.6	29.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	28.4	0.0	29.8	15.2	0.0	7.3	37.9	11.9	15.1	35.0	36.6
LnGrp Delay(d),s/veh	78.0	172.2	0.0	212.2	43.3	0.0	295.6	123.2	21.8	215.7	72.2	73.5
LnGrp LOS	E	F		F	D		F	F	C	F	E	E
Approach Vol, veh/h		1070			1779			2379			1926	
Approach Delay, s/veh		162.0			132.3			92.2			107.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	56.0	36.0	38.5	10.0	66.0	17.3	57.2
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	49.5	30.0	* 32	4.0	59.5	14.5	47.5
Max Q Clear Time (g_c+I1), s	18.0	54.0	34.0	36.0	8.0	62.6	11.9	33.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	116.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1396	847	20	150	959	406	10	296	130	250	130	1170
Future Volume (veh/h)	1396	847	20	150	959	406	10	296	130	250	130	1170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1469	892	20	158	1009	0	11	312	56	263	137	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1303	1729	39	182	742	332	18	335	59	305	509	433
Arrive On Green	0.39	0.50	0.49	0.10	0.22	0.00	0.01	0.11	0.11	0.17	0.27	0.00
Sat Flow, veh/h	3343	3440	77	1774	3438	1538	1774	3005	533	1774	1863	1583
Grp Volume(v), veh/h	1469	446	466	158	1009	0	11	182	186	263	137	0
Grp Sat Flow(s),veh/h/ln	1672	1720	1797	1774	1719	1538	1774	1770	1769	1774	1863	1583
Q Serve(g_s), s	56.0	25.0	25.0	12.6	31.0	0.0	0.9	14.7	15.0	20.7	8.3	0.0
Cycle Q Clear(g_c), s	56.0	25.0	25.0	12.6	31.0	0.0	0.9	14.7	15.0	20.7	8.3	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	1303	865	903	182	742	332	18	197	197	305	509	433
V/C Ratio(X)	1.13	0.52	0.52	0.87	1.36	0.00	0.63	0.92	0.94	0.86	0.27	0.00
Avail Cap(c_a), veh/h	1303	865	903	259	742	332	198	197	197	401	509	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.8	24.0	24.0	63.5	56.3	0.0	70.9	63.2	63.4	57.9	41.0	0.0
Incr Delay (d2), s/veh	67.6	0.5	0.5	18.8	170.8	0.0	31.4	43.4	48.0	14.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.9	12.0	12.6	7.1	32.2	0.0	0.6	9.6	10.0	11.3	4.3	0.0
LnGrp Delay(d),s/veh	111.5	24.5	24.5	82.3	227.1	0.0	102.2	106.6	111.4	71.8	41.2	0.0
LnGrp LOS	F	C	C	F	F		F	F	F	E	D	
Approach Vol, veh/h		2381			1167			379			400	
Approach Delay, s/veh		78.2			207.5			108.8			61.3	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	76.2	5.4	43.3	60.0	35.0	27.2	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	14.6	27.0	2.9	10.3	58.0	33.0	22.7	17.0
Green Ext Time (p_c), s	0.2	18.3	0.0	2.5	0.0	0.0	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	114.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	610	431	550	606	0	464	0	110	0	0	0
Future Volume (veh/h)	0	610	431	550	606	0	464	0	110	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	642	396	579	638	0	488	0	22	0	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	688	424	406	2114	0	544	543	473	2	3	0
Arrive On Green	0.00	0.34	0.33	0.24	0.61	0.00	0.31	0.00	0.30	0.00	0.00	0.00
Sat Flow, veh/h	1774	2023	1247	1723	3529	0	1774	1770	1543	1774	3632	0
Grp Volume(v), veh/h	0	546	492	579	638	0	488	0	22	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1550	1723	1719	0	1774	1770	1543	1774	1770	0
Q Serve(g_s), s	0.0	31.3	31.3	24.0	8.9	0.0	26.8	0.0	1.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	31.3	31.3	24.0	8.9	0.0	26.8	0.0	1.0	0.0	0.0	0.0
Prop In Lane	1.00		0.80	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	585	527	406	2114	0	544	543	473	2	3	0
V/C Ratio(X)	0.00	0.93	0.93	1.43	0.30	0.00	0.90	0.00	0.05	0.00	0.00	0.00
Avail Cap(c_a), veh/h	104	590	532	406	2114	0	609	607	530	609	1215	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.5	32.9	39.0	9.3	0.0	33.8	0.0	25.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	21.9	23.6	206.2	0.1	0.0	15.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.4	16.9	34.6	4.3	0.0	15.4	0.0	0.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	54.4	56.6	245.2	9.4	0.0	48.8	0.0	25.3	0.0	0.0	0.0
LnGrp LOS		D	E	F	A		D		C			
Approach Vol, veh/h		1038			1217			510			0	
Approach Delay, s/veh		55.4			121.6			47.8			0.0	
Approach LOS		E			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	38.7		35.3	0.0	66.7		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	26.0	33.3		28.8	0.0	10.9		0.0
Green Ext Time (p_c), s	0.0	0.3		0.9	0.0	14.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.1
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	620	90	120	430	120	100	71	0	0	57	347
Future Vol, veh/h	179	620	90	120	430	120	100	71	0	0	57	347
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	674	98	130	467	130	109	77	0	0	62	377

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	566	271	951	754	97	449	0	0	87	0	0
Stage 1	261	261	-	305	305	-	-	-	-	-	-	-
Stage 2	603	305	-	646	449	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	~ 434	768	240	~ 338	959	1111	-	-	1509	-	-
Stage 1	744	692	-	705	662	-	-	-	-	-	-	-
Stage 2	486	~ 662	-	460	572	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 385	755	-	~ 300	943	1102	-	-	1496	-	-
Mov Cap-2 Maneuver	-	~ 385	-	-	~ 300	-	-	-	-	-	-	-
Stage 1	665	686	-	630	592	-	-	-	-	-	-	-
Stage 2	~ 79	~ 592	-	~ 7	567	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			5	0
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1102	-	-	-	433	-	1496	-	-
HCM Lane V/C Ratio	0.099	-	-	-	1.004	-	-	-	-
HCM Control Delay (s)	8.6	-	-	-	75.5	-	0	-	-
HCM Lane LOS	A	-	-	-	F	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	12.9	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	210	691	220	110	500	1418	814	120	1295	30
Future Volume (veh/h)	40	70	210	691	220	110	500	1418	814	120	1295	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	76	19	751	239	31	543	1541	495	130	1408	31
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	165	137	871	472	395	512	1691	723	98	1252	28
Arrive On Green	0.09	0.09	0.09	0.25	0.25	0.25	0.29	0.48	0.48	0.06	0.24	0.23
Sat Flow, veh/h	1774	1863	1540	3442	1863	1561	1774	3539	1513	1774	5118	113
Grp Volume(v), veh/h	43	76	19	751	239	31	543	1541	495	130	933	506
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1721	1863	1561	1774	1770	1513	1774	1695	1840
Q Serve(g_s), s	2.9	5.0	1.5	26.7	14.1	1.9	36.9	51.6	32.5	7.1	31.3	31.3
Cycle Q Clear(g_c), s	2.9	5.0	1.5	26.7	14.1	1.9	36.9	51.6	32.5	7.1	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	157	165	137	871	472	395	512	1691	723	98	829	450
V/C Ratio(X)	0.27	0.46	0.14	0.86	0.51	0.08	1.06	0.91	0.68	1.32	1.13	1.13
Avail Cap(c_a), veh/h	396	416	344	971	525	440	512	1691	723	98	829	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	55.4	53.8	45.7	41.0	36.4	45.5	30.9	25.9	60.5	48.3	48.4
Incr Delay (d2), s/veh	0.3	0.7	0.2	6.8	0.3	0.0	56.8	8.9	5.2	199.1	71.6	81.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	0.6	13.5	7.3	0.8	26.1	27.1	14.5	8.9	22.9	26.0
LnGrp Delay(d),s/veh	54.8	56.2	54.0	52.5	41.3	36.5	102.3	39.9	31.2	259.6	120.0	129.6
LnGrp LOS	D	E	D	D	D	D	F	D	C	F	F	F
Approach Vol, veh/h		138			1021			2579			1569	
Approach Delay, s/veh		55.4			49.4			51.3			134.6	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	65.1		15.4	40.9	35.3		36.4
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.0	38.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	9.1	53.6		7.0	38.9	33.3		28.7
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	75.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	20	90	10	20	20	210	2062	186	20	1595	631
Future Volume (veh/h)	404	20	90	10	20	20	210	2062	186	20	1595	631
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	439	22	39	11	22	17	228	2241	202	22	1734	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	7	494	30	56	29	134	1871	166	59	1865	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.30	0.08	0.57	0.55	0.03	0.53	0.00
Sat Flow, veh/h	421	21	1568	0	178	91	1774	3287	292	1774	3632	0
Grp Volume(v), veh/h	461	0	39	50	0	0	228	1190	1253	22	1734	0
Grp Sat Flow(s),veh/h/ln	442	0	1568	269	0	0	1774	1770	1809	1774	1770	0
Q Serve(g_s), s	0.0	0.0	2.5	0.0	0.0	0.0	11.0	83.0	83.0	1.8	66.3	0.0
Cycle Q Clear(g_c), s	46.0	0.0	2.5	46.0	0.0	0.0	11.0	83.0	83.0	1.8	66.3	0.0
Prop In Lane	0.95		1.00	0.22		0.34	1.00		0.16	1.00		0.00
Lane Grp Cap(c), veh/h	188	0	494	115	0	0	134	1007	1029	59	1865	0
V/C Ratio(X)	2.46	0.00	0.08	0.44	0.00	0.00	1.70	1.18	1.22	0.37	0.93	0.00
Avail Cap(c_a), veh/h	188	0	494	115	0	0	134	1007	1029	134	1965	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	0.0	35.1	40.6	0.0	0.0	67.4	31.4	31.6	69.0	32.0	0.0
Incr Delay (d2), s/veh	671.9	0.0	0.0	1.0	0.0	0.0	346.8	92.1	106.6	1.4	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.5	0.0	1.1	1.5	0.0	0.0	18.2	66.1	71.7	0.9	34.3	0.0
LnGrp Delay(d),s/veh	727.7	0.0	35.1	41.5	0.0	0.0	414.2	123.5	138.3	70.5	40.0	0.0
LnGrp LOS	F		D	D			F	F	F	E	D	
Approach Vol, veh/h		500			50			2671			1756	
Approach Delay, s/veh		673.7			41.5			155.3			40.4	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	87.0		50.0	15.0	80.9		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	3.8	85.0		48.0	13.0	68.3		48.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	165.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	730	127	50	510	260	165	522	60	340	360	330
Future Volume (veh/h)	370	730	127	50	510	260	165	522	60	340	360	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1863	1863	1863	1863	1863	1863	1810	1810	1810
Adj Flow Rate, veh/h	394	777	131	53	543	77	176	555	13	362	383	98
Adj No. of Lanes	2	2	0	1	2	1	1	2	1	2	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	2	2	2	2	2	2	5	5	5
Cap, veh/h	494	1172	198	69	1024	434	214	883	390	459	500	418
Arrive On Green	0.15	0.40	0.39	0.04	0.29	0.29	0.12	0.25	0.25	0.14	0.28	0.28
Sat Flow, veh/h	3343	2942	496	1774	3539	1498	1774	3539	1564	3343	1810	1515
Grp Volume(v), veh/h	394	454	454	53	543	77	176	555	13	362	383	98
Grp Sat Flow(s),veh/h/ln	1672	1719	1719	1774	1770	1498	1774	1770	1564	1672	1810	1515
Q Serve(g_s), s	11.0	20.8	20.9	2.9	12.4	3.7	9.3	13.5	0.6	10.1	18.8	4.8
Cycle Q Clear(g_c), s	11.0	20.8	20.9	2.9	12.4	3.7	9.3	13.5	0.6	10.1	18.8	4.8
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	494	685	685	69	1024	434	214	883	390	459	500	418
V/C Ratio(X)	0.80	0.66	0.66	0.77	0.53	0.18	0.82	0.63	0.03	0.79	0.77	0.23
Avail Cap(c_a), veh/h	1039	685	685	552	1339	567	552	1137	503	1039	581	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	23.7	23.8	45.9	28.8	25.7	41.4	32.2	27.4	40.3	32.1	27.0
Incr Delay (d2), s/veh	3.0	2.4	2.4	16.0	0.4	0.2	7.6	0.7	0.0	3.1	5.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.3	10.3	1.7	6.1	1.6	5.1	6.6	0.3	4.9	10.1	2.0
LnGrp Delay(d),s/veh	42.7	26.1	26.2	62.0	29.2	25.9	49.1	33.0	27.4	43.4	37.3	27.3
LnGrp LOS	D	C	C	E	C	C	D	C	C	D	D	C
Approach Vol, veh/h		1302			673			744			843	
Approach Delay, s/veh		31.2			31.4			36.7			38.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	42.4	15.6	30.7	18.3	31.9	17.2	29.1
Change Period (Y+Rc), s	4.0	4.5	4.0	5.0	4.0	4.5	4.0	* 5
Max Green Setting (Gmax), s	30.0	36.0	30.0	30.0	30.0	36.0	30.0	* 31
Max Q Clear Time (g_c+I1), s	4.9	22.9	11.3	20.8	13.0	14.4	12.1	15.5
Green Ext Time (p_c), s	0.1	7.6	0.4	4.0	1.3	7.2	1.1	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	786	179	30	30	437	130	30	250	40	50	170	780
Future Volume (veh/h)	786	179	30	30	437	130	30	250	40	50	170	780
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1819	1900
Adj Flow Rate, veh/h	854	195	19	33	475	117	33	272	34	54	185	460
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	690	1849	178	46	570	139	46	740	92	81	428	372
Arrive On Green	0.39	0.57	0.56	0.03	0.20	0.20	0.03	0.23	0.23	0.05	0.25	0.25
Sat Flow, veh/h	1774	3262	315	1774	2800	684	1774	3171	392	1723	1728	1503
Grp Volume(v), veh/h	854	105	109	33	299	293	33	151	155	54	185	460
Grp Sat Flow(s),veh/h/ln	1774	1770	1807	1774	1770	1715	1774	1770	1793	1723	1728	1503
Q Serve(g_s), s	55.0	3.9	3.9	2.6	22.9	23.2	2.6	10.1	10.3	4.4	12.8	35.0
Cycle Q Clear(g_c), s	55.0	3.9	3.9	2.6	22.9	23.2	2.6	10.1	10.3	4.4	12.8	35.0
Prop In Lane	1.00		0.17	1.00		0.40	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	690	1003	1024	46	360	349	46	413	418	81	428	372
V/C Ratio(X)	1.24	0.10	0.11	0.72	0.83	0.84	0.72	0.36	0.37	0.67	0.43	1.24
Avail Cap(c_a), veh/h	690	1003	1024	188	450	437	188	438	444	195	428	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	14.1	14.2	68.4	54.0	54.3	68.4	45.4	45.5	66.3	44.9	52.7
Incr Delay (d2), s/veh	119.3	0.0	0.0	19.4	10.1	11.3	19.4	0.5	0.5	9.1	0.7	127.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.7	1.9	2.0	1.5	12.2	12.1	1.5	5.0	5.2	2.3	6.2	27.6
LnGrp Delay(d),s/veh	162.5	14.2	14.2	87.8	64.1	65.6	87.8	46.0	46.1	75.4	45.5	180.4
LnGrp LOS	F	B	B	F	E	E	F	D	D	E	D	F
Approach Vol, veh/h		1068			625			339			699	
Approach Delay, s/veh		132.8			66.0			50.1			136.6	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	38.0	8.6	84.2	8.6	40.0	60.0	32.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	6.4	12.3	4.6	5.9	4.6	37.0	57.0	25.2
Green Ext Time (p_c), s	0.0	6.1	0.0	5.2	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	108.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	420	20	120	600	70	10	496	130	20	377	260
Future Volume (veh/h)	430	420	20	120	600	70	10	496	130	20	377	260
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	457	447	10	128	638	68	11	528	24	21	401	51
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	474	736	626	178	735	78	60	602	505	79	622	528
Arrive On Green	0.27	0.41	0.41	0.10	0.23	0.22	0.03	0.32	0.32	0.04	0.33	0.33
Sat Flow, veh/h	1723	1810	1538	1723	3128	333	1774	1863	1561	1774	1863	1580
Grp Volume(v), veh/h	457	447	10	128	350	356	11	528	24	21	401	51
Grp Sat Flow(s),veh/h/ln	1723	1810	1538	1723	1719	1742	1774	1863	1561	1774	1863	1580
Q Serve(g_s), s	34.3	25.5	0.5	9.4	25.6	25.7	0.8	35.0	1.4	1.5	23.9	2.9
Cycle Q Clear(g_c), s	34.3	25.5	0.5	9.4	25.6	25.7	0.8	35.0	1.4	1.5	23.9	2.9
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	736	626	178	404	409	60	602	505	79	622	528
V/C Ratio(X)	0.96	0.61	0.02	0.72	0.87	0.87	0.18	0.88	0.05	0.27	0.64	0.10
Avail Cap(c_a), veh/h	474	736	626	224	422	427	149	797	668	149	622	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	30.6	23.2	56.9	48.1	48.3	61.5	41.8	30.5	60.5	37.0	30.0
Incr Delay (d2), s/veh	32.2	1.4	0.0	8.1	16.7	16.8	1.5	8.7	0.0	1.8	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	13.0	0.2	4.9	14.0	14.3	0.4	19.5	0.6	0.8	12.6	1.3
LnGrp Delay(d),s/veh	79.0	32.0	23.2	64.9	64.8	65.1	63.0	50.5	30.5	62.2	39.3	30.1
LnGrp LOS	E	C	C	E	E	E	E	D	C	E	D	C
Approach Vol, veh/h		914			834			563			473	
Approach Delay, s/veh		55.4			64.9			49.9			39.3	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	57.3	8.4	47.7	40.0	34.8	9.8	46.3
Change Period (Y+Rc), s	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Max Green Setting (Gmax), s	14.9	38.9	8.9	33.9	33.9	30.0	8.9	53.9
Max Q Clear Time (g_c+I1), s	11.4	27.5	2.8	25.9	36.3	27.7	3.5	37.0
Green Ext Time (p_c), s	0.1	5.4	0.0	3.7	0.0	0.9	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	54.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	690	120	170	610	88	330	257	360	74	160	50
Future Volume (veh/h)	70	690	120	170	610	88	330	257	360	74	160	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	719	113	177	635	90	344	268	139	77	167	49
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	110	1113	175	223	1321	187	411	715	599	339	529	155
Arrive On Green	0.06	0.37	0.36	0.13	0.44	0.42	0.38	0.38	0.38	0.38	0.38	0.37
Sat Flow, veh/h	1723	2971	467	1723	3001	424	1151	1863	1561	969	1380	405
Grp Volume(v), veh/h	73	416	416	177	363	362	344	268	139	77	0	216
Grp Sat Flow(s),veh/h/ln	1723	1719	1718	1723	1719	1706	1151	1863	1561	969	0	1784
Q Serve(g_s), s	4.4	21.3	21.4	10.6	16.0	16.2	31.9	11.1	6.4	6.6	0.0	9.1
Cycle Q Clear(g_c), s	4.4	21.3	21.4	10.6	16.0	16.2	41.0	11.1	6.4	17.7	0.0	9.1
Prop In Lane	1.00		0.27	1.00		0.25	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	110	644	644	223	757	751	411	715	599	339	0	685
V/C Ratio(X)	0.66	0.65	0.65	0.79	0.48	0.48	0.84	0.38	0.23	0.23	0.00	0.32
Avail Cap(c_a), veh/h	500	836	836	339	757	751	411	715	599	339	0	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.9	27.6	27.8	45.1	21.2	21.5	37.5	23.7	22.3	30.1	0.0	23.2
Incr Delay (d2), s/veh	6.7	2.3	2.3	7.2	1.0	1.0	14.0	0.3	0.2	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	10.5	10.6	5.5	7.8	7.8	11.6	5.7	2.8	1.8	0.0	4.5
LnGrp Delay(d),s/veh	55.6	29.9	30.2	52.3	22.2	22.5	51.5	24.0	22.5	30.4	0.0	23.4
LnGrp LOS	E	C	C	D	C	C	D	C	C	C		C
Approach Vol, veh/h		905			902			751			293	
Approach Delay, s/veh		32.1			28.2			36.3			25.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.8	44.0		45.0	10.8	51.0		45.0
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0
Max Green Setting (Gmax), s	20.0	50.0		40.0	30.0	40.0		40.0
Max Q Clear Time (g_c+I1), s	12.6	23.4		19.7	6.4	18.2		43.0
Green Ext Time (p_c), s	0.3	14.6		5.2	0.2	16.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.3
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	972	70	219	580	180	50	190	301	300	0	50
Future Volume (veh/h)	30	972	70	219	580	180	50	190	301	300	0	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.92	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	32	1045	71	235	624	91	54	204	98	323	0	0
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1142	78	279	1641	728	332	349	274	346	363	309
Arrive On Green	0.03	0.34	0.33	0.16	0.46	0.46	0.19	0.19	0.19	0.20	0.00	0.00
Sat Flow, veh/h	1774	3353	228	1774	3539	1570	1774	1863	1464	1774	1863	1583
Grp Volume(v), veh/h	32	551	565	235	624	91	54	204	98	323	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1811	1774	1770	1570	1774	1863	1464	1774	1863	1583
Q Serve(g_s), s	2.4	39.8	39.8	17.2	15.3	4.4	3.4	13.3	7.8	23.9	0.0	0.0
Cycle Q Clear(g_c), s	2.4	39.8	39.8	17.2	15.3	4.4	3.4	13.3	7.8	23.9	0.0	0.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	603	617	279	1641	728	332	349	274	346	363	309
V/C Ratio(X)	0.53	0.91	0.92	0.84	0.38	0.12	0.16	0.58	0.36	0.93	0.00	0.00
Avail Cap(c_a), veh/h	146	611	625	346	1641	728	479	503	395	346	363	309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	63.3	42.1	42.2	54.6	23.3	20.4	45.4	49.5	47.2	52.8	0.0	0.0
Incr Delay (d2), s/veh	7.0	19.2	18.9	14.3	0.3	0.2	0.2	1.6	0.8	31.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	22.7	23.2	9.5	7.5	1.9	1.7	7.0	3.2	14.8	0.0	0.0
LnGrp Delay(d),s/veh	70.4	61.3	61.2	68.9	23.6	20.5	45.6	51.0	48.0	84.6	0.0	0.0
LnGrp LOS	E	E	E	E	C	C	D	D	D	F		
Approach Vol, veh/h		1148			950			356			323	
Approach Delay, s/veh		61.5			34.5			49.4			84.6	
Approach LOS		E			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	49.4		30.0	8.5	65.8		29.0
Change Period (Y+Rc), s	5.5	6.0		5.5	5.5	6.0		5.5
Max Green Setting (Gmax), s	24.5	44.0		24.5	9.5	59.0		34.5
Max Q Clear Time (g_c+I1), s	19.2	41.8		25.9	4.4	17.3		15.3
Green Ext Time (p_c), s	0.3	1.6		0.0	0.0	30.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	53.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	220	50	160	410	31	30	685	310	9	311	260
Future Volume (veh/h)	376	220	50	160	410	31	30	685	310	9	311	260
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	380	222	34	162	414	0	30	692	256	9	314	0
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	0	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	1228	185	200	513	436	365	818	303	58	1044	0
Arrive On Green	0.24	0.40	0.40	0.11	0.28	0.00	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1774	3079	465	1774	1863	1583	1058	2527	935	19	3309	0
Grp Volume(v), veh/h	380	126	130	162	414	0	30	485	463	169	154	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1863	1583	1058	1770	1693	1633	1610	0
Q Serve(g_s), s	15.2	3.4	3.5	6.5	15.1	0.0	1.6	18.6	18.6	0.3	5.2	0.0
Cycle Q Clear(g_c), s	15.2	3.4	3.5	6.5	15.1	0.0	6.8	18.6	18.6	18.9	5.2	0.0
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.55	0.05		0.00
Lane Grp Cap(c), veh/h	419	706	708	200	513	436	365	573	548	581	521	0
V/C Ratio(X)	0.91	0.18	0.18	0.81	0.81	0.00	0.08	0.85	0.85	0.29	0.30	0.00
Avail Cap(c_a), veh/h	486	727	729	729	1020	867	472	751	718	749	683	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.1	14.2	14.2	31.6	24.7	0.0	21.0	23.0	23.0	18.4	18.5	0.0
Incr Delay (d2), s/veh	17.5	0.0	0.0	2.9	1.2	0.0	0.0	5.5	5.8	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	1.7	1.7	3.4	7.9	0.0	0.5	9.9	9.5	2.5	2.3	0.0
LnGrp Delay(d),s/veh	44.6	14.3	14.3	34.6	25.8	0.0	21.1	28.5	28.8	18.5	18.6	0.0
LnGrp LOS	D	B	B	C	C		C	C	C	B	B	
Approach Vol, veh/h		636			576			978			323	
Approach Delay, s/veh		32.4			28.3			28.4			18.5	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.3	33.1		27.7	21.3	24.1		27.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	30.0	30.0		31.0	20.0	40.0		31.0
Max Q Clear Time (g_c+I1), s	8.5	5.5		20.9	17.2	17.1		20.6
Green Ext Time (p_c), s	0.1	1.3		2.4	0.1	1.3		2.4

Intersection Summary		
HCM 2010 Ctrl Delay		28.1
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	350	70	281	260	30	340	859	645	40	437	290
Future Volume (veh/h)	302	350	70	281	260	30	340	859	645	40	437	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	315	365	61	293	271	7	354	895	349	42	455	251
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	362	594	98	341	650	291	396	1450	635	83	790	363
Arrive On Green	0.20	0.20	0.18	0.19	0.18	0.18	0.23	0.42	0.42	0.05	0.24	0.23
Sat Flow, veh/h	1774	3034	502	1774	3539	1583	1723	3438	1504	1723	3293	1514
Grp Volume(v), veh/h	315	211	215	293	271	7	354	895	349	42	455	251
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1583	1723	1719	1504	1723	1647	1514
Q Serve(g_s), s	19.3	12.3	12.5	18.0	7.6	0.4	22.4	22.9	19.6	2.7	13.7	17.1
Cycle Q Clear(g_c), s	19.3	12.3	12.5	18.0	7.6	0.4	22.4	22.9	19.6	2.7	13.7	17.1
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	346	346	341	650	291	396	1450	635	83	790	363
V/C Ratio(X)	0.87	0.61	0.62	0.86	0.42	0.02	0.89	0.62	0.55	0.51	0.58	0.69
Avail Cap(c_a), veh/h	489	567	566	489	1134	507	598	1714	750	169	821	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	41.3	41.6	43.9	40.5	37.6	41.9	25.4	24.4	52.2	37.7	39.6
Incr Delay (d2), s/veh	12.1	1.7	1.8	10.3	0.4	0.0	8.1	0.5	0.7	1.8	1.6	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	6.2	6.3	9.8	3.8	0.2	11.5	10.9	8.3	1.3	6.4	7.8
LnGrp Delay(d),s/veh	55.4	43.0	43.4	54.3	41.0	37.6	50.1	25.9	25.2	54.0	39.2	46.4
LnGrp LOS	E	D	D	D	D	D	D	C	C	D	D	D
Approach Vol, veh/h		741			571			1598			748	
Approach Delay, s/veh		48.4			47.7			31.1			42.5	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	51.4	25.6	26.0	29.8	31.0	26.9	24.6
Change Period (Y+Rc), s	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	10.0	54.5	30.0	34.5	38.0	26.5	30.0	34.5
Max Q Clear Time (g_c+I1), s	4.7	24.9	20.0	14.5	24.4	19.1	21.3	9.6
Green Ext Time (p_c), s	0.0	19.1	0.6	4.1	0.5	6.3	0.6	4.4

Intersection Summary		
HCM 2010 Ctrl Delay		39.5
HCM 2010 LOS		D

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	243	0	20	0	0	0	20	585	0	0	139	95
Future Vol, veh/h	243	0	20	0	0	0	20	585	0	0	139	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	2	2	2	2	2	2	5	5	5
Mvmt Flow	264	0	22	0	0	0	22	636	0	0	151	103
Number of Lanes	0	1	0	0	1	0	0	2	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	15.1	0	17.7	10.8
HCM LOS	C	-	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	9%	0%	92%	0%	0%	0%
Vol Thru, %	91%	100%	0%	100%	100%	0%
Vol Right, %	0%	0%	8%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	390	263	0	139	95
LT Vol	20	0	243	0	0	0
Through Vol	195	390	0	0	139	0
RT Vol	0	0	20	0	0	95
Lane Flow Rate	234	424	286	0	151	103
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.383	0.69	0.491	0	0.27	0.164
Departure Headway (Hd)	5.907	5.86	6.184	6.792	6.43	5.717
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	610	619	583	0	558	626
Service Time	3.643	3.596	4.222	4.861	4.178	3.464
HCM Lane V/C Ratio	0.384	0.685	0.491	0	0.271	0.165
HCM Control Delay	12.3	20.7	15.1	9.9	11.6	9.6
HCM Lane LOS	B	C	C	N	B	A
HCM 95th-tile Q	1.8	5.4	2.7	0	1.1	0.6

Intersection	
Int Delay, s/veh	20.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	654	20	20	31	19	34
Future Vol, veh/h	654	20	20	31	19	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Yield
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	711	22	22	34	21	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	98	10	21	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.675	6.975	4.13	-	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-
Follow-up Hdwy	3.5475	3.3475	2.219	-	-	-
Pot Cap-1 Maneuver	888	1060	1594	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	876	1060	1594	-	-	-
Mov Cap-2 Maneuver	876	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	23.6		2.9		0	
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1594	-	876	1060	-	-
HCM Lane V/C Ratio	0.014	-	0.811	0.021	-	-
HCM Control Delay (s)	7.3	0	24.1	8.5	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	9	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	756	100	180	660	170	210	711	290	80	457	190
Future Volume (veh/h)	356	756	100	180	660	170	210	711	290	80	457	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	363	771	93	184	673	43	214	726	180	82	466	159
Adj No. of Lanes	1	2	0	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	409	1099	132	231	875	384	254	1100	486	123	612	207
Arrive On Green	0.23	0.35	0.34	0.13	0.25	0.25	0.15	0.32	0.32	0.07	0.24	0.23
Sat Flow, veh/h	1774	3160	381	1774	3539	1553	1723	3438	1519	1723	2511	850
Grp Volume(v), veh/h	363	432	432	184	673	43	214	726	180	82	318	307
Grp Sat Flow(s),veh/h/ln	1774	1770	1771	1774	1770	1553	1723	1719	1519	1723	1719	1642
Q Serve(g_s), s	24.2	25.7	25.8	12.3	21.6	2.6	14.8	22.2	11.2	5.7	20.9	21.3
Cycle Q Clear(g_c), s	24.2	25.7	25.8	12.3	21.6	2.6	14.8	22.2	11.2	5.7	20.9	21.3
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.52
Lane Grp Cap(c), veh/h	409	615	616	231	875	384	254	1100	486	123	419	400
V/C Ratio(X)	0.89	0.70	0.70	0.80	0.77	0.11	0.84	0.66	0.37	0.67	0.76	0.77
Avail Cap(c_a), veh/h	465	664	664	272	942	413	254	1132	500	131	443	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	34.4	34.5	51.5	42.7	35.6	50.7	35.8	32.0	55.3	42.8	43.3
Incr Delay (d2), s/veh	17.1	3.0	3.0	13.2	3.6	0.1	21.8	1.4	0.5	11.3	7.0	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	13.1	13.1	6.9	11.0	1.1	8.6	10.8	4.8	3.1	10.8	10.5
LnGrp Delay(d),s/veh	62.5	37.4	37.6	64.7	46.4	35.7	72.5	37.2	32.5	66.6	49.9	51.2
LnGrp LOS	E	D	D	E	D	D	E	D	C	E	D	D
Approach Vol, veh/h		1227			900			1120			707	
Approach Delay, s/veh		44.9			49.6			43.2			52.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	46.5	22.0	33.8	32.1	34.2	12.7	43.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	17.2	44.3	16.5	30.0	30.5	31.0	7.8	38.7
Max Q Clear Time (g_c+I1), s	14.3	27.8	16.8	23.3	26.2	23.6	7.7	24.2
Green Ext Time (p_c), s	0.1	9.2	0.0	4.5	0.5	5.1	0.0	8.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	480	1430	986	30	40	290
Future Volume (vph)	480	1430	986	30	40	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1719	3438	3423		1770	1583
Flt Permitted	0.11	1.00	1.00		0.95	1.00
Satd. Flow (perm)	207	3438	3423		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	505	1505	1038	32	42	305
RTOR Reduction (vph)	0	0	2	0	0	230
Lane Group Flow (vph)	505	1505	1068	0	42	75
Heavy Vehicles (%)	5%	5%	5%	5%	2%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		8	
Permitted Phases	6					8
Actuated Green, G (s)	58.9	63.5	34.4		23.3	23.3
Effective Green, g (s)	60.1	64.1	35.0		23.5	23.5
Actuated g/C Ratio	0.63	0.67	0.37		0.25	0.25
Clearance Time (s)	4.6	4.6	4.6		4.2	4.2
Vehicle Extension (s)	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	527	2305	1253		435	389
v/s Ratio Prot	c0.25	0.44	0.31		0.02	
v/s Ratio Perm	c0.35					c0.05
v/c Ratio	0.96	0.65	0.85		0.10	0.19
Uniform Delay, d1	26.7	9.2	27.9		27.8	28.5
Progression Factor	0.92	0.51	1.00		1.00	1.00
Incremental Delay, d2	21.9	0.4	5.8		0.0	0.1
Delay (s)	46.5	5.2	33.7		27.9	28.6
Level of Service	D	A	C		C	C
Approach Delay (s)		15.6	33.7		28.5	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	12.2
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	400	20	675	550	620	30	596	1016	660	533	40
Future Volume (veh/h)	50	400	20	675	550	620	30	596	1016	660	533	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1810	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	52	412	19	696	567	0	31	614	967	680	549	39
Adj No. of Lanes	1	2	0	2	2	1	1	2	2	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	5	5	5	5	5	5	5	5	5
Cap, veh/h	83	723	33	837	1432	641	71	800	1302	670	1275	90
Arrive On Green	0.05	0.21	0.20	0.25	0.42	0.00	0.04	0.23	0.23	0.20	0.39	0.38
Sat Flow, veh/h	1774	3446	159	3343	3438	1538	1723	3438	2684	3343	3257	231
Grp Volume(v), veh/h	52	211	220	696	567	0	31	614	967	680	289	299
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1672	1719	1538	1723	1719	1342	1672	1719	1769
Q Serve(g_s), s	4.5	16.6	16.7	30.5	17.8	0.0	2.7	25.8	36.0	31.0	19.0	19.2
Cycle Q Clear(g_c), s	4.5	16.6	16.7	30.5	17.8	0.0	2.7	25.8	36.0	31.0	19.0	19.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	83	372	385	837	1432	641	71	800	1302	670	673	693
V/C Ratio(X)	0.62	0.57	0.57	0.83	0.40	0.00	0.43	0.77	0.74	1.02	0.43	0.43
Avail Cap(c_a), veh/h	126	526	546	994	1800	805	290	800	1302	670	673	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.4	54.8	54.9	54.9	31.5	0.0	72.4	55.4	32.3	61.9	34.4	34.6
Incr Delay (d2), s/veh	2.8	2.9	2.8	6.6	0.4	0.0	1.5	4.5	2.3	38.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.4	8.7	14.9	8.5	0.0	1.3	12.8	17.1	17.8	9.2	9.5
LnGrp Delay(d),s/veh	75.2	57.7	57.7	61.5	31.9	0.0	73.9	60.0	34.6	100.4	34.9	35.0
LnGrp LOS	E	E	E	E	C		E	E	C	F	C	C
Approach Vol, veh/h		483			1263			1612			1268	
Approach Delay, s/veh		59.6			48.2			45.0			70.1	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.7	37.0	10.4	64.6	11.3	68.4	35.0	40.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	44.0	* 45	24.0	39.0	9.5	79.0	29.0	34.0
Max Q Clear Time (g_c+I1), s	32.5	18.7	4.7	21.2	6.5	19.8	33.0	38.0
Green Ext Time (p_c), s	4.2	12.3	0.0	11.5	0.0	16.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	290	120	485	40	1958	520	359	1280	30
Future Volume (veh/h)	0	0	30	290	120	485	40	1958	520	359	1280	30
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				216	251	313	42	2061	0	378	1347	30
Adj No. of Lanes				1	1	1	1	2	1	1	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				424	446	374	260	1889	803	257	2436	54
Arrive On Green				0.24	0.24	0.24	0.51	0.51	0.00	0.14	0.69	0.69
Sat Flow, veh/h				1774	1863	1561	392	3725	1583	1774	3539	79
Grp Volume(v), veh/h				216	251	313	42	2061	0	378	673	704
Grp Sat Flow(s),veh/h/ln				1774	1863	1561	392	1863	1583	1774	1770	1849
Q Serve(g_s), s				11.6	13.1	21.1	6.7	56.0	0.0	16.0	21.1	21.2
Cycle Q Clear(g_c), s				11.6	13.1	21.1	7.8	56.0	0.0	16.0	21.1	21.2
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h				424	446	374	260	1889	803	257	1218	1272
V/C Ratio(X)				0.51	0.56	0.84	0.16	1.09	0.00	1.47	0.55	0.55
Avail Cap(c_a), veh/h				578	607	509	260	1889	803	257	1218	1272
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				36.4	36.9	40.0	15.7	27.2	0.0	47.2	8.7	8.7
Incr Delay (d2), s/veh				0.4	0.4	6.6	0.1	50.2	0.0	231.7	0.3	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.7	6.7	9.7	0.7	41.8	0.0	24.3	10.4	10.9
LnGrp Delay(d),s/veh				36.7	37.3	46.6	15.8	77.4	0.0	278.9	9.0	9.0
LnGrp LOS				D	D	D	B	F		F	A	A
Approach Vol, veh/h					780			2103			1755	
Approach Delay, s/veh					40.9			76.2			67.1	
Approach LOS					D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	60.0				80.0		30.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	18.0	58.0				23.2		23.1
Green Ext Time (p_c), s	0.0	0.0				37.1		1.6

Intersection Summary		
HCM 2010 Ctrl Delay		66.8
HCM 2010 LOS		E

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1300	0	0	1218	756	844
Future Volume (vph)	1300	0	0	1218	756	844
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.94			0.88	0.97	0.88
Frt	1.00			0.85	1.00	0.85
Flt Protected	0.95			1.00	0.95	1.00
Satd. Flow (prot)	4990			2787	3433	2787
Flt Permitted	0.95			1.00	0.95	1.00
Satd. Flow (perm)	4990			2787	3433	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1413	0	0	1324	822	917
RTOR Reduction (vph)	0	0	0	13	0	479
Lane Group Flow (vph)	1413	0	0	1311	822	438
Turn Type	Prot			Over	Prot	Prot
Protected Phases	3			2	2	5
Permitted Phases						
Actuated Green, G (s)	25.0			30.1	30.1	31.1
Effective Green, g (s)	26.0			31.1	31.1	31.1
Actuated g/C Ratio	0.40			0.48	0.48	0.48
Clearance Time (s)	5.0			5.0	5.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1992			1331	1640	1331
v/s Ratio Prot	c0.28			c0.47	0.24	0.16
v/s Ratio Perm						
v/c Ratio	0.71			0.99	0.50	0.33
Uniform Delay, d1	16.4			16.8	11.7	10.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.2			21.0	0.2	0.1
Delay (s)	17.6			37.8	11.9	10.7
Level of Service	B			D	B	B
Approach Delay (s)		17.6	37.8		11.3	
Approach LOS		B	D		B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	640	330	350	800	320	300	371	730	280	259	579
Future Volume (veh/h)	551	640	330	350	800	320	300	371	730	280	259	579
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	592	688	312	376	860	0	323	399	567	301	278	0
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	367	568	257	299	1054	472	357	543	485	299	496	0
Arrive On Green	0.11	0.24	0.23	0.17	0.31	0.00	0.20	0.31	0.30	0.17	0.27	0.00
Sat Flow, veh/h	3442	2365	1073	1723	3438	1538	1774	1770	1580	1723	1810	0
Grp Volume(v), veh/h	592	515	485	376	860	0	323	399	567	301	278	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1668	1723	1719	1538	1774	1770	1580	1723	1810	0
Q Serve(g_s), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	30.3	46.0	26.0	19.8	0.0
Cycle Q Clear(g_c), s	16.0	36.0	36.0	26.0	34.7	0.0	26.7	30.3	46.0	26.0	19.8	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	367	425	400	299	1054	472	357	543	485	299	496	0
V/C Ratio(X)	1.61	1.21	1.21	1.26	0.82	0.00	0.90	0.74	1.17	1.01	0.56	0.00
Avail Cap(c_a), veh/h	367	425	400	299	1054	472	367	543	485	299	496	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.0	57.0	57.3	62.0	48.1	0.0	58.5	46.5	52.5	62.0	46.7	0.0
Incr Delay (d2), s/veh	288.0	115.4	116.5	140.7	6.5	0.0	24.0	7.7	96.7	54.0	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	31.2	29.5	24.0	17.4	0.0	15.5	15.9	33.1	16.8	10.4	0.0
LnGrp Delay(d),s/veh	355.0	172.4	173.8	202.7	54.5	0.0	82.5	54.2	149.2	116.1	50.4	0.0
LnGrp LOS	F	F	F	F	D		F	D	F	F	D	
Approach Vol, veh/h		1592			1236			1289			579	
Approach Delay, s/veh		240.7			99.6			103.1			84.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	40.0	34.2	45.8	20.0	50.0	30.0	50.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	28.0	38.0	28.7	21.8	18.0	36.7	28.0	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	2.7	0.0	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	146.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	1200	0	0	826	240	160	1290	110	0	0	0
Future Volume (veh/h)	410	1200	0	0	826	240	160	1290	110	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	423	1237	0	0	852	229	165	1330	78			
Adj No. of Lanes	2	2	0	0	2	0	1	2	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	470	1879	0	0	992	267	714	1425	618			
Arrive On Green	0.27	1.00	0.00	0.00	0.36	0.35	0.40	0.40	0.40			
Sat Flow, veh/h	3442	3632	0	0	2843	739	1774	3539	1536			
Grp Volume(v), veh/h	423	1237	0	0	548	533	165	1330	78			
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1719	1774	1770	1536			
Q Serve(g_s), s	14.2	0.0	0.0	0.0	34.4	34.5	7.4	43.2	3.8			
Cycle Q Clear(g_c), s	14.2	0.0	0.0	0.0	34.4	34.5	7.4	43.2	3.8			
Prop In Lane	1.00		0.00	0.00		0.43	1.00		1.00			
Lane Grp Cap(c), veh/h	470	1879	0	0	639	620	714	1425	618			
V/C Ratio(X)	0.90	0.66	0.00	0.00	0.86	0.86	0.23	0.93	0.13			
Avail Cap(c_a), veh/h	470	1879	0	0	639	620	724	1445	627			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	42.8	0.0	0.0	0.0	35.5	35.7	23.6	34.3	22.6			
Incr Delay (d2), s/veh	2.5	0.2	0.0	0.0	14.0	14.4	0.2	11.4	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.9	0.0	0.0	0.0	19.2	18.8	3.7	23.3	1.6			
LnGrp Delay(d),s/veh	45.3	0.2	0.0	0.0	49.5	50.2	23.8	45.7	22.7			
LnGrp LOS	D	A			D	D	C	D	C			
Approach Vol, veh/h		1660			1081			1573				
Approach Delay, s/veh		11.7			49.8			42.2				
Approach LOS		B			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		67.7			20.4	47.3		52.3
Change Period (Y+Rc), s		4.9			* 4.2	4.9		4.2
Max Green Setting (Gmax), s		62.1			* 16	41.7		48.8
Max Q Clear Time (g_c+I1), s		2.0			16.2	36.5		45.2
Green Ext Time (p_c), s		36.1			0.0	4.8		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1360	30	326	660	0	0	0	0	240	1254	350
Future Volume (veh/h)	0	1360	30	326	660	0	0	0	0	240	1254	350
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1432	0	343	695	0				253	1320	0
Adj No. of Lanes	0	2	0	1	2	0				0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1180	0	310	1917	0				216	1195	620
Arrive On Green	0.00	0.33	0.00	0.35	1.00	0.00				0.39	0.39	0.00
Sat Flow, veh/h	0	3725	0	1774	3632	0				553	3052	1583
Grp Volume(v), veh/h	0	1432	0	343	695	0				840	733	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0				1835	1770	1583
Q Serve(g_s), s	0.0	40.0	0.0	21.0	0.0	0.0				47.0	47.0	0.0
Cycle Q Clear(g_c), s	0.0	40.0	0.0	21.0	0.0	0.0				47.0	47.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.30		1.00
Lane Grp Cap(c), veh/h	0	1180	0	310	1917	0				719	693	620
V/C Ratio(X)	0.00	1.21	0.00	1.10	0.36	0.00				1.17	1.06	0.00
Avail Cap(c_a), veh/h	0	1180	0	310	1917	0				719	693	620
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.48	0.48	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	40.0	0.0	39.0	0.0	0.0				36.5	36.5	0.0
Incr Delay (d2), s/veh	0.0	104.2	0.0	67.7	0.3	0.0				90.5	50.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	36.6	0.0	16.0	0.1	0.0				41.8	32.6	0.0
LnGrp Delay(d),s/veh	0.0	144.2	0.0	106.7	0.3	0.0				127.0	86.9	0.0
LnGrp LOS		F		F	A					F	F	
Approach Vol, veh/h		1432			1038						1573	
Approach Delay, s/veh		144.2			35.4						108.3	
Approach LOS		F			D						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	25.0	44.0		51.0		69.0		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 21	39.1		* 47		64.1		
Max Q Clear Time (g_c+I1), s	23.0	42.0		49.0		2.0		
Green Ext Time (p_c), s	0.0	0.0		0.0		34.0		

Intersection Summary		
HCM 2010 Ctrl Delay		102.3
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	440	220	581	500	160	390	734	491	240	726	200
Future Volume (veh/h)	370	440	220	581	500	160	390	734	491	240	726	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	402	478	117	632	543	151	424	798	241	261	789	199
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	456	643	288	686	678	188	403	1162	519	288	735	185
Arrive On Green	0.14	0.19	0.19	0.21	0.26	0.25	0.23	0.33	0.33	0.16	0.26	0.25
Sat Flow, veh/h	3343	3438	1538	3343	2651	734	1774	3539	1580	1774	2788	703
Grp Volume(v), veh/h	402	478	117	632	351	343	424	798	241	261	501	487
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1666	1774	1770	1580	1774	1770	1721
Q Serve(g_s), s	16.1	17.9	9.1	25.3	26.1	26.4	31.0	26.7	16.5	19.7	36.0	36.0
Cycle Q Clear(g_c), s	16.1	17.9	9.1	25.3	26.1	26.4	31.0	26.7	16.5	19.7	36.0	36.0
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	456	643	288	686	440	426	403	1162	519	288	467	454
V/C Ratio(X)	0.88	0.74	0.41	0.92	0.80	0.80	1.05	0.69	0.46	0.91	1.07	1.07
Avail Cap(c_a), veh/h	514	906	405	759	516	500	403	1162	519	403	467	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	52.4	48.9	53.2	47.5	47.9	52.8	39.8	36.4	56.2	50.3	50.5
Incr Delay (d2), s/veh	14.5	1.1	0.3	14.9	6.3	6.8	59.4	1.7	0.6	15.5	62.8	63.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	8.6	3.9	13.1	13.2	12.9	21.7	13.4	7.3	10.9	25.6	25.0
LnGrp Delay(d),s/veh	72.4	53.5	49.2	68.1	53.8	54.7	112.2	41.5	37.0	71.6	113.1	113.9
LnGrp LOS	E	D	D	E	D	D	F	D	D	E	F	F
Approach Vol, veh/h		997			1326			1463			1249	
Approach Delay, s/veh		60.6			60.9			61.2			104.7	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.2	48.8	32.0	29.5	35.0	40.0	22.6	38.9
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	21.7	28.7	27.3	19.9	33.0	38.0	18.1	28.4
Green Ext Time (p_c), s	0.3	4.9	0.5	4.0	0.0	0.0	0.3	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	71.8
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	70	70	180	50	0	0	0	0	176	0	20
Future Volume (veh/h)	10	70	70	180	50	0	0	0	0	176	0	20
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	11	76	22	196	54	0				191	0	4
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0				2	2	2
Cap, veh/h	176	320	299	264	946	0				269	0	241
Arrive On Green	0.19	0.19	0.19	0.15	0.51	0.00				0.15	0.00	0.15
Sat Flow, veh/h	120	1696	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	87	0	22	196	54	0				191	0	4
Grp Sat Flow(s),veh/h/ln	1816	0	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.3	2.8	0.4	0.0				2.7	0.0	0.1
Cycle Q Clear(g_c), s	1.1	0.0	0.3	2.8	0.4	0.0				2.7	0.0	0.1
Prop In Lane	0.13		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	496	0	299	264	946	0				269	0	241
V/C Ratio(X)	0.18	0.00	0.07	0.74	0.06	0.00				0.71	0.00	0.02
Avail Cap(c_a), veh/h	1872	0	1526	1039	1795	0				2380	0	2124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	8.8	10.8	3.3	0.0				10.7	0.0	9.5
Incr Delay (d2), s/veh	0.2	0.0	0.1	4.1	0.0	0.0				3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.1	1.7	0.2	0.0				1.6	0.0	0.0
LnGrp Delay(d),s/veh	9.3	0.0	8.9	14.8	3.3	0.0				14.1	0.0	9.6
LnGrp LOS	A		A	B	A					B		A
Approach Vol, veh/h		109			250						195	
Approach Delay, s/veh		9.2			12.4						14.0	
Approach LOS		A			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			8.4	9.5		8.5		17.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			15.5	25.5		35.5		25.5
Max Q Clear Time (g_c+I1), s			4.8	3.1		4.7		2.4
Green Ext Time (p_c), s			0.4	0.7		0.6		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		12.3
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	196	0	0	140	429	90	0	70	0	0	0
Future Volume (veh/h)	50	196	0	0	140	429	90	0	70	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1900			
Adj Flow Rate, veh/h	54	213	0	0	152	121	98	0	16			
Adj No. of Lanes	1	1	0	0	1	1	1	1	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	91	898	0	0	406	345	164	0	146			
Arrive On Green	0.05	0.48	0.00	0.00	0.22	0.22	0.09	0.00	0.09			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	54	213	0	0	152	121	98	0	16			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	0.6	1.4	0.0	0.0	1.5	1.4	1.1	0.0	0.2			
Cycle Q Clear(g_c), s	0.6	1.4	0.0	0.0	1.5	1.4	1.1	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	91	898	0	0	406	345	164	0	146			
V/C Ratio(X)	0.59	0.24	0.00	0.00	0.37	0.35	0.60	0.00	0.11			
Avail Cap(c_a), veh/h	1300	2246	0	0	2246	1909	2978	0	2658			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.8	3.2	0.0	0.0	7.0	7.0	9.2	0.0	8.8			
Incr Delay (d2), s/veh	6.0	0.1	0.0	0.0	0.6	0.6	3.5	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	0.0	0.8	0.6	0.7	0.0	0.1			
LnGrp Delay(d),s/veh	15.8	3.3	0.0	0.0	7.6	7.6	12.7	0.0	9.1			
LnGrp LOS	B	A			A	A	B		A			
Approach Vol, veh/h		267			273			114				
Approach Delay, s/veh		5.9			7.6			12.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		6.5		14.7			5.6	9.1
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		35.5		25.5			15.5	25.5
Max Q Clear Time (g_c+I1), s		3.1		3.4			2.6	3.5
Green Ext Time (p_c), s		0.3		2.3			0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	10	0	10	20	10	20	54	10	10	40	307
Future Volume (veh/h)	275	10	0	10	20	10	20	54	10	10	40	307
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	299	11	0	11	22	3	22	59	2	11	43	105
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	849	16	0	355	440	47	332	197	7	239	72	170
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.32	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1359	50	0	252	1367	147	435	1275	42	101	464	1099
Grp Volume(v), veh/h	310	0	0	36	0	0	83	0	0	159	0	0
Grp Sat Flow(s),veh/h/ln	1409	0	0	1767	0	0	1751	0	0	1664	0	0
Q Serve(g_s), s	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.2	0.0	0.0	0.7	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.96		0.00	0.31		0.08	0.27		0.02	0.07		0.66
Lane Grp Cap(c), veh/h	865	0	0	842	0	0	536	0	0	481	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.04	0.00	0.00	0.15	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	2482	0	0	2779	0	0	2707	0	0	2644	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	4.0	0.0	0.0	6.4	0.0	0.0	6.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	5.3	0.0	0.0	4.1	0.0	0.0	6.6	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h		310			36			83			159	
Approach Delay, s/veh		5.3			4.1			6.6			7.2	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		7.2		10.0		7.2		10.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		2.7		5.3		3.5		2.2
Green Ext Time (p_c), s		1.2		1.9		1.2		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	190	211	64	120	177
Future Volume (veh/h)	50	190	211	64	120	177
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1900	1863
Adj Flow Rate, veh/h	54	54	229	56	130	192
Adj No. of Lanes	0	0	1	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	96	96	575	141	439	423
Arrive On Green	0.12	0.12	0.40	0.40	0.40	0.40
Sat Flow, veh/h	830	830	1447	354	418	1066
Grp Volume(v), veh/h	109	0	0	285	322	0
Grp Sat Flow(s),veh/h/ln	1675	0	0	1800	1483	0
Q Serve(g_s), s	1.1	0.0	0.0	2.1	0.9	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	2.1	3.0	0.0
Prop In Lane	0.50	0.50		0.20	0.40	
Lane Grp Cap(c), veh/h	194	0	0	715	863	0
V/C Ratio(X)	0.56	0.00	0.00	0.40	0.37	0.00
Avail Cap(c_a), veh/h	3216	0	0	3457	3068	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	0.0	4.0	4.1	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.1	1.2	0.0
LnGrp Delay(d),s/veh	10.3	0.0	0.0	4.4	4.4	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	109		285			322
Approach Delay, s/veh	10.3		4.4			4.4
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		11.8		6.6		11.8		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		35.5		35.5		35.5		
Max Q Clear Time (g_c+I1), s		4.1		3.1		5.0		
Green Ext Time (p_c), s		4.1		0.3		4.1		

Intersection Summary		
HCM 2010 Ctrl Delay		5.3
HCM 2010 LOS		A

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	312	385	222	200	40
Future Volume (veh/h)	60	312	385	222	200	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	0	418	241	217	0
Adj No. of Lanes	0	0	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	120	0	519	2352	444	0
Arrive On Green	0.07	0.00	0.29	0.66	0.24	0.00
Sat Flow, veh/h	1748	0	1774	3632	1863	0
Grp Volume(v), veh/h	66	0	418	241	217	0
Grp Sat Flow(s),veh/h/ln	1775	0	1774	1770	1863	0
Q Serve(g_s), s	1.2	0.0	7.3	0.8	3.4	0.0
Cycle Q Clear(g_c), s	1.2	0.0	7.3	0.8	3.4	0.0
Prop In Lane	0.98	0.00	1.00			0.00
Lane Grp Cap(c), veh/h	121	0	519	2352	444	0
V/C Ratio(X)	0.54	0.00	0.81	0.10	0.49	0.00
Avail Cap(c_a), veh/h	1871	0	816	5831	1963	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	11.0	2.0	11.1	0.0
Incr Delay (d2), s/veh	3.7	0.0	3.2	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.0	0.4	1.8	0.0
LnGrp Delay(d),s/veh	18.9	0.0	14.3	2.1	11.9	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	66			659	217	
Approach Delay, s/veh	18.9			9.8	11.9	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.9		6.8	14.4	12.5		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		55.5		35.5	15.5	35.5		
Max Q Clear Time (g_c+I1), s		2.8		3.2	9.3	5.4		
Green Ext Time (p_c), s		2.8		0.2	0.7	2.6		

Intersection Summary		
HCM 2010 Ctrl Delay		10.9
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	194	234	149	264	20	209	356	76	10	172	20
Future Volume (veh/h)	21	194	234	149	264	20	209	356	76	10	172	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	211	88	162	287	15	227	387	62	11	187	9
Adj No. of Lanes	0	2	0	0	2	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	832	323	411	709	39	486	750	122	128	1319	62
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	94	2313	897	696	1970	107	812	1851	302	61	3253	152
Grp Volume(v), veh/h	174	0	148	230	0	234	340	0	336	109	0	98
Grp Sat Flow(s),veh/h/ln	1793	0	1512	1100	0	1673	1331	0	1634	1802	0	1664
Q Serve(g_s), s	0.0	0.0	2.7	4.7	0.0	4.0	6.5	0.0	5.9	0.0	0.0	1.4
Cycle Q Clear(g_c), s	2.5	0.0	2.7	7.4	0.0	4.0	7.9	0.0	5.9	1.4	0.0	1.4
Prop In Lane	0.13		0.59	0.71		0.06	0.67		0.18	0.10		0.09
Lane Grp Cap(c), veh/h	751	0	544	556	0	602	696	0	662	834	0	675
V/C Ratio(X)	0.23	0.00	0.27	0.41	0.00	0.39	0.49	0.00	0.51	0.13	0.00	0.15
Avail Cap(c_a), veh/h	1049	0	809	771	0	895	1220	0	1301	1495	0	1325
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	0.0	8.7	10.5	0.0	9.1	9.1	0.0	8.5	7.2	0.0	7.2
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.5	0.0	0.4	0.5	0.0	0.6	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.2	2.1	0.0	1.9	2.9	0.0	2.7	0.7	0.0	0.7
LnGrp Delay(d),s/veh	8.8	0.0	9.0	11.0	0.0	9.5	9.7	0.0	9.1	7.3	0.0	7.3
LnGrp LOS	A		A	B		A	A		A	A		A
Approach Vol, veh/h		322			464			676			207	
Approach Delay, s/veh		8.9			10.3			9.4			7.3	
Approach LOS		A			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		18.3		20.0		18.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		20.5		30.5		20.5				
Max Q Clear Time (g_c+I1), s		9.9		4.7		3.4		9.4				
Green Ext Time (p_c), s		5.1		4.4		5.5		3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			9.3									
HCM 2010 LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	28	210	75	32	7	90	566	147	10	736	20
Future Volume (veh/h)	20	28	210	75	32	7	90	566	147	10	736	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	22	30	115	82	35	4	98	615	128	11	800	19
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	75	216	344	122	10	245	1322	265	108	1907	45
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	115	379	1091	905	618	52	221	2377	477	12	3428	81
Grp Volume(v), veh/h	167	0	0	121	0	0	408	0	433	435	0	395
Grp Sat Flow(s),veh/h/ln	1585	0	0	1575	0	0	1464	0	1611	1843	0	1678
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	5.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0	2.1	0.0	0.0	4.6	0.0	6.0	4.9	0.0	5.0
Prop In Lane	0.13		0.69	0.68		0.03	0.24		0.30	0.03		0.05
Lane Grp Cap(c), veh/h	425	0	0	477	0	0	936	0	896	1126	0	933
V/C Ratio(X)	0.39	0.00	0.00	0.25	0.00	0.00	0.44	0.00	0.48	0.39	0.00	0.42
Avail Cap(c_a), veh/h	989	0	0	974	0	0	1473	0	1562	1866	0	1627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	0.0	12.6	0.0	0.0	4.6	0.0	4.9	4.7	0.0	4.7
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.4	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	1.1	0.0	0.0	2.4	0.0	2.6	2.5	0.0	2.4
LnGrp Delay(d),s/veh	13.7	0.0	0.0	12.9	0.0	0.0	4.9	0.0	5.3	4.9	0.0	5.0
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		167			121			841			830	
Approach Delay, s/veh		13.7			12.9			5.1			5.0	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.9		11.7		24.9		11.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		35.5		20.5		35.5		20.5
Max Q Clear Time (g_c+I1), s		8.0		5.4		7.0		4.1
Green Ext Time (p_c), s		12.4		1.6		12.6		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	849	190	30	1281	384	270	340	20	199	260	510
Future Volume (veh/h)	240	849	190	30	1281	384	270	340	20	199	260	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	261	923	81	33	1392	218	293	370	0	216	283	400
Adj No. of Lanes	2	2	1	1	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	332	1078	482	160	1538	459	387	1280	572	361	1252	558
Arrive On Green	0.10	0.31	0.31	0.09	0.31	0.30	0.11	0.36	0.00	0.10	0.35	0.35
Sat Flow, veh/h	3343	3438	1538	1723	4940	1532	3442	3539	1583	3442	3539	1577
Grp Volume(v), veh/h	261	923	81	33	1392	218	293	370	0	216	283	400
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1723	1647	1532	1721	1770	1583	1721	1770	1577
Q Serve(g_s), s	9.9	32.7	5.0	2.3	35.1	11.3	10.7	9.7	0.0	7.8	7.3	20.4
Cycle Q Clear(g_c), s	9.9	32.7	5.0	2.3	35.1	11.3	10.7	9.7	0.0	7.8	7.3	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	332	1078	482	160	1538	459	387	1280	572	361	1252	558
V/C Ratio(X)	0.79	0.86	0.17	0.21	0.91	0.47	0.76	0.29	0.00	0.60	0.23	0.72
Avail Cap(c_a), veh/h	334	1243	556	160	1558	465	387	1280	572	361	1252	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	41.9	32.3	54.5	42.9	20.7	56.0	29.6	0.0	55.6	29.5	18.6
Incr Delay (d2), s/veh	10.0	4.7	0.1	0.6	7.9	0.8	8.3	0.6	0.0	2.7	0.4	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	16.2	2.1	1.1	17.1	4.9	5.6	4.8	0.0	3.9	3.6	10.1
LnGrp Delay(d),s/veh	67.2	46.5	32.5	55.1	50.8	21.5	64.3	30.2	0.0	58.3	29.9	26.3
LnGrp LOS	E	D	C	E	D	C	E	C		E	C	C
Approach Vol, veh/h		1265			1643			663			899	
Approach Delay, s/veh		49.9			47.0			45.3			35.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	51.0	16.6	44.8	18.6	50.0	16.9	44.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	12.0	45.5	6.0	* 46	13.0	44.5	12.0	39.5
Max Q Clear Time (g_c+I1), s	9.8	11.7	4.3	34.7	12.7	22.4	11.9	37.1
Green Ext Time (p_c), s	0.5	2.5	1.4	4.5	0.1	3.2	0.0	1.8

Intersection Summary		
HCM 2010 Ctrl Delay		45.2
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	617	110	860	774	387	60	1248	660	418	1573	80
Future Volume (veh/h)	160	617	110	860	774	387	60	1248	660	418	1573	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	174	671	0	935	841	0	65	1357	0	454	1710	83
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	217	787	352	811	1202	538	110	1393	824	431	1676	81
Arrive On Green	0.13	0.23	0.00	0.24	0.35	0.00	0.06	0.27	0.00	0.13	0.34	0.32
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1583	3442	4969	241
Grp Volume(v), veh/h	174	671	0	935	841	0	65	1357	0	454	1166	627
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1583	1721	1695	1820
Q Serve(g_s), s	12.5	23.9	0.0	31.0	26.9	0.0	4.6	33.8	0.0	16.0	43.1	43.1
Cycle Q Clear(g_c), s	12.5	23.9	0.0	31.0	26.9	0.0	4.6	33.8	0.0	16.0	43.1	43.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	217	787	352	811	1202	538	110	1393	824	431	1144	614
V/C Ratio(X)	0.80	0.85	0.00	1.15	0.70	0.00	0.59	0.97	0.00	1.05	1.02	1.02
Avail Cap(c_a), veh/h	270	861	385	811	1202	538	111	1393	824	431	1144	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	47.2	0.0	48.4	35.8	0.0	58.3	45.9	0.0	55.9	42.3	42.5
Incr Delay (d2), s/veh	10.4	7.5	0.0	82.5	1.7	0.0	5.5	18.1	0.0	58.0	31.6	41.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	12.2	0.0	23.5	13.0	0.0	2.4	18.2	0.0	11.0	25.0	28.6
LnGrp Delay(d),s/veh	64.7	54.7	0.0	130.9	37.5	0.0	63.8	64.0	0.0	113.9	74.0	84.2
LnGrp LOS	E	D		F	D		E	E		F	F	F
Approach Vol, veh/h		845			1776			1422			2247	
Approach Delay, s/veh		56.7			86.6			64.0			84.9	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	39.0	35.0	33.7	11.9	47.1	20.1	48.6
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	32.5	29.0	* 30	6.0	40.5	18.5	40.5
Max Q Clear Time (g_c+I1), s	18.0	35.8	33.0	25.9	6.6	45.1	14.5	28.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.0	0.1	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	76.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	977	658	30	130	727	268	50	271	150	435	195	1574
Future Volume (veh/h)	977	658	30	130	727	268	50	271	150	435	195	1574
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1812	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1062	715	31	141	790	0	54	295	115	473	212	0
Adj No. of Lanes	3	2	0	1	2	1	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1350	1513	66	171	924	413	70	345	132	602	508	432
Arrive On Green	0.28	0.45	0.43	0.10	0.27	0.00	0.04	0.14	0.14	0.17	0.27	0.00
Sat Flow, veh/h	4860	3362	146	1774	3438	1538	1774	2507	956	3442	1863	1583
Grp Volume(v), veh/h	1062	366	380	141	790	0	54	206	204	473	212	0
Grp Sat Flow(s),veh/h/ln	1620	1721	1786	1774	1719	1538	1774	1770	1694	1721	1863	1583
Q Serve(g_s), s	22.9	16.9	16.9	8.9	24.8	0.0	3.4	12.9	13.4	14.9	10.6	0.0
Cycle Q Clear(g_c), s	22.9	16.9	16.9	8.9	24.8	0.0	3.4	12.9	13.4	14.9	10.6	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	1350	775	804	171	924	413	70	243	233	602	508	432
V/C Ratio(X)	0.79	0.47	0.47	0.82	0.85	0.00	0.77	0.85	0.87	0.79	0.42	0.00
Avail Cap(c_a), veh/h	2398	1001	1039	328	939	420	250	249	239	986	509	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.9	21.8	21.9	50.3	39.4	0.0	54.0	47.8	48.0	44.8	33.8	0.0
Incr Delay (d2), s/veh	1.1	0.4	0.4	9.5	7.7	0.0	16.2	22.5	27.7	2.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	8.1	8.4	4.8	12.7	0.0	2.0	7.8	8.1	7.3	5.6	0.0
LnGrp Delay(d),s/veh	38.9	22.2	22.3	59.8	47.1	0.0	70.2	70.3	75.7	47.1	34.4	0.0
LnGrp LOS	D	C	C	E	D		E	E	E	D	C	
Approach Vol, veh/h		1808			931			464			685	
Approach Delay, s/veh		32.1			49.0			72.7			43.2	
Approach LOS		C			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	55.1	8.5	35.0	35.5	34.5	22.3	21.1
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	10.9	18.9	5.4	12.6	24.9	26.8	16.9	15.4
Green Ext Time (p_c), s	0.2	14.0	0.1	3.1	4.6	1.7	1.4	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	735	381	190	576	0	415	0	30	0	0	0
Future Volume (veh/h)	0	735	381	190	576	0	415	0	30	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	799	376	207	626	0	451	0	12	0	0	0
Adj No. of Lanes	1	2	0	2	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	968	454	349	2018	0	548	546	476	2	5	0
Arrive On Green	0.00	0.43	0.42	0.10	0.59	0.00	0.31	0.00	0.30	0.00	0.00	0.00
Sat Flow, veh/h	1774	2250	1055	3343	3529	0	1774	1770	1543	1774	3632	0
Grp Volume(v), veh/h	0	610	565	207	626	0	451	0	12	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1586	1672	1719	0	1774	1770	1543	1774	1770	0
Q Serve(g_s), s	0.0	24.0	24.3	4.5	7.1	0.0	18.1	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.0	24.3	4.5	7.1	0.0	18.1	0.0	0.4	0.0	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	740	682	349	2018	0	548	546	476	2	5	0
V/C Ratio(X)	0.00	0.82	0.83	0.59	0.31	0.00	0.82	0.00	0.03	0.00	0.00	0.00
Avail Cap(c_a), veh/h	139	785	724	1046	2376	0	810	808	704	810	1615	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.3	19.7	32.8	8.0	0.0	24.6	0.0	18.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.8	7.6	1.6	0.1	0.0	4.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.7	12.0	2.2	3.3	0.0	9.4	0.0	0.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	26.1	27.3	34.4	8.1	0.0	29.0	0.0	18.8	0.0	0.0	0.0
LnGrp LOS		C	C	C	A		C		B			
Approach Vol, veh/h		1175			833			463			0	
Approach Delay, s/veh		26.7			14.6			28.8			0.0	
Approach LOS		C			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	37.0		27.7	0.0	49.0		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	16.5	26.3		20.1	0.0	9.1		0.0
Green Ext Time (p_c), s	0.6	5.7		1.3	0.0	16.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	310	80	60	560	120	50	57	0	10	50	204
Future Volume (veh/h)	163	310	80	60	560	120	50	57	0	10	50	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		1.00	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	177	337	65	65	609	119	54	62	0	11	54	44
Adj No. of Lanes	0	2	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	564	1023	201	155	894	167	273	218	0	307	109	89
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.12	0.12	0.00	0.12	0.12	0.12
Sat Flow, veh/h	618	1597	314	79	1396	260	1270	1863	0	1307	931	759
Grp Volume(v), veh/h	242	0	337	793	0	0	54	62	0	11	0	98
Grp Sat Flow(s),veh/h/ln	900	0	1628	1735	0	0	1270	1863	0	1307	0	1690
Q Serve(g_s), s	0.0	0.0	3.5	0.3	0.0	0.0	1.5	1.1	0.0	0.3	0.0	2.0
Cycle Q Clear(g_c), s	3.9	0.0	3.5	10.5	0.0	0.0	3.6	1.1	0.0	1.4	0.0	2.0
Prop In Lane	0.73		0.19	0.08		0.15	1.00		0.00	1.00		0.45
Lane Grp Cap(c), veh/h	745	0	1043	1217	0	0	273	218	0	307	0	198
V/C Ratio(X)	0.32	0.00	0.32	0.65	0.00	0.00	0.20	0.28	0.00	0.04	0.00	0.50
Avail Cap(c_a), veh/h	1017	0	1557	1747	0	0	655	778	0	700	0	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.0	0.0	3.0	4.3	0.0	0.0	17.0	15.0	0.0	15.6	0.0	15.4
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.6	0.0	0.0	0.3	0.7	0.0	0.0	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.6	5.3	0.0	0.0	0.6	0.6	0.0	0.1	0.0	1.0
LnGrp Delay(d),s/veh	3.2	0.0	3.2	4.9	0.0	0.0	17.4	15.7	0.0	15.7	0.0	17.3
LnGrp LOS	A		A	A			B	B		B		B
Approach Vol, veh/h		579			793			116			109	
Approach Delay, s/veh		3.2			4.9			16.5			17.1	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		8.8		28.3		8.8		28.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5
Max Q Clear Time (g_c+I1), s		5.6		5.9		4.0		12.5
Green Ext Time (p_c), s		0.7		12.8		0.7		11.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	180	924	90	50	220	818	590	70	1162	20
Future Volume (veh/h)	20	40	180	924	90	50	220	818	590	70	1162	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	43	56	869	287	15	239	889	457	76	1263	21
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	171	140	966	507	429	473	1398	851	419	1259	21
Arrive On Green	0.09	0.09	0.09	0.27	0.27	0.27	0.27	0.27	0.27	0.24	0.24	0.23
Sat Flow, veh/h	1774	1863	1526	3548	1863	1576	1774	5085	1528	1774	5148	86
Grp Volume(v), veh/h	22	43	56	869	287	15	239	889	457	76	832	452
Grp Sat Flow(s),veh/h/ln	1774	1863	1526	1774	1863	1576	1774	1695	1528	1774	1695	1843
Q Serve(g_s), s	1.5	2.7	4.4	30.2	17.0	0.9	14.6	19.7	24.7	4.4	31.3	31.3
Cycle Q Clear(g_c), s	1.5	2.7	4.4	30.2	17.0	0.9	14.6	19.7	24.7	4.4	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	163	171	140	966	507	429	473	1398	851	419	829	451
V/C Ratio(X)	0.13	0.25	0.40	0.90	0.57	0.03	0.51	0.64	0.54	0.18	1.00	1.00
Avail Cap(c_a), veh/h	396	416	341	1001	525	445	473	1398	851	419	829	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	54.0	54.8	44.9	40.1	34.2	39.8	40.8	18.7	39.0	48.3	48.4
Incr Delay (d2), s/veh	0.1	0.3	0.7	10.3	0.8	0.0	0.4	2.2	2.4	0.1	32.0	43.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	1.9	16.2	8.8	0.4	7.2	9.5	16.7	2.2	18.3	21.3
LnGrp Delay(d),s/veh	53.6	54.3	55.5	55.2	40.8	34.2	40.2	43.0	21.2	39.1	80.4	91.6
LnGrp LOS	D	D	E	E	D	C	D	D	C	D	F	F
Approach Vol, veh/h		121			1171			1585			1360	
Approach Delay, s/veh		54.7			51.4			36.3			81.8	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.2	39.2		15.8	38.1	35.3		38.8
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	10.0	33.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	16.4	26.7		6.4	16.6	33.3		32.2
Green Ext Time (p_c), s	0.1	1.8		0.1	0.0	0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	55.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	10	120	85	20	30	70	1408	131	30	2099	364
Future Volume (veh/h)	410	10	120	85	20	30	70	1408	131	30	2099	364
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	446	11	55	92	22	26	76	1530	135	33	2282	0
Adj No. of Lanes	0	1	1	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	428	9	496	41	10	2	124	2672	236	72	2707	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.30	0.07	0.56	0.54	0.04	0.53	0.00
Sat Flow, veh/h	1200	30	1571	0	33	8	1774	4758	420	1774	5253	0
Grp Volume(v), veh/h	457	0	55	140	0	0	76	1090	575	33	2282	0
Grp Sat Flow(s),veh/h/ln	1230	0	1571	41	0	0	1774	1695	1787	1774	1695	0
Q Serve(g_s), s	0.0	0.0	3.6	0.0	0.0	0.0	6.1	30.3	30.5	2.7	55.5	0.0
Cycle Q Clear(g_c), s	46.0	0.0	3.6	46.0	0.0	0.0	6.1	30.3	30.5	2.7	55.5	0.0
Prop In Lane	0.98		1.00	0.66		0.19	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	437	0	496	54	0	0	124	1904	1004	72	2707	0
V/C Ratio(X)	1.05	0.00	0.11	2.60	0.00	0.00	0.61	0.57	0.57	0.46	0.84	0.00
Avail Cap(c_a), veh/h	437	0	496	54	0	0	134	1904	1004	134	2825	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	0.0	35.4	62.2	0.0	0.0	65.9	20.7	20.9	68.4	28.9	0.0
Incr Delay (d2), s/veh	55.6	0.0	0.0	771.7	0.0	0.0	4.6	0.3	0.5	1.7	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.2	0.0	1.6	13.7	0.0	0.0	3.1	14.1	15.2	1.3	26.3	0.0
LnGrp Delay(d),s/veh	108.1	0.0	35.4	833.9	0.0	0.0	70.5	20.9	21.4	70.0	31.2	0.0
LnGrp LOS	F		D	F			E	C	C	E	C	
Approach Vol, veh/h		512			140			1741			2315	
Approach Delay, s/veh		100.3			833.9			23.3			31.7	
Approach LOS		F			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	85.9		50.0	14.2	81.6		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	4.7	32.5		48.0	8.1	57.5		48.0
Green Ext Time (p_c), s	0.0	34.6		0.0	0.0	17.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	153	20	30	194	50	20	160	20	60	230	635
Future Volume (veh/h)	396	153	20	30	194	50	20	160	20	60	230	635
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1823	1900
Adj Flow Rate, veh/h	430	166	13	33	211	39	22	174	15	65	250	433
Adj No. of Lanes	2	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	586	1023	79	60	509	92	44	1101	94	114	624	545
Arrive On Green	0.17	0.31	0.29	0.03	0.17	0.16	0.02	0.33	0.33	0.07	0.36	0.37
Sat Flow, veh/h	3442	3328	258	1774	2974	538	1774	3301	282	1723	1732	1515
Grp Volume(v), veh/h	430	88	91	33	124	126	22	93	96	65	250	433
Grp Sat Flow(s),veh/h/ln	1721	1770	1817	1774	1770	1743	1774	1770	1813	1723	1732	1515
Q Serve(g_s), s	8.2	2.5	2.6	1.3	4.3	4.5	0.8	2.6	2.6	2.5	7.5	17.7
Cycle Q Clear(g_c), s	8.2	2.5	2.6	1.3	4.3	4.5	0.8	2.6	2.6	2.5	7.5	17.7
Prop In Lane	1.00		0.14	1.00		0.31	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	586	544	558	60	303	298	44	590	605	114	624	545
V/C Ratio(X)	0.73	0.16	0.16	0.55	0.41	0.42	0.50	0.16	0.16	0.57	0.40	0.79
Avail Cap(c_a), veh/h	2728	918	943	384	918	904	384	893	914	397	874	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	17.5	17.6	33.0	25.6	25.8	33.4	16.3	16.3	31.5	16.6	19.4
Incr Delay (d2), s/veh	1.8	0.1	0.1	7.6	0.9	1.0	8.4	0.1	0.1	4.5	0.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.2	1.3	0.7	2.2	2.3	0.5	1.3	1.3	1.4	3.6	7.9
LnGrp Delay(d),s/veh	29.1	17.7	17.7	40.6	26.5	26.8	41.8	16.4	16.4	35.9	17.0	23.3
LnGrp LOS	C	B	B	D	C	C	D	B	B	D	B	C
Approach Vol, veh/h		609			283			211			748	
Approach Delay, s/veh		25.8			28.3			19.0			22.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	28.1	7.4	25.3	6.7	30.0	16.8	15.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	4.5	4.6	3.3	4.6	2.8	19.7	10.2	6.5
Green Ext Time (p_c), s	0.1	5.9	0.0	2.5	0.0	4.7	1.6	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	570	80	208	40	1402	280	262	1733	20
Future Volume (veh/h)	0	0	20	570	80	208	40	1402	280	262	1733	20
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				682	0	130	43	1524	0	285	1884	21
Adj No. of Lanes				2	0	1	1	2	1	2	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				846	0	372	149	1991	846	370	2445	27
Arrive On Green				0.24	0.00	0.24	0.53	0.53	0.00	0.11	0.68	0.68
Sat Flow, veh/h				3548	0	1559	235	3725	1583	3442	3585	40
Grp Volume(v), veh/h				682	0	130	43	1524	0	285	928	977
Grp Sat Flow(s),veh/h/ln				1774	0	1559	235	1863	1583	1721	1770	1856
Q Serve(g_s), s				18.2	0.0	7.0	15.1	32.4	0.0	8.1	35.2	35.5
Cycle Q Clear(g_c), s				18.2	0.0	7.0	35.8	32.4	0.0	8.1	35.2	35.5
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h				846	0	372	149	1991	846	370	1207	1266
V/C Ratio(X)				0.81	0.00	0.35	0.29	0.77	0.00	0.77	0.77	0.77
Avail Cap(c_a), veh/h				1272	0	559	154	2077	883	548	1339	1404
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				36.1	0.0	31.8	27.7	18.4	0.0	43.6	10.7	10.7
Incr Delay (d2), s/veh				1.3	0.0	0.2	0.4	1.5	0.0	5.2	2.1	2.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.1	0.0	3.0	1.0	16.9	0.0	4.1	17.7	18.6
LnGrp Delay(d),s/veh				37.3	0.0	32.0	28.1	19.9	0.0	48.8	12.8	12.8
LnGrp LOS				D		C	C	B		D	B	B
Approach Vol, veh/h					812			1567			2190	
Approach Delay, s/veh					36.5			20.1			17.5	
Approach LOS					D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	57.7				72.5		27.9
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	10.1	37.8				37.5		20.2
Green Ext Time (p_c), s	0.7	15.9				29.7		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	589	620	340	290	640	250	590	279	250	210	410	760
Future Volume (veh/h)	589	620	340	290	640	250	590	279	250	210	410	760
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	640	674	323	315	696	0	641	303	148	228	446	0
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	392	648	311	377	955	427	391	442	211	524	486	0
Arrive On Green	0.11	0.28	0.27	0.11	0.28	0.00	0.22	0.19	0.18	0.30	0.27	0.00
Sat Flow, veh/h	3442	2323	1113	3343	3438	1538	1774	2326	1110	1723	1810	0
Grp Volume(v), veh/h	640	513	484	315	696	0	641	229	222	228	446	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1666	1672	1719	1538	1774	1770	1667	1723	1810	0
Q Serve(g_s), s	16.0	39.2	39.2	13.0	25.8	0.0	31.0	16.9	17.5	14.9	33.6	0.0
Cycle Q Clear(g_c), s	16.0	39.2	39.2	13.0	25.8	0.0	31.0	16.9	17.5	14.9	33.6	0.0
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	392	494	465	377	955	427	391	337	317	524	486	0
V/C Ratio(X)	1.63	1.04	1.04	0.84	0.73	0.00	1.64	0.68	0.70	0.43	0.92	0.00
Avail Cap(c_a), veh/h	392	494	465	619	1126	504	391	579	546	524	528	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	62.2	50.6	50.9	61.1	45.9	0.0	54.7	52.9	53.4	39.2	49.8	0.0
Incr Delay (d2), s/veh	296.2	51.2	52.4	2.3	4.1	0.0	298.2	8.4	9.8	0.2	23.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.7	26.1	24.7	6.1	12.8	0.0	47.5	9.0	9.0	7.1	20.0	0.0
LnGrp Delay(d),s/veh	358.4	101.8	103.3	63.4	50.0	0.0	353.0	61.3	63.2	39.4	73.3	0.0
LnGrp LOS	F	F	F	E	D		F	E	E	D	E	
Approach Vol, veh/h		1637			1011			1092			674	
Approach Delay, s/veh		202.6			54.2			232.9			61.8	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	43.2	35.0	42.5	20.0	43.0	46.7	30.7
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	15.0	41.2	33.0	35.6	18.0	27.8	16.9	19.5
Green Ext Time (p_c), s	0.2	0.0	0.0	1.4	0.0	10.5	3.0	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	154.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	850	80	310	930	0	0	0	0	210	1683	490
Future Volume (veh/h)	0	850	80	310	930	0	0	0	0	210	1683	490
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	924	0	337	1011	0				228	1829	0
Adj No. of Lanes	0	3	0	1	2	0				1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1040	0	310	1461	0				923	1939	824
Arrive On Green	0.00	0.20	0.00	0.17	0.41	0.00				0.52	0.52	0.00
Sat Flow, veh/h	0	5421	0	1774	3632	0				1774	3725	1583
Grp Volume(v), veh/h	0	924	0	337	1011	0				228	1829	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	1774	1770	0				1774	1863	1583
Q Serve(g_s), s	0.0	21.2	0.0	21.0	28.2	0.0				8.5	55.5	0.0
Cycle Q Clear(g_c), s	0.0	21.2	0.0	21.0	28.2	0.0				8.5	55.5	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1040	0	310	1461	0				923	1939	824
V/C Ratio(X)	0.00	0.89	0.00	1.09	0.69	0.00				0.25	0.94	0.00
Avail Cap(c_a), veh/h	0	1040	0	310	1461	0				931	1956	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.51	0.51	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	46.4	0.0	49.5	29.0	0.0				15.8	27.1	0.0
Incr Delay (d2), s/veh	0.0	11.3	0.0	61.8	1.4	0.0				0.2	10.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.0	0.0	15.6	14.0	0.0				4.2	31.1	0.0
LnGrp Delay(d),s/veh	0.0	57.7	0.0	111.3	30.4	0.0				16.0	37.1	0.0
LnGrp LOS		E		F	C					B	D	
Approach Vol, veh/h		924			1348						2057	
Approach Delay, s/veh		57.7			50.6						34.8	
Approach LOS		E			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	25.0	28.5		66.5		53.5		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 21	23.1		* 63		48.1		
Max Q Clear Time (g_c+I1), s	23.0	23.2		57.5		30.2		
Green Ext Time (p_c), s	0.0	0.0		4.8		13.2		

Intersection Summary		
HCM 2010 Ctrl Delay		44.6
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	550	290	611	390	110	260	976	700	120	670	140
Future Volume (veh/h)	230	550	290	611	390	110	260	976	700	120	670	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	598	203	664	424	104	283	1061	427	130	728	141
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	322	787	351	736	968	235	358	1128	505	162	905	175
Arrive On Green	0.10	0.23	0.23	0.22	0.35	0.34	0.10	0.32	0.32	0.09	0.31	0.29
Sat Flow, veh/h	3343	3438	1534	3343	2744	667	3442	3539	1583	1774	2957	572
Grp Volume(v), veh/h	250	598	203	664	264	264	283	1061	427	130	436	433
Grp Sat Flow(s),veh/h/ln	1672	1719	1534	1672	1719	1692	1721	1770	1583	1774	1770	1760
Q Serve(g_s), s	8.3	18.4	13.3	21.9	13.3	13.6	9.1	33.1	28.5	8.2	25.7	25.8
Cycle Q Clear(g_c), s	8.3	18.4	13.3	21.9	13.3	13.6	9.1	33.1	28.5	8.2	25.7	25.8
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	322	787	351	736	606	597	358	1128	505	162	541	538
V/C Ratio(X)	0.78	0.76	0.58	0.90	0.44	0.44	0.79	0.94	0.85	0.80	0.80	0.81
Avail Cap(c_a), veh/h	619	1091	487	914	621	611	941	1128	505	485	562	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	40.8	38.9	43.0	28.1	28.4	49.6	37.6	36.0	50.6	36.2	36.5
Incr Delay (d2), s/veh	3.0	1.2	0.6	9.3	0.2	0.2	1.5	14.7	12.6	3.5	8.1	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	8.9	5.7	11.1	6.3	6.4	4.4	18.4	14.2	4.2	13.8	13.8
LnGrp Delay(d),s/veh	53.1	42.0	39.4	52.3	28.3	28.6	51.1	52.3	48.6	54.1	44.4	44.7
LnGrp LOS	D	D	D	D	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1051			1192			1771			999	
Approach Delay, s/veh		44.2			41.7			51.2			45.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	40.2	29.0	30.0	15.8	38.7	14.9	44.0
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	10.2	35.1	23.9	20.4	11.1	27.8	10.3	15.6
Green Ext Time (p_c), s	0.1	0.0	0.9	4.0	0.5	5.6	0.4	4.6
Intersection Summary								
HCM 2010 Ctrl Delay			46.4					
HCM 2010 LOS			D					

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	110	40	110	230	0	0	0	0	761	0	50
Future Volume (veh/h)	0	110	40	110	230	0	0	0	0	761	0	50
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	116	6	116	242	0				801	0	28
Adj No. of Lanes	0	1	1	1	1	0				1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	252	214	153	582	0				896	0	800
Arrive On Green	0.00	0.14	0.14	0.09	0.31	0.00				0.51	0.00	0.51
Sat Flow, veh/h	0	1863	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	116	6	116	242	0				801	0	28
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	2.8	0.2	3.2	5.1	0.0				20.1	0.0	0.4
Cycle Q Clear(g_c), s	0.0	2.8	0.2	3.2	5.1	0.0				20.1	0.0	0.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	252	214	153	582	0				896	0	800
V/C Ratio(X)	0.00	0.46	0.03	0.76	0.42	0.00				0.89	0.00	0.03
Avail Cap(c_a), veh/h	0	962	818	557	962	0				1276	0	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.7	18.5	22.1	13.4	0.0				11.0	0.0	6.2
Incr Delay (d2), s/veh	0.0	1.3	0.1	7.6	0.5	0.0				6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.1	1.9	2.6	0.0				11.1	0.0	0.2
LnGrp Delay(d),s/veh	0.0	21.0	18.6	29.6	13.9	0.0				17.2	0.0	6.2
LnGrp LOS		C	B	C	B					B		A
Approach Vol, veh/h		122			358						829	
Approach Delay, s/veh		20.9			19.0						16.9	
Approach LOS		C			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			8.7	11.2		29.5		19.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			15.5	25.5		35.5		25.5
Max Q Clear Time (g_c+I1), s			5.2	4.8		22.1		7.1
Green Ext Time (p_c), s			0.2	1.8		2.8		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	851	0	0	190	537	150	0	70	0	0	0
Future Volume (veh/h)	20	851	0	0	190	537	150	0	70	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1900			
Adj Flow Rate, veh/h	21	896	0	0	200	347	158	0	12			
Adj No. of Lanes	1	1	0	0	1	1	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	38	1137	0	0	853	725	226	0	201			
Arrive On Green	0.02	0.61	0.00	0.00	0.46	0.46	0.13	0.00	0.13			
Sat Flow, veh/h	1774	1863	0	0	1863	1583	1774	0	1583			
Grp Volume(v), veh/h	21	896	0	0	200	347	158	0	12			
Grp Sat Flow(s),veh/h/ln	1774	1863	0	0	1863	1583	1774	0	1583			
Q Serve(g_s), s	0.4	12.4	0.0	0.0	2.2	5.2	2.9	0.0	0.2			
Cycle Q Clear(g_c), s	0.4	12.4	0.0	0.0	2.2	5.2	2.9	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	38	1137	0	0	853	725	226	0	201			
V/C Ratio(X)	0.56	0.79	0.00	0.00	0.23	0.48	0.70	0.00	0.06			
Avail Cap(c_a), veh/h	802	1385	0	0	1385	1177	1836	0	1639			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.6	5.0	0.0	0.0	5.6	6.4	14.3	0.0	13.2			
Incr Delay (d2), s/veh	12.4	2.6	0.0	0.0	0.1	0.5	3.9	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.3	6.8	0.0	0.0	1.1	2.3	1.6	0.0	0.1			
LnGrp Delay(d),s/veh	29.0	7.6	0.0	0.0	5.8	6.9	18.3	0.0	13.3			
LnGrp LOS	C	A			A	A	B		B			
Approach Vol, veh/h		917			547			170				
Approach Delay, s/veh		8.1			6.5			17.9				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		8.9		25.4			5.2	20.2
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		35.5		25.5			15.5	25.5
Max Q Clear Time (g_c+I1), s		4.9		14.4			2.4	7.2
Green Ext Time (p_c), s		0.5		6.3			0.0	8.6

Intersection Summary		
HCM 2010 Ctrl Delay		8.6
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	20	0	10	30	10	10	47	10	10	54	897
Future Volume (veh/h)	370	20	0	10	30	10	10	47	10	10	54	897
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	402	22	0	11	33	4	11	51	3	11	59	358
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	713	28	0	218	543	58	166	553	29	111	89	484
Arrive On Green	0.39	0.39	0.00	0.39	0.39	0.39	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1329	73	0	238	1408	150	129	1549	81	14	250	1354
Grp Volume(v), veh/h	424	0	0	48	0	0	65	0	0	428	0	0
Grp Sat Flow(s),veh/h/ln	1401	0	0	1796	0	0	1759	0	0	1618	0	0
Q Serve(g_s), s	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.0	0.0	0.6	0.0	0.0	0.8	0.0	0.0	8.1	0.0	0.0
Prop In Lane	0.95		0.00	0.23		0.08	0.17		0.05	0.03		0.84
Lane Grp Cap(c), veh/h	741	0	0	819	0	0	749	0	0	684	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.06	0.00	0.00	0.09	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1216	0	0	1404	0	0	1343	0	0	1282	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	6.8	0.0	0.0	7.5	0.0	0.0	9.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	3.7	0.0	0.0
LnGrp Delay(d),s/veh	10.1	0.0	0.0	6.8	0.0	0.0	7.5	0.0	0.0	10.8	0.0	0.0
LnGrp LOS	B			A			A			B		
Approach Vol, veh/h		424			48			65			428	
Approach Delay, s/veh		10.1			6.8			7.5			10.8	
Approach LOS		B			A			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.0		18.0		17.0		18.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		25.5		25.5		25.5		25.5
Max Q Clear Time (g_c+I1), s		2.8		11.3		10.1		2.6
Green Ext Time (p_c), s		3.0		2.5		2.6		2.9

Intersection Summary			
HCM 2010 Ctrl Delay			10.0
HCM 2010 LOS			B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	230	260	47	150	603
Future Volume (veh/h)	54	230	260	47	150	603
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1900	1863
Adj Flow Rate, veh/h	59	39	283	46	163	655
Adj No. of Lanes	0	0	1	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	91	60	1006	163	287	916
Arrive On Green	0.09	0.09	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1010	668	1564	254	246	1425
Grp Volume(v), veh/h	99	0	0	329	818	0
Grp Sat Flow(s),veh/h/ln	1694	0	0	1818	1671	0
Q Serve(g_s), s	1.9	0.0	0.0	2.7	5.7	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	2.7	10.8	0.0
Prop In Lane	0.60	0.39		0.14	0.20	
Lane Grp Cap(c), veh/h	152	0	0	1169	1203	0
V/C Ratio(X)	0.65	0.00	0.00	0.28	0.68	0.00
Avail Cap(c_a), veh/h	1786	0	0	1916	1865	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	0.0	2.6	3.9	0.0
Incr Delay (d2), s/veh	4.6	0.0	0.0	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.3	5.0	0.0
LnGrp Delay(d),s/veh	19.5	0.0	0.0	2.7	4.6	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	99		329			818
Approach Delay, s/veh	19.5		2.7			4.6
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		26.2		7.5		26.2		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		35.5		35.5		35.5		
Max Q Clear Time (g_c+I1), s		4.7		3.9		12.8		
Green Ext Time (p_c), s		10.0		0.3		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	5.3
HCM 2010 LOS	A

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	339	225	240	604	90
Future Volume (veh/h)	90	339	225	240	604	90
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	98	0	245	261	657	0
Adj No. of Lanes	0	0	1	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	136	0	312	2583	852	0
Arrive On Green	0.08	0.00	0.18	0.73	0.46	0.00
Sat Flow, veh/h	1757	0	1774	3632	1863	0
Grp Volume(v), veh/h	99	0	245	261	657	0
Grp Sat Flow(s),veh/h/ln	1775	0	1774	1770	1863	0
Q Serve(g_s), s	2.5	0.0	6.2	1.0	13.8	0.0
Cycle Q Clear(g_c), s	2.5	0.0	6.2	1.0	13.8	0.0
Prop In Lane	0.99	0.00	1.00			0.00
Lane Grp Cap(c), veh/h	137	0	312	2583	852	0
V/C Ratio(X)	0.72	0.00	0.79	0.10	0.77	0.00
Avail Cap(c_a), veh/h	1350	0	589	4209	1417	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.0	0.0	18.4	1.8	10.6	0.0
Incr Delay (d2), s/veh	6.9	0.0	4.4	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.4	0.5	7.3	0.0
LnGrp Delay(d),s/veh	27.9	0.0	22.8	1.9	12.1	0.0
LnGrp LOS	C		C	A	B	
Approach Vol, veh/h	99			506	657	
Approach Delay, s/veh	27.9			12.0	12.1	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		38.6		8.1	12.7	25.9		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		55.5		35.5	15.5	35.5		
Max Q Clear Time (g_c+I1), s		3.0		4.5	8.2	15.8		
Green Ext Time (p_c), s		6.7		0.2	0.4	5.6		

Intersection Summary			
HCM 2010 Ctrl Delay			13.3
HCM 2010 LOS			B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	257	329	137	211	20	164	475	129	10	361	22
Future Volume (veh/h)	20	257	329	137	211	20	164	475	129	10	361	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	22	279	116	149	229	15	178	516	107	11	392	16
Adj No. of Lanes	0	2	0	0	2	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	827	325	371	626	43	340	882	184	96	1482	59
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	72	2335	917	638	1768	121	501	1986	415	25	3337	134
Grp Volume(v), veh/h	226	0	191	186	0	207	386	0	415	220	0	199
Grp Sat Flow(s),veh/h/ln	1816	0	1507	857	0	1670	1291	0	1611	1829	0	1668
Q Serve(g_s), s	0.0	0.0	4.2	5.8	0.0	4.1	7.4	0.0	8.6	0.0	0.0	3.4
Cycle Q Clear(g_c), s	4.0	0.0	4.2	10.0	0.0	4.1	10.7	0.0	8.6	3.3	0.0	3.4
Prop In Lane	0.10		0.61	0.80		0.07	0.46		0.26	0.05		0.08
Lane Grp Cap(c), veh/h	732	0	534	449	0	592	691	0	716	897	0	741
V/C Ratio(X)	0.31	0.00	0.36	0.42	0.00	0.35	0.56	0.00	0.58	0.24	0.00	0.27
Avail Cap(c_a), veh/h	916	0	693	563	0	767	1004	0	1101	1315	0	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.6	0.0	10.7	13.6	0.0	10.6	9.8	0.0	9.3	7.8	0.0	7.8
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.6	0.0	0.4	0.7	0.0	0.7	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.8	2.0	0.0	1.9	3.9	0.0	4.0	1.7	0.0	1.6
LnGrp Delay(d),s/veh	10.8	0.0	11.1	14.2	0.0	11.0	10.5	0.0	10.0	8.0	0.0	8.0
LnGrp LOS	B		B	B		B	B		B	A		A
Approach Vol, veh/h		417			393			801			419	
Approach Delay, s/veh		10.9			12.5			10.3			8.0	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.3		20.3		24.3		20.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		20.5		30.5		20.5
Max Q Clear Time (g_c+I1), s		12.7		6.2		5.4		12.0
Green Ext Time (p_c), s		7.0		4.4		8.1		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	35	170	68	29	8	180	742	181	12	859	30
Future Volume (veh/h)	10	35	170	68	29	8	180	742	181	12	859	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	11	38	87	74	32	2	191	789	177	13	914	29
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	82	163	276	99	5	313	1217	278	87	2207	69
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	63	517	1030	934	625	29	318	1868	426	13	3387	106
Grp Volume(v), veh/h	136	0	0	108	0	0	485	0	672	500	0	456
Grp Sat Flow(s),veh/h/ln	1611	0	0	1589	0	0	992	0	1620	1834	0	1672
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	11.7	0.0	0.0	6.2
Cycle Q Clear(g_c), s	3.6	0.0	0.0	2.5	0.0	0.0	16.2	0.0	11.7	6.0	0.0	6.2
Prop In Lane	0.08		0.64	0.69		0.02	0.39		0.26	0.03		0.06
Lane Grp Cap(c), veh/h	337	0	0	379	0	0	753	0	1056	1273	0	1090
V/C Ratio(X)	0.40	0.00	0.00	0.28	0.00	0.00	0.64	0.00	0.64	0.39	0.00	0.42
Avail Cap(c_a), veh/h	776	0	0	762	0	0	853	0	1217	1449	0	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	0.0	17.8	0.0	0.0	5.4	0.0	4.9	3.9	0.0	3.9
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.4	0.0	0.0	1.4	0.0	0.9	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	1.3	0.0	0.0	4.5	0.0	5.3	3.1	0.0	2.9
LnGrp Delay(d),s/veh	19.1	0.0	0.0	18.2	0.0	0.0	6.8	0.0	5.8	4.1	0.0	4.2
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		136			108			1157			956	
Approach Delay, s/veh		19.1			18.2			6.2			4.2	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.3		12.0		35.3		12.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		35.5		20.5		35.5		20.5
Max Q Clear Time (g_c+I1), s		18.2		5.6		8.2		4.5
Green Ext Time (p_c), s		12.6		1.3		17.5		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1716	500	70	1202	490	690	520	120	452	720	330
Future Volume (veh/h)	690	1716	500	70	1202	490	690	520	120	452	720	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	711	1769	276	72	1239	285	711	536	0	466	742	220
Adj No. of Lanes	2	2	1	1	3	1	2	2	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	720	1507	673	93	1387	413	1046	844	378	940	735	319
Arrive On Green	0.22	0.44	0.44	0.05	0.28	0.27	0.30	0.24	0.00	0.27	0.21	0.21
Sat Flow, veh/h	3343	3438	1535	1723	4940	1533	3442	3539	1583	3442	3539	1536
Grp Volume(v), veh/h	711	1769	276	72	1239	285	711	536	0	466	742	220
Grp Sat Flow(s),veh/h/ln	1672	1719	1535	1723	1647	1533	1721	1770	1583	1721	1770	1536
Q Serve(g_s), s	27.6	57.0	16.0	5.4	31.3	15.3	23.6	17.7	0.0	14.8	27.0	13.5
Cycle Q Clear(g_c), s	27.6	57.0	16.0	5.4	31.3	15.3	23.6	17.7	0.0	14.8	27.0	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	720	1507	673	93	1387	413	1046	844	378	940	735	319
V/C Ratio(X)	0.99	1.17	0.41	0.78	0.89	0.69	0.68	0.64	0.00	0.50	1.01	0.69
Avail Cap(c_a), veh/h	720	1507	673	93	1387	413	1046	844	378	940	735	319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.14	0.14	0.14	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	36.5	25.0	60.7	44.9	21.2	39.7	44.4	0.0	39.7	51.5	29.5
Incr Delay (d2), s/veh	9.7	79.2	0.1	32.9	7.8	4.8	1.8	3.6	0.0	0.4	35.5	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	43.6	6.8	3.4	15.2	7.0	11.4	9.1	0.0	7.1	16.8	6.8
LnGrp Delay(d),s/veh	60.6	115.7	25.0	93.6	52.7	26.1	41.5	48.1	0.0	40.1	87.0	41.0
LnGrp LOS	E	F	C	F	D	C	D	D		D	F	D
Approach Vol, veh/h		2756			1596			1247			1428	
Approach Delay, s/veh		92.4			49.8			44.3			64.6	
Approach LOS		F			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.0	35.0	11.5	61.0	44.0	31.0	32.0	40.5
Change Period (Y+Rc), s	5.0	5.5	5.5	* 5.5	5.0	5.5	5.0	5.5
Max Green Setting (Gmax), s	18.0	29.5	6.0	* 56	22.0	25.5	27.0	34.5
Max Q Clear Time (g_c+I1), s	16.8	19.7	7.4	59.0	25.6	29.0	29.6	33.3
Green Ext Time (p_c), s	0.7	2.4	0.0	0.0	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	68.5
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	906	90	890	800	549	90	1326	890	447	1296	90
Future Volume (veh/h)	110	906	90	890	800	549	90	1326	890	447	1296	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1810	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	116	954	0	937	842	0	95	1396	873	471	1364	89
Adj No. of Lanes	1	2	1	2	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	158	843	377	794	1358	607	109	1364	804	422	1606	105
Arrive On Green	0.09	0.25	0.00	0.24	0.39	0.00	0.06	0.27	0.27	0.12	0.33	0.31
Sat Flow, veh/h	1723	3438	1538	3343	3438	1538	1774	5085	1571	3442	4873	318
Grp Volume(v), veh/h	116	954	0	937	842	0	95	1396	873	471	949	504
Grp Sat Flow(s),veh/h/ln	1723	1719	1538	1672	1719	1538	1774	1695	1571	1721	1695	1800
Q Serve(g_s), s	8.6	32.0	0.0	31.0	25.6	0.0	6.9	35.0	35.0	16.0	34.0	34.1
Cycle Q Clear(g_c), s	8.6	32.0	0.0	31.0	25.6	0.0	6.9	35.0	35.0	16.0	34.0	34.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	158	843	377	794	1358	607	109	1364	804	422	1117	593
V/C Ratio(X)	0.73	1.13	0.00	1.18	0.62	0.00	0.87	1.02	1.09	1.12	0.85	0.85
Avail Cap(c_a), veh/h	264	843	377	794	1358	607	109	1364	804	422	1117	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	49.3	0.0	49.8	31.6	0.0	60.7	47.8	32.1	57.3	40.7	41.0
Incr Delay (d2), s/veh	2.5	73.9	0.0	93.7	0.8	0.0	47.7	30.5	57.9	79.3	6.2	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	23.8	0.0	24.6	12.3	0.0	4.8	20.1	41.7	12.2	16.9	18.8
LnGrp Delay(d),s/veh	60.2	123.2	0.0	143.5	32.4	0.0	108.5	78.3	89.9	136.6	47.0	52.0
LnGrp LOS	E	F		F	C		F	F	F	F	D	D
Approach Vol, veh/h		1070			1779			2364			1924	
Approach Delay, s/veh		116.3			90.9			83.8			70.2	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	39.0	35.0	36.5	12.0	47.0	16.0	55.5
Change Period (Y+Rc), s	6.0	6.5	6.0	* 6.5	6.0	6.5	5.5	6.5
Max Green Setting (Gmax), s	14.0	32.5	29.0	* 30	6.0	40.5	18.5	40.5
Max Q Clear Time (g_c+I1), s	18.0	37.0	33.0	34.0	8.9	36.1	10.6	27.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.2	0.1	8.1

Intersection Summary	
HCM 2010 Ctrl Delay	86.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1396	847	20	150	959	406	10	296	130	250	130	1170
Future Volume (veh/h)	1396	847	20	150	959	406	10	296	130	250	130	1170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1863	1810	1810	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1469	892	20	158	1009	0	11	312	105	263	137	0
Adj No. of Lanes	3	2	0	2	2	1	1	2	0	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	2	5	5	2	2	2	2	2	2
Cap, veh/h	1762	1918	43	222	893	399	18	351	116	378	435	370
Arrive On Green	0.36	0.56	0.54	0.06	0.26	0.00	0.01	0.13	0.13	0.11	0.23	0.00
Sat Flow, veh/h	4860	3440	77	3442	3438	1538	1774	2616	864	3442	1863	1583
Grp Volume(v), veh/h	1469	446	466	158	1009	0	11	209	208	263	137	0
Grp Sat Flow(s),veh/h/ln	1620	1720	1797	1721	1719	1538	1774	1770	1710	1721	1863	1583
Q Serve(g_s), s	33.0	18.5	18.5	5.4	31.0	0.0	0.7	13.9	14.3	8.8	7.3	0.0
Cycle Q Clear(g_c), s	33.0	18.5	18.5	5.4	31.0	0.0	0.7	13.9	14.3	8.8	7.3	0.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	1762	959	1002	222	893	399	18	237	229	378	435	370
V/C Ratio(X)	0.83	0.46	0.46	0.71	1.13	0.00	0.61	0.88	0.91	0.70	0.32	0.00
Avail Cap(c_a), veh/h	2279	959	1002	605	893	399	238	237	229	937	484	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.8	15.8	15.8	54.7	44.2	0.0	58.8	50.8	51.0	51.2	37.9	0.0
Incr Delay (d2), s/veh	2.2	0.4	0.3	4.2	72.7	0.0	28.3	29.7	35.3	2.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	8.9	9.3	2.7	23.6	0.0	0.5	8.8	9.0	4.3	3.8	0.0
LnGrp Delay(d),s/veh	37.0	16.1	16.1	58.9	116.9	0.0	87.2	80.5	86.3	53.6	38.3	0.0
LnGrp LOS	D	B	B	E	F		F	F	F	D	D	
Approach Vol, veh/h		2381			1167			428			400	
Approach Delay, s/veh		29.0			109.1			83.5			48.3	
Approach LOS		C			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	70.6	5.2	31.9	47.3	35.0	15.6	21.5
Change Period (Y+Rc), s	4.0	6.0	4.0	5.5	6.0	6.0	4.0	* 5.5
Max Green Setting (Gmax), s	21.0	64.0	16.0	29.5	54.0	29.0	31.0	* 16
Max Q Clear Time (g_c+I1), s	7.4	20.5	2.7	9.3	35.0	33.0	10.8	16.3
Green Ext Time (p_c), s	0.4	19.7	0.0	2.9	6.3	0.0	0.8	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		57.4
HCM 2010 LOS		E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	610	431	550	606	0	464	0	110	0	0	0
Future Volume (veh/h)	0	610	431	550	606	0	464	0	110	0	0	0
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1900	1810	1810	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	642	376	579	638	0	488	0	38	0	0	0
Adj No. of Lanes	1	2	0	2	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	2	721	422	700	2066	0	556	555	484	2	4	0
Arrive On Green	0.00	0.35	0.34	0.21	0.60	0.00	0.31	0.00	0.30	0.00	0.00	0.00
Sat Flow, veh/h	1774	2067	1210	3343	3529	0	1774	1770	1543	1774	3632	0
Grp Volume(v), veh/h	0	534	484	579	638	0	488	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1719	1558	1672	1719	0	1774	1770	1543	1774	1770	0
Q Serve(g_s), s	0.0	27.5	27.5	15.5	8.5	0.0	24.4	0.0	1.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.5	27.5	15.5	8.5	0.0	24.4	0.0	1.6	0.0	0.0	0.0
Prop In Lane	1.00		0.78	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	600	543	700	2066	0	556	555	484	2	4	0
V/C Ratio(X)	0.00	0.89	0.89	0.83	0.31	0.00	0.88	0.00	0.08	0.00	0.00	0.00
Avail Cap(c_a), veh/h	114	643	582	857	2066	0	663	661	577	663	1323	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	28.8	29.2	35.4	9.2	0.0	30.4	0.0	23.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	14.0	15.2	5.6	0.1	0.0	11.2	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.4	14.1	7.7	4.0	0.0	13.7	0.0	0.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	42.8	44.4	41.0	9.2	0.0	41.7	0.0	23.0	0.0	0.0	0.0
LnGrp LOS		D	D	D	A		D		C			
Approach Vol, veh/h		1018			1217			526			0	
Approach Delay, s/veh		43.5			24.4			40.3			0.0	
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.6	36.7		33.4	0.0	60.3		0.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	23.0	34.0		34.0	5.0	52.0		34.0
Max Q Clear Time (g_c+I1), s	17.5	29.5		26.4	0.0	10.5		0.0
Green Ext Time (p_c), s	1.1	2.1		1.2	0.0	14.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	620	90	120	430	120	100	71	0	0	57	347
Future Volume (veh/h)	179	620	90	120	430	120	100	71	0	0	57	347
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	195	674	84	130	467	117	109	77	0	0	62	95
Adj No. of Lanes	0	2	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	1130	140	181	568	132	280	383	0	133	134	205
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.21	0.21	0.00	0.00	0.21	0.21
Sat Flow, veh/h	416	1797	223	164	904	209	1213	1863	0	1317	651	997
Grp Volume(v), veh/h	333	0	620	714	0	0	109	77	0	0	0	157
Grp Sat Flow(s),veh/h/ln	788	0	1647	1277	0	0	1213	1863	0	1317	0	1648
Q Serve(g_s), s	0.0	0.0	12.2	14.9	0.0	0.0	4.7	1.9	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	15.8	0.0	12.2	27.1	0.0	0.0	9.3	1.9	0.0	0.0	0.0	4.5
Prop In Lane	0.58		0.14	0.18		0.16	1.00		0.00	1.00		0.61
Lane Grp Cap(c), veh/h	601	0	1036	881	0	0	280	383	0	133	0	339
V/C Ratio(X)	0.55	0.00	0.60	0.81	0.00	0.00	0.39	0.20	0.00	0.00	0.00	0.46
Avail Cap(c_a), veh/h	627	0	1076	915	0	0	377	531	0	238	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	0.0	6.0	8.7	0.0	0.0	23.0	17.9	0.0	0.0	0.0	19.0
Incr Delay (d2), s/veh	1.0	0.0	0.9	5.4	0.0	0.0	0.9	0.3	0.0	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	5.6	10.4	0.0	0.0	1.6	1.0	0.0	0.0	0.0	2.1
LnGrp Delay(d),s/veh	7.0	0.0	6.9	14.1	0.0	0.0	23.9	18.1	0.0	0.0	0.0	19.9
LnGrp LOS	A		A	B			C	B				B
Approach Vol, veh/h		953			714			186			157	
Approach Delay, s/veh		6.9			14.1			21.5			19.9	
Approach LOS		A			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		15.7		38.7		15.7		38.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5
Max Q Clear Time (g_c+I1), s		11.3		17.8		6.5		29.1
Green Ext Time (p_c), s		0.6		11.6		1.1		5.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	210	691	220	110	500	1418	814	120	1295	30
Future Volume (veh/h)	40	70	210	691	220	110	500	1418	814	120	1295	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	76	19	706	303	33	543	1541	742	130	1408	32
Adj No. of Lanes	1	1	1	2	1	1	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	165	137	847	445	372	538	2503	1123	98	1250	28
Arrive On Green	0.09	0.09	0.09	0.24	0.24	0.24	0.30	0.49	0.49	0.06	0.24	0.23
Sat Flow, veh/h	1774	1863	1540	3548	1863	1559	1774	5085	1514	1774	5114	116
Grp Volume(v), veh/h	43	76	19	706	303	33	543	1541	742	130	933	507
Grp Sat Flow(s),veh/h/ln	1774	1863	1540	1774	1863	1559	1774	1695	1514	1774	1695	1840
Q Serve(g_s), s	2.9	5.0	1.5	24.2	18.9	2.1	38.8	28.3	33.1	7.1	31.3	31.3
Cycle Q Clear(g_c), s	2.9	5.0	1.5	24.2	18.9	2.1	38.8	28.3	33.1	7.1	31.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	157	165	137	847	445	372	538	2503	1123	98	829	450
V/C Ratio(X)	0.27	0.46	0.14	0.83	0.68	0.09	1.01	0.62	0.66	1.32	1.13	1.13
Avail Cap(c_a), veh/h	396	416	344	1001	525	440	538	2503	1123	98	829	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	55.4	53.8	46.3	44.3	37.9	44.6	23.7	9.1	60.5	48.3	48.4
Incr Delay (d2), s/veh	0.3	0.7	0.2	4.6	1.9	0.0	41.3	1.1	3.1	199.1	72.0	81.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	0.6	12.4	10.0	0.9	25.1	13.4	26.9	8.9	22.9	26.1
LnGrp Delay(d),s/veh	54.8	56.2	54.0	50.9	46.2	37.9	86.0	24.8	12.2	259.6	120.3	130.0
LnGrp LOS	D	E	D	D	D	D	F	C	B	F	F	F
Approach Vol, veh/h		138			1042			2826			1570	
Approach Delay, s/veh		55.4			49.1			33.2			135.0	
Approach LOS		E			D			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	67.0		15.4	42.8	35.3		34.6
Change Period (Y+Rc), s	6.1	6.1		5.6	6.1	6.1		6.1
Max Green Setting (Gmax), s	5.0	38.1		27.0	13.9	29.2		34.0
Max Q Clear Time (g_c+I1), s	9.1	35.1		7.0	40.8	33.3		26.2
Green Ext Time (p_c), s	0.0	1.9		0.2	0.0	0.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	404	20	90	60	20	20	210	2062	186	20	1595	631
Future Volume (veh/h)	404	20	90	60	20	20	210	2062	186	20	1595	631
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	439	22	41	65	22	17	228	2241	197	22	1734	0
Adj No. of Lanes	0	1	1	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	413	18	507	41	13	2	137	2660	231	60	2619	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.31	0.08	0.56	0.54	0.03	0.51	0.00
Sat Flow, veh/h	1124	56	1569	0	39	8	1774	4763	413	1774	5253	0
Grp Volume(v), veh/h	461	0	41	104	0	0	228	1586	852	22	1734	0
Grp Sat Flow(s),veh/h/ln	1180	0	1569	47	0	0	1774	1695	1786	1774	1695	0
Q Serve(g_s), s	0.0	0.0	2.6	0.0	0.0	0.0	11.0	55.3	57.4	1.7	35.7	0.0
Cycle Q Clear(g_c), s	46.0	0.0	2.6	46.0	0.0	0.0	11.0	55.3	57.4	1.7	35.7	0.0
Prop In Lane	0.95		1.00	0.62		0.16	1.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	431	0	507	56	0	0	137	1893	997	60	2619	0
V/C Ratio(X)	1.07	0.00	0.08	1.85	0.00	0.00	1.66	0.84	0.85	0.37	0.66	0.00
Avail Cap(c_a), veh/h	431	0	507	56	0	0	137	1930	1017	137	2896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.8	0.0	33.4	59.0	0.0	0.0	65.6	26.1	26.8	67.2	25.4	0.0
Incr Delay (d2), s/veh	63.1	0.0	0.0	440.5	0.0	0.0	327.9	3.2	6.7	1.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.4	0.0	1.1	9.1	0.0	0.0	17.9	26.6	30.0	0.9	16.8	0.0
LnGrp Delay(d),s/veh	113.8	0.0	33.5	499.5	0.0	0.0	393.5	29.2	33.5	68.6	25.7	0.0
LnGrp LOS	F		C	F			F	C	C	E	C	
Approach Vol, veh/h		502			104			2666			1756	
Approach Delay, s/veh		107.3			499.5			61.8			26.3	
Approach LOS		F			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	83.4		50.0	15.0	77.3		50.0
Change Period (Y+Rc), s	6.5	6.5		6.0	6.5	6.5		6.0
Max Green Setting (Gmax), s	8.5	78.5		44.0	8.5	78.5		44.0
Max Q Clear Time (g_c+I1), s	3.7	59.4		48.0	13.0	37.7		48.0
Green Ext Time (p_c), s	0.0	17.2		0.0	0.0	33.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	786	179	30	30	437	130	30	250	40	50	170	780
Future Volume (veh/h)	786	179	30	30	437	130	30	250	40	50	170	780
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1810	1819	1900
Adj Flow Rate, veh/h	854	195	26	33	475	125	33	272	35	54	185	343
Adj No. of Lanes	2	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	5	2	2
Cap, veh/h	989	1533	202	52	633	165	52	827	105	85	470	410
Arrive On Green	0.29	0.49	0.48	0.03	0.23	0.22	0.03	0.26	0.26	0.05	0.27	0.28
Sat Flow, veh/h	3442	3145	414	1774	2758	720	1774	3159	402	1723	1728	1505
Grp Volume(v), veh/h	854	109	112	33	303	297	33	151	156	54	185	343
Grp Sat Flow(s),veh/h/ln	1721	1770	1790	1774	1770	1709	1774	1770	1792	1723	1728	1505
Q Serve(g_s), s	24.6	3.5	3.6	1.9	16.7	17.0	1.9	7.2	7.4	3.2	9.1	22.4
Cycle Q Clear(g_c), s	24.6	3.5	3.6	1.9	16.7	17.0	1.9	7.2	7.4	3.2	9.1	22.4
Prop In Lane	1.00		0.23	1.00		0.42	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	989	862	872	52	406	392	52	463	469	85	470	410
V/C Ratio(X)	0.86	0.13	0.13	0.63	0.75	0.76	0.63	0.33	0.33	0.63	0.39	0.84
Avail Cap(c_a), veh/h	1809	862	872	254	609	588	254	592	599	263	578	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	14.7	14.7	50.2	37.5	37.8	50.2	31.2	31.2	48.8	31.0	35.4
Incr Delay (d2), s/veh	2.4	0.1	0.1	11.9	2.8	3.1	11.9	0.4	0.4	7.6	0.5	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	1.7	1.8	1.1	8.5	8.3	1.1	3.6	3.7	1.7	4.4	10.4
LnGrp Delay(d),s/veh	37.7	14.7	14.8	62.1	40.3	40.9	62.1	31.6	31.6	56.4	31.6	45.3
LnGrp LOS	D	B	B	E	D	D	E	C	C	E	C	D
Approach Vol, veh/h		1075			633			340			582	
Approach Delay, s/veh		33.0			41.7			34.6			42.0	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	32.4	8.1	55.0	8.1	33.5	35.1	28.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	55.0	35.0
Max Q Clear Time (g_c+I1), s	5.2	9.4	3.9	5.6	3.9	24.4	26.6	19.0
Green Ext Time (p_c), s	0.1	5.3	0.0	5.4	0.0	3.7	3.5	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	290	120	485	40	1958	520	359	1280	30
Future Volume (veh/h)	0	0	30	290	120	485	40	1958	520	359	1280	30
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				216	251	326	42	2061	0	378	1347	31
Adj No. of Lanes				1	1	1	1	2	1	2	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				438	460	385	255	1912	813	447	2404	55
Arrive On Green				0.25	0.25	0.25	0.51	0.51	0.00	0.13	0.68	0.68
Sat Flow, veh/h				1774	1863	1562	392	3725	1583	3442	3536	81
Grp Volume(v), veh/h				216	251	326	42	2061	0	378	674	704
Grp Sat Flow(s),veh/h/ln				1774	1863	1562	392	1863	1583	1721	1770	1848
Q Serve(g_s), s				11.4	12.8	21.7	6.8	56.0	0.0	11.7	21.5	21.5
Cycle Q Clear(g_c), s				11.4	12.8	21.7	10.1	56.0	0.0	11.7	21.5	21.5
Prop In Lane				1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h				438	460	385	255	1912	813	447	1203	1257
V/C Ratio(X)				0.49	0.55	0.85	0.16	1.08	0.00	0.84	0.56	0.56
Avail Cap(c_a), veh/h				585	615	515	255	1912	813	505	1233	1287
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				35.2	35.8	39.1	16.3	26.6	0.0	46.4	9.0	9.0
Incr Delay (d2), s/veh				0.3	0.4	7.5	0.1	45.1	0.0	12.2	0.3	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.6	6.6	10.1	0.7	40.7	0.0	6.3	10.4	10.9
LnGrp Delay(d),s/veh				35.6	36.1	46.6	16.5	71.7	0.0	58.6	9.3	9.3
LnGrp LOS				D	D	D	B	F		E	A	A
Approach Vol, veh/h					793			2103			1756	
Approach Delay, s/veh					40.3			70.6			19.9	
Approach LOS					D			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	18.2	60.0				78.2		30.9
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	16.0	56.0				76.0		36.0
Max Q Clear Time (g_c+I1), s	13.7	58.0				23.5		23.7
Green Ext Time (p_c), s	0.5	0.0				37.0		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	640	330	350	800	320	300	371	730	280	259	579
Future Volume (veh/h)	551	640	330	350	800	320	300	371	730	280	259	579
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1810	1810	1810	1863	1863	1900	1810	1810	1900
Adj Flow Rate, veh/h	592	688	313	376	860	0	323	399	567	301	278	0
Adj No. of Lanes	2	2	0	2	2	1	1	2	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	5	5	5	2	2	2	5	5	5
Cap, veh/h	377	631	287	434	988	442	358	558	498	307	519	0
Arrive On Green	0.11	0.27	0.26	0.13	0.29	0.00	0.20	0.32	0.31	0.18	0.29	0.00
Sat Flow, veh/h	3442	2364	1075	3343	3438	1538	1774	1770	1580	1723	1810	0
Grp Volume(v), veh/h	592	515	486	376	860	0	323	399	567	301	278	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1670	1672	1719	1538	1774	1770	1580	1723	1810	0
Q Serve(g_s), s	16.0	39.0	39.0	16.1	34.7	0.0	25.9	29.1	46.0	25.4	18.9	0.0
Cycle Q Clear(g_c), s	16.0	39.0	39.0	16.1	34.7	0.0	25.9	29.1	46.0	25.4	18.9	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	377	473	446	434	988	442	358	558	498	307	519	0
V/C Ratio(X)	1.57	1.09	1.09	0.87	0.87	0.00	0.90	0.72	1.14	0.98	0.54	0.00
Avail Cap(c_a), veh/h	377	473	446	596	1084	485	377	558	498	307	519	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.0	53.5	53.7	62.2	49.4	0.0	56.8	44.2	50.4	59.7	43.9	0.0
Incr Delay (d2), s/veh	268.5	67.9	69.1	7.6	9.6	0.0	22.5	6.8	84.2	45.7	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	27.9	26.5	7.9	17.8	0.0	15.0	15.2	31.7	16.0	9.9	0.0
LnGrp Delay(d),s/veh	333.5	121.4	122.8	69.8	59.0	0.0	79.4	50.9	134.6	105.4	47.0	0.0
LnGrp LOS	F	F	F	E	E		E	D	F	F	D	
Approach Vol, veh/h		1593			1236			1289			579	
Approach Delay, s/veh		200.7			62.3			94.9			77.4	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	43.0	33.5	46.5	20.0	45.9	30.0	50.0
Change Period (Y+Rc), s	* 4.7	4.8	5.5	* 5.5	5.5	4.8	* 5.5	4.9
Max Green Setting (Gmax), s	* 25	35.2	29.5	* 40	14.5	45.2	* 25	45.1
Max Q Clear Time (g_c+I1), s	18.1	41.0	27.9	20.9	18.0	36.7	27.4	48.0
Green Ext Time (p_c), s	0.2	0.0	0.0	2.7	0.0	4.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	120.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1360	30	326	660	0	0	0	0	240	1254	350
Future Volume (veh/h)	0	1360	30	326	660	0	0	0	0	240	1254	350
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1863
Adj Flow Rate, veh/h	0	1432	0	343	695	0				253	1320	0
Adj No. of Lanes	0	3	0	1	2	0				1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1579	0	331	1878	0				714	1500	638
Arrive On Green	0.00	0.31	0.00	0.37	1.00	0.00				0.40	0.40	0.00
Sat Flow, veh/h	0	5421	0	1774	3632	0				1774	3725	1583
Grp Volume(v), veh/h	0	1432	0	343	695	0				253	1320	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	1774	1770	0				1774	1863	1583
Q Serve(g_s), s	0.0	32.4	0.0	22.4	0.0	0.0				11.9	39.3	0.0
Cycle Q Clear(g_c), s	0.0	32.4	0.0	22.4	0.0	0.0				11.9	39.3	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1579	0	331	1878	0				714	1500	638
V/C Ratio(X)	0.00	0.91	0.00	1.04	0.37	0.00				0.35	0.88	0.00
Avail Cap(c_a), veh/h	0	1579	0	331	1878	0				754	1583	673
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.48	0.48	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	39.7	0.0	37.6	0.0	0.0				25.0	33.1	0.0
Incr Delay (d2), s/veh	0.0	9.1	0.0	43.9	0.3	0.0				0.4	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.4	0.0	14.9	0.1	0.0				5.9	21.4	0.0
LnGrp Delay(d),s/veh	0.0	48.8	0.0	81.5	0.3	0.0				25.3	39.1	0.0
LnGrp LOS		D		F	A					C	D	
Approach Vol, veh/h		1432			1038						1573	
Approach Delay, s/veh		48.8			27.1						36.9	
Approach LOS		D			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	26.4	41.3		52.3		67.7		
Change Period (Y+Rc), s	* 4.2	4.9		* 4.2		4.9		
Max Green Setting (Gmax), s	* 22	33.7		* 51		60.1		
Max Q Clear Time (g_c+I1), s	24.4	34.4		41.3		2.0		
Green Ext Time (p_c), s	0.0	0.0		6.8		31.6		

Intersection Summary		
HCM 2010 Ctrl Delay		38.6
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	440	220	581	500	160	390	734	491	240	726	200
Future Volume (veh/h)	370	440	220	581	500	160	390	734	491	240	726	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1810	1810	1810	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	402	478	118	632	543	152	424	798	238	261	789	202
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	2	2	2
Cap, veh/h	471	678	303	702	705	197	500	1027	459	293	863	221
Arrive On Green	0.14	0.20	0.20	0.21	0.27	0.26	0.15	0.29	0.29	0.17	0.31	0.30
Sat Flow, veh/h	3343	3438	1538	3343	2647	738	3442	3539	1580	1774	2779	711
Grp Volume(v), veh/h	402	478	118	632	352	343	424	798	238	261	502	489
Grp Sat Flow(s),veh/h/ln	1672	1719	1538	1672	1719	1665	1721	1770	1580	1774	1770	1721
Q Serve(g_s), s	13.7	15.1	7.8	21.5	22.0	22.2	14.0	24.1	14.7	16.8	31.9	31.9
Cycle Q Clear(g_c), s	13.7	15.1	7.8	21.5	22.0	22.2	14.0	24.1	14.7	16.8	31.9	31.9
Prop In Lane	1.00		1.00	1.00		0.44	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	471	678	303	702	458	444	500	1027	459	293	549	534
V/C Ratio(X)	0.85	0.71	0.39	0.90	0.77	0.77	0.85	0.78	0.52	0.89	0.91	0.91
Avail Cap(c_a), veh/h	602	1061	475	889	604	585	915	1092	488	471	549	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	43.7	40.7	44.9	39.5	39.8	48.6	37.9	34.6	47.6	38.7	39.0
Incr Delay (d2), s/veh	8.7	0.5	0.3	9.0	2.9	3.2	1.6	3.4	0.9	7.7	20.0	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	7.2	3.3	10.8	10.8	10.6	6.8	12.2	6.5	8.9	18.7	18.2
LnGrp Delay(d),s/veh	57.7	44.2	41.0	53.9	42.4	43.0	50.2	41.3	35.5	55.3	58.7	59.4
LnGrp LOS	E	D	D	D	D	D	D	D	D	E	E	E
Approach Vol, veh/h		998			1327			1460			1252	
Approach Delay, s/veh		49.2			48.0			43.0			58.3	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	37.9	28.5	27.0	20.9	40.2	20.4	35.1
Change Period (Y+Rc), s	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3	* 4.2	5.3
Max Green Setting (Gmax), s	* 31	34.7	* 31	34.7	* 31	34.7	* 21	39.7
Max Q Clear Time (g_c+I1), s	18.8	26.1	23.5	17.1	16.0	33.9	15.7	24.2
Green Ext Time (p_c), s	0.3	6.5	0.8	4.3	0.7	0.7	0.5	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	49.3
HCM 2010 LOS	D

Notes

APPENDIX E: HIGHWAY CAPACITY SOFTWARE (HCS) REPORTS

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1894	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	504	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1033	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1033	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2188	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	582	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1193	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1193	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1882	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	501	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1026	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1026	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2208	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	587	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1204	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1204	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.5	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2406	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	640	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1312	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1312	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3120	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	830	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1701	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1701	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	2	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1824	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	485	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	994	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	994	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2456	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	653	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1339	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1339	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1659	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	441	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	603	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	603	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	9.3	pc/mi/ln
Level of service, LOS	A	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2453	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	652	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	892	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	892	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.7	pc/mi/ln
Level of service, LOS	B	

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E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1831	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	487	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	998	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3124	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	831	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1703	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1703	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	2	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1726	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	459	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	941	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	941	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.5	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	878	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1799	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1799	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1811	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	482	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	987	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	987	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.2	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Fehr & Peers
Agency or Company:
Date Performed: 10/27/2016
Analysis Time Period: PM Peak Period
Freeway/Direction: US 101 Northbound
From/To: E. Market St/N. Main Street
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3465	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	922	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1889	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1889	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.6	mi/h
Number of lanes, N	2	
Density, D	30.7	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1508	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	401	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	822	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	822	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	12.6	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2370	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	630	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1292	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1292	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1526	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	406	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	832	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	832	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2327	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	619	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1269	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1269	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1949	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	518	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1063	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1063	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2624	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	698	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1431	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1431	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2013	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	535	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1098	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1098	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2278	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	606	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1242	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1242	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2953	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	785	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1073	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1073	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.5	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3061	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	814	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1113	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1113	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2065	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	549	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1126	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1126	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Fehr & Peers
Agency or Company:
Date Performed: 10/27/2016
Analysis Time Period: PM Peak Period
Freeway/Direction: US 101 Southbound
From/To: SR 156/Sala Road
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2404	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	639	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1311	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1311	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	695	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	950	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	950	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2562	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	681	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	931	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	931	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.3	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2924	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	778	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1594	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1594	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2924	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	778	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1594	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1594	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2843	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	756	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1550	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1550	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	2	
Density, D	24.0	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2553	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	679	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1392	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1392	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2858	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	760	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1558	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1558	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	2	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2638	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	702	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1438	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1438	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Fehr & Peers
Agency or Company:
Date Performed: 10/27/2016
Analysis Time Period: AM Peak Period
Freeway/Direction: US 101 Southbound
From/To: John Street/S. Sanborn Road
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1934	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	514	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1054	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1054	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.2	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2039	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	542	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1112	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1112	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone:	Fax:	
E-mail:		

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1668	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	444	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	909	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	909	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.0	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1777	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	473	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	969	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	969	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2114	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	562	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1153	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1153	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2358	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	627	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1286	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1286	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP
Description:	Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2102	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	559	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1146	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1146	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2378	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	632	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1297	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1297	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2626	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	698	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1432	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1432	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP
Description:	Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3290	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	875	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1794	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1794	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.8	mi/h
Number of lanes, N	2	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2044	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	544	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1114	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1114	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2626	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	698	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1432	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1432	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1809	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	481	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	658	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	658	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	10.1	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	695	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	950	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	950	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1981	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	527	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1080	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1080	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3284	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	873	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1790	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1790	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.8	mi/h
Number of lanes, N	2	
Density, D	28.5	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1876	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	499	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1023	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1023	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3460	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	920	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1886	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1886	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.7	mi/h
Number of lanes, N	2	
Density, D	30.6	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP
Description:	Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1841	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	490	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1004	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1004	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3505	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	932	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1911	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1911	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.3	mi/h
Number of lanes, N	2	
Density, D	31.2	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1538	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	409	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	839	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	839	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	12.9	pc/mi/ln
Level of service, LOS	B	

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E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP
Description:	Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2410	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	641	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1314	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1314	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1556	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	414	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	848	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	848	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.0	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2367	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	630	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1291	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1291	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2119	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	564	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1155	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1155	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

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E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2854	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	759	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1556	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1556	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	2	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2183	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	581	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1190	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1190	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2508	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	667	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1367	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1367	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3123	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	831	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1135	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1135	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.5	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3291	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	875	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1196	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2235	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	594	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1219	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1219	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2634	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	701	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1436	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1436	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2633	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	700	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	957	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	957	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2582	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	687	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	938	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	938	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.4	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2944	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	783	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1605	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1605	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	24.9	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2716	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	722	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1481	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1481	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	22.8	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2983	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	793	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1626	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1626	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2683	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	714	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1463	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1463	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2898	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	771	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1580	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1580	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2668	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	710	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1455	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1455	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.4	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1974	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	525	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1076	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1076	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2069	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	550	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1128	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1128	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1708	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	454	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	931	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	931	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.3	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/25/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus CASP

Description: Salinas Central Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1807	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	481	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	985	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	985	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.2	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2334	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	621	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1273	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1273	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst: Fehr & Peers
Agency or Company:
Date Performed: 10/27/2016
Analysis Time Period: PM Peak Period
Freeway/Direction: US 101 Northbound
From/To: Crazy Horse Canyon/San Juan Rd
Jurisdiction: Caltrans
Analysis Year: Existing Plus WASP + CASP
Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2558	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	680	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1395	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1395	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2322	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	618	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1266	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1266	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2578	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	686	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1406	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1406	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.6	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2846	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	757	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1552	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1552	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	2	
Density, D	24.0	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3490	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	928	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1903	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1903	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.4	mi/h
Number of lanes, N	2	
Density, D	31.0	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2264	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	602	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1234	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1234	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2826	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	752	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1541	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1541	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	2	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2101	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	559	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	764	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	764	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	11.8	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3404	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	905	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1237	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1237	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2141	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	569	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1167	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1167	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.0-	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	916	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1878	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1878	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.8	mi/h
Number of lanes, N	2	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2036	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	541	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1110	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1110	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3620	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	963	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1974	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1974	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	2	
Density, D	32.7	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1881	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	500	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1026	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1026	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

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Phone:	Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3545	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	943	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1933	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1933	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1578	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	420	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	860	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	860	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.2	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2450	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	652	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1336	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1336	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1596	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	424	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	870	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	870	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.4	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2407	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	640	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1312	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1312	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2319	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	617	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1264	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1264	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3094	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	823	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1687	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1687	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.8	mi/h
Number of lanes, N	2	
Density, D	26.4	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2383	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	634	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1299	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1299	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.0	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2748	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	731	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1498	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1498	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	884	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1208	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1208	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.6	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst: Fehr & Peers
Agency or Company:
Date Performed: 10/27/2016
Analysis Time Period: PM Peak Period
Freeway/Direction: US 101 Southbound
From/To: San Miguel Canyon/SR 156
Jurisdiction: Caltrans
Analysis Year: Existing Plus WASP + CASP
Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3531	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	939	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1283	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1283	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.7	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2435	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	648	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1328	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1328	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2874	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	764	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1567	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1567	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	2	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2713	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	722	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	986	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	986	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.2	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2602	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	692	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	946	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	946	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3024	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	804	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1649	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1649	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	2	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2796	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	744	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1524	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1524	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	2	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	3123	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	831	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1703	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1703	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	2	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2823	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	751	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1539	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1539	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	2	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2938	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	781	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1602	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1602	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	24.9	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2708	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	720	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1476	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1476	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2014	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	536	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1098	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1098	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	2109	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	561	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1150	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1150	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP

Description: Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1748	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	465	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	953	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	953	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Existing Plus WASP + CASP
Description:	Salinas West Area Specific Plan

Flow Inputs and Adjustments

Volume, V	1847	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	491	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1007	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1007	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3530	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	939	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1925	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1925	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	2	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2920	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	777	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1592	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1592	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3880	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1032	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2115	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2115	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	57.8	mi/h
Number of lanes, N	2	
Density, D	36.6	pc/mi/ln
Level of service, LOS	E	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3090	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	822	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1685	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1685	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.8	mi/h
Number of lanes, N	2	
Density, D	26.4	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3020	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	803	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1098	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1098	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3190	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	848	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1159	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1159	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3080	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	819	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1120	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1120	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2460	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	654	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	894	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	894	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2010	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	535	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	731	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	731	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	1720	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	457	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	625	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	625	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	9.6	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3470	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	923	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1892	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1892	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.6	mi/h
Number of lanes, N	2	
Density, D	30.7	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3110	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	827	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1696	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1696	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.8	mi/h
Number of lanes, N	2	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4230	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1125	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2306	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2306	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	53.4	mi/h
Number of lanes, N	2	
Density, D	43.2	pc/mi/ln
Level of service, LOS	E	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3280	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	872	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1788	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1788	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	899	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1229	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1229	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3830	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1019	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1392	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1392	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3990	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1061	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1450	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1450	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3900	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1037	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1418	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1418	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2650	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	705	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	963	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	963	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3180	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	846	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1156	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1156	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3060	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	814	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1668	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1668	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	699	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1434	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1434	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3580	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	952	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1952	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1952	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.7	mi/h
Number of lanes, N	2	
Density, D	32.2	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3230	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	859	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1761	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1761	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3290	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	875	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1196	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3650	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	971	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1327	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1327	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3640	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	968	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1323	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1323	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3220	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	856	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1170	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1170	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.0	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2300	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	612	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	836	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	836	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	12.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2540	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	676	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	923	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	923	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.2	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4170	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1109	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2274	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2274	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	54.2	mi/h
Number of lanes, N	2	
Density, D	42.0	pc/mi/ln
Level of service, LOS	E	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3310	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	880	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1805	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1805	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	2	
Density, D	28.8	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4770	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1269	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2601	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2601	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	44.5	mi/h
Number of lanes, N	2	
Density, D	58.4	pc/mi/ln
Level of service, LOS	F	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4290	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1141	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2339	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2339	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	52.5	mi/h
Number of lanes, N	2	
Density, D	44.6	pc/mi/ln
Level of service, LOS	E	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4230	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1125	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1537	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1537	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	3	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4310	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1146	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1567	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1567	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	3	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4080	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1085	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1483	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1483	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	3	
Density, D	22.8	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3660	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	973	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1330	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1330	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2970	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	790	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1080	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1080	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2310	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	614	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	840	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	840	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	12.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3750	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	997	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2045	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2045	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.1	mi/h
Number of lanes, N	2	
Density, D	34.6	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3640	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	968	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1985	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1985	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.1	mi/h
Number of lanes, N	2	
Density, D	33.0	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3140	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	835	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1712	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1712	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	2	
Density, D	26.9	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3280	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	872	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1788	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1788	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4100	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1090	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2235	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2235	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.1	mi/h
Number of lanes, N	2	
Density, D	40.6	pc/mi/ln
Level of service, LOS	E	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4400	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1170	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2399	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2399	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	50.8	mi/h
Number of lanes, N	2	
Density, D	47.2	pc/mi/ln
Level of service, LOS	F	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3290	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	875	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1794	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1794	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.8	mi/h
Number of lanes, N	2	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3450	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	918	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1881	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1881	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.7	mi/h
Number of lanes, N	2	
Density, D	30.5	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	824	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1127	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1127	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3430	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	912	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1247	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.2	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3270	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	870	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1189	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1189	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3970	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1056	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1443	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1443	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.2	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3110	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	827	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1130	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1130	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4150	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1104	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1508	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1508	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2490	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	662	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	905	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	905	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3940	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1048	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1432	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1432	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2040	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	543	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	741	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	741	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	11.4	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2690	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	715	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	978	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	978	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.0	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/17/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	1750	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	465	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	636	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	636	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	9.8	pc/mi/ln
Level of service, LOS	A	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3220	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	856	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1170	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1170	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.0	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3230	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	859	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1761	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1761	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4400	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1170	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2399	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2399	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	50.8	mi/h
Number of lanes, N	2	
Density, D	47.2	pc/mi/ln
Level of service, LOS	F	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	745	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1527	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1527	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	2	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3540	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	941	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1930	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1930	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	31.6	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3750	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	997	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2045	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2045	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.1	mi/h
Number of lanes, N	2	
Density, D	34.6	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	5000	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1330	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2726	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2726	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	40.1	mi/h
Number of lanes, N	2	
Density, D	68.0	pc/mi/ln
Level of service, LOS	F	

Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	904	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1854	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1854	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	2	
Density, D	29.9	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/1028
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4520	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1202	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2464	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2464	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	48.9	mi/h
Number of lanes, N	2	
Density, D	50.3	pc/mi/ln
Level of service, LOS	F	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	899	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1229	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1229	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4350	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1157	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1581	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1581	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3810	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1013	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1385	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1385	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4460	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1186	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1621	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1621	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3680	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	979	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1338	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1338	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4180	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1112	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1519	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1519	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3260	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	867	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1185	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1185	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.2	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3690	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	981	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1341	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1341	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2340	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	622	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	851	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	851	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	798	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1090	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1090	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.8	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2580	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	686	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	938	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	938	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.4	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	09/18/2018
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus CASP

Description: Salinas Central Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2340	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	622	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	851	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	851	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3970	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1056	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2164	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2164	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.7	mi/h
Number of lanes, N	2	
Density, D	38.2	pc/mi/ln
Level of service, LOS	E	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3360	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	894	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1832	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1832	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	29.4	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4320	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1149	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2355	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2355	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	52.1	mi/h
Number of lanes, N	2	
Density, D	45.2	pc/mi/ln
Level of service, LOS	F	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3410	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	907	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1859	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1859	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.0	mi/h
Number of lanes, N	2	
Density, D	30.0	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3160	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1149	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1149	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3420	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	910	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1243	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1243	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3150	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	838	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1145	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1145	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone:	Fax:
E-mail:	

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2530	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	673	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	920	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	920	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.2	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2080	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	553	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	756	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	756	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	11.6	pc/mi/ln
Level of service, LOS	B	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	1790	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	476	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	651	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	651	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	10.0	pc/mi/ln
Level of service, LOS	A	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Crazy Horse Canyon/San Juan Rd
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3840	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1021	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2094	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2094	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	58.2	mi/h
Number of lanes, N	2	
Density, D	36.0	pc/mi/ln
Level of service, LOS	E	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	San Miguel/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3480	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	926	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1897	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1897	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	SR 156/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4600	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1223	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2508	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2508	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	47.6	mi/h
Number of lanes, N	2	
Density, D	52.7	pc/mi/ln
Level of service, LOS	F	

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E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Sala Road/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3650	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	971	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1990	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1990	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.1	mi/h
Number of lanes, N	2	
Density, D	33.1	pc/mi/ln
Level of service, LOS	D	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Boronda Road/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3280	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	872	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1192	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1192	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	Laurel Drive/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4050	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1077	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1472	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1472	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	3	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	N. Main Street/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4190	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1114	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1523	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1523	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	E. Market St/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3980	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1059	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1447	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1447	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Northbound
From/To:	S. Sanborn Road/John Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2730	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	726	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	992	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	992	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.90

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Abbott Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3260	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	867	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1185	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1185	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.2	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3430	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	912	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1870	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1870	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	798	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1636	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1636	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	25.5	pc/mi/ln
Level of service, LOS	C	

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Phone: Fax:
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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3950	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1051	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1436	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1436	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3600	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	957	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1963	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1963	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.5	mi/h
Number of lanes, N	2	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Sala Road/Boronda Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3490	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	928	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1269	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1269	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4040	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1074	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1468	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1468	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	3	
Density, D	22.6	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3930	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1045	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1428	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1428	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	878	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1199	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1199	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	633	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	865	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	865	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.3	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	AM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2620	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	697	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	952	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	952	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Juan Rd/Crazy Horse Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4640	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1234	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2530	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2530	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	46.9	mi/h
Number of lanes, N	2	
Density, D	54.0	pc/mi/ln
Level of service, LOS	F	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Crazy Horse/San Miguel Canyon
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3780	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1005	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2061	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2061	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	2	
Density, D	35.0+	pc/mi/ln
Level of service, LOS	E	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	San Miguel Canyon/SR 156
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	5240	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1394	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2857	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2857	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	34.9	mi/h
Number of lanes, N	2	
Density, D	81.9	pc/mi/ln
Level of service, LOS	F	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	SR 156/Sala Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4760	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1266	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2595	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2595	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	44.8	mi/h
Number of lanes, N	2	
Density, D	58.0	pc/mi/ln
Level of service, LOS	F	

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_________________________Operational Analysis__________________________________

Analyst:                 Fehr & Peers
Agency or Company:
Date Performed:          10/27/2016
Analysis Time Period:    PM Peak Period
Freeway/Direction:       US 101 Southbound
From/To:                 Sala Road/Boronda Road
Jurisdiction:            Caltrans
Analysis Year:           Cumulative plus WASP+CASP
Description:  Salinas West Area Specific Plan (No Expressways)

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4470          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1189          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Grade
    Grade                                   0.00          %
    Segment length                          0.00          mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1625          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          3
Free-flow speed:                            Measured
     FFS or BFFS                            65.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        65.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1625          pc/h/ln
Free-flow speed, FFS                        65.0          mi/h
Average passenger-car speed, S              64.3          mi/h
Number of lanes, N                          3
Density, D                                  25.3          pc/mi/ln
Level of service, LOS                       C
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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Boronda Road/Laurel Drive
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4660	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1239	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1694	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1694	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.8	mi/h
Number of lanes, N	3	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	Laurel Drive/N. Main Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	4390	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1168	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1596	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1596	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	24.8	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	N. Main Street/E. Market St
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3730	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	992	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1356	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1356	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.9	pc/mi/ln
Level of service, LOS	C	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	John Street/S. Sanborn Road
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	3040	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	809	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1105	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1105	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Fehr & Peers
Agency or Company:	
Date Performed:	10/27/2016
Analysis Time Period:	PM Peak Period
Freeway/Direction:	US 101 Southbound
From/To:	S. Sanborn Road/Abbott Street
Jurisdiction:	Caltrans
Analysis Year:	Cumulative plus WASP+CASP

Description: Salinas West Area Specific Plan (No Expressways)

Flow Inputs and Adjustments

Volume, V	2380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	633	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	865	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	865	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	13.3	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1291	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1291	42		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	359	12		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          1470        48                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1470   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum         LOS F?
     v                     1518          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 1470                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                1518          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   12.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  B

______________________________Speed Estimation________________________________

Intermediate speed variable,                 M  = 0.279
                                              S
Space mean speed in ramp influence area,     S  = 58.6    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.6    mph
______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2026	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	153	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2026	153		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	563	43		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2307        174                   pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2307   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2481          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2307                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2481          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   19.4    pc/mi/ln
          R                   R           12              A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.308
                                              S
Space mean speed in ramp influence area,     S  = 57.9    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1831	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	540	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1831		540			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	509		150			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2085	615	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2085 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2085	4700	No
$v_{FO} = v_F - v_R$	1470	4700	No
v_R	615	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 2085 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2085	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 20.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.353	
Space mean speed in ramp influence area,	S_R = 56.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3124	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1098	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3124		1098			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	868		305			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3558        1251                  pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3558   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                3558          4700            No
      Fi   F
     v  = v - v            2307          4700            No
      FO   F   R
     v                     1251          2100            No
      R
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3558                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3558          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   33.5    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.411
                                              S
Space mean speed in ramp influence area,     S  = 55.6    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 55.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1337	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	280	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1337	280		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	371	78		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           1523        319                   pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =             (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1523   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     1842          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 1523                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                1842          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   15.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.293
                                              S
Space mean speed in ramp influence area,     S  = 58.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.3    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2466	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	439	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2466	439		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	685	122		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2809        500                      pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2809   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3309          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2809                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3309          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   26.4    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.375
                                              S
Space mean speed in ramp influence area,     S  = 56.4    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.4    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3175	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	709	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3175		709			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	882		197			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3616        807                     pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L   =             (Equation 13-12 or 13-13)
                   EQ
                  P   =    1.000   Using Equation  0
                   FD
                  v   = v  + (v - v ) P  =  3616   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                          Actual        Maximum         LOS F?
     v  = v               3616          4700            No
      Fi   F
     v  = v - v           2809          4700            No
      FO   F   R
     v                    807           2100            No
      R
     v  or v              0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?          No
      3     av34
Is   v  or v      > 1.5 v  /2           No
      3     av34         12
If yes, v    = 3616                  (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3616          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   34.0    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                D  = 0.371
                                             S
Space mean speed in ramp influence area,    S  = 56.5    mph
                                             R
Space mean speed in outer lanes,            S  =  N/A    mph
                                             0
Space mean speed for all vehicles,          S  = 56.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1617	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1617	214		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	449	59		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           1842        244                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1842   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2086          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 1842                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2086          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   18.5    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.307
                                              S
Space mean speed in ramp influence area,     S  = 57.9    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2905	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	219	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2905		219			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	807		61			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3308        249                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =             (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  3308   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3557          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3308                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3557          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   30.0    pc/mi/ln
          R                  R           12            A
Level of service for ramp-freeway junction areas of influence  D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.413
                                              S
Space mean speed in ramp influence area,     S  = 55.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 55.5    mph
_______________________________________________________________________________
```

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2228        174                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =             (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2228   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2402          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34        12
If yes, v    = 2228                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2402          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   18.8    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.305
                                              S
Space mean speed in ramp influence area,     S  = 58.0    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2175	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	667	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2175		667			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	604		185			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Grade			
Grade		%	0.00	%		%
Length		mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP          1.00        1.00
Flow rate, vp                          2477        760                  pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2477   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3237          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2477                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3237          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   25.4    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.364
                                              S
Space mean speed in ramp influence area,     S  = 56.6    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1921	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	667	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1921	667		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	534	185		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2188        760                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2188   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2948          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2188                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2948          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   23.1    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.339
                                              S
Space mean speed in ramp influence area,     S  = 57.2    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.2    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2842	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	82	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2842		82			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	789		23			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3237        93                         pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  3237   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3330          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3237                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3330          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   26.4    pc/mi/ln
          R                    R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.358
                                              S
Space mean speed in ramp influence area,     S  = 56.8    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.8    mph
_______________________________________________________________________________
```

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2505	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	191	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2505	191		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	696	53		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2853        218                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2853   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3071          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34        12
If yes, v    = 2853                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3071          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   24.3    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.333
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.3    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2924	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	551	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2924		551			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	812		153			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3330        628                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L   =            (Equation 13-12 or 13-13)
                   EQ
                  P   =    1.000   Using Equation  0
                   FD
                  v   = v  + (v - v ) P  =  3330   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                3330          4700            No
      Fi   F
     v  = v - v            2702          4700            No
      FO   F   R
     v                     628           2100            No
      R
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3330                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3330          4400                  No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   31.1    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.355
                                              S
Space mean speed in ramp influence area,     S  = 56.8    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.8    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2696	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	695	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2696		695			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	749		193			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3070        792                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L   =            (Equation 13-12 or 13-13)
                   EQ
                  P   =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3070   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3070          4700            No
      Fi   F
     v  = v - v              2278          4700            No
      FO   F   R
     v                       792           2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3070                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                        Actual        Max Desirable        Violation?
     v                  3070          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,                 D = 4.252 + 0.0086 v  - 0.009  L   =   28.9    pc/mi/ln
                          R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.369
                                              S
Space mean speed in ramp influence area,     S  = 56.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2373	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	515	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2373	515		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	659	143		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2703        587                   pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2703   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum         LOS F?
     v                     3290          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2703                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3290          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   24.6    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation_________________________________

Intermediate speed variable,                 M  = 0.336
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.3    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2001	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	480	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2001		480			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	556		133			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976        0.976
Driver population factor, fP            1.00         1.00
Flow rate, vp                           2279         547                        pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2279   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2826          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2279                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2826          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.297
                                              S
Space mean speed in ramp influence area,     S  = 58.2    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.2    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1847	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	360	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1847		360			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	513		100			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2104	410	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.689 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1576 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2104	7050	No
$v_{FO} = v_F - v_R$	1694	7050	No
v_R	410	2100	No
v_3 or v_{av34}	528 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1576 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1576	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.335	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = 71.3	mph
Space mean speed for all vehicles,	S = 60.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1487	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	280	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp	0	vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1487		280		0	vph
Peak-hour factor, PHF	0.90		0.90		0.94	
Peak 15-min volume, v15	413		78		0	v
Trucks and buses	5		5		0	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

```
Heavy vehicle adjustment, fHV          0.976       0.976       1.000
Driver population factor, fP           1.00        1.00        1.00
Flow rate, vp                          1694        319         0         pcph

____________________________Estimation of V12 Merge Areas____________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1694   pc/h
                   12   F   FM

___________________________________Capacity Checks___________________________________

                           Actual        Maximum         LOS F?
     v                     2013          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34          12
If yes, v    = 1694                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

___________________________Flow Entering Merge Influence Area________________________
                      Actual        Max Desirable         Violation?
     v                2013          4600                  No
      R12
___________________Level of Service Determination (if not F)________________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   16.3    pc/mi/ln
          R                   R          12             A
Level of service for ramp-freeway junction areas of influence  B

_________________________________Speed Estimation____________________________________

Intermediate speed variable,                 M  = 0.298
                                              S
Space mean speed in ramp influence area,     S  = 58.2    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.2    mph
_____________________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1767	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1767	214		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	491	59		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2012        244                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2012   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2256          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2012                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2256          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   19.8    pc/mi/ln
          R                   R         12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.313
                                              S
Space mean speed in ramp influence area,     S  = 57.8    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.8    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1981	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1981		550			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	550		153			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2256	626	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2256 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2256	4700	No
$v_{FO} = v_F - v_R$	1630	4700	No
v_R	626	2100	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2256 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2256	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 22.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.354

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1431	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1431	42		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	398	12		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1630	48	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1630 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1678	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 1630 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1678	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.282	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3335	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	709	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3335		709			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	926		197			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3798	807	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3798 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3798	4700	No
$v_{FO} = v_F - v_R$	2991	4700	No
v_R	807	2100	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3798 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3798	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 35.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.371

Space mean speed in ramp influence area, S_R = 56.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2626	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	439	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2626	439		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	729	122		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2991	500	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2991 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3491	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2991 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3491	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 27.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 55.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/26/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+CASP
Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3065	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	219	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3065		219			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	851		61			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3491	249	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3491 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3740	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3491 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3740	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 31.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3284	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1112	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3284		1112			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	912		309			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3740        1266                   pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3740   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                            Actual        Maximum         LOS F?
     v  = v                 3740          4700            No
      Fi   F
     v  = v - v             2474          4700            No
      FO   F   R
     v                      1266          2100            No
      R
     v  or v                0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?            No
      3     av34
Is   v  or v      > 1.5 v  /2             No
      3     av34         12
If yes, v    = 3740                    (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                       Actual        Max Desirable        Violation?
     v                 3740          4400                 No
      12
_________________Level of Service Determination (if not F)____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   35.1    pc/mi/ln
                        R                   12          D
Level of service for ramp-freeway junction areas of influence E

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.412
                                              S
Space mean speed in ramp influence area,     S  = 55.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 55.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2172	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	153	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2172	153		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	603	43		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2474	174	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2474 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2648	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2474 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2648	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2182	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	680	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2182		680			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	606		189			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Grade			
Grade		%	0.00	%		%
Length		mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2485	774	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2485 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3259	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2485 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3259	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 25.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.366

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2862	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	82	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2862		82			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	795		23			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3260        93                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  3260   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3353          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3260                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3353          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   26.6    pc/mi/ln
          R                   R          12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.360
                                              S
Space mean speed in ramp influence area,     S  = 56.7    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.7    mph
_______________________________________________________________________________
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HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/26/2018
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+CASP
Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2944	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	551	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2944		551			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	818		153			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3353        628                       pcph

_________________________Estimation of V12 Diverge Areas________________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3353   pc/h
                   12   R     F   R   FD

________________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3353          4700            No
      Fi   F
     v  = v - v              2725          4700            No
      FO   F   R
     v                       628           2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3353                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                        Actual        Max Desirable         Violation?
     v                  3353          4400                  No
      12
_________________Level of Service Determination (if not F)_____________________

Density,                 D = 4.252 + 0.0086 v  - 0.009  L   =   31.3    pc/mi/ln
                          R                 12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                D  = 0.355
                                             S
Space mean speed in ramp influence area,    S  = 56.8    mph
                                             R
Space mean speed in outer lanes,            S  =  N/A    mph
                                             0
Space mean speed for all vehicles,          S  = 56.8    mph
________________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2393	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	515	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2393	515		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	665	143		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2725	587	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2725 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3312	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2725 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3312	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.338	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+CASP
Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1931	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	594	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1931	594		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	536	165		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2199        677                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2199   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2876          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2199                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2876          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   22.6    pc/mi/ln
          R                   R         12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.334
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.3    mph
_______________________________________________________________________________
```

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/26/2018
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+CASP

Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2525	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	191	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2525		191			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	701		53			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%	%	
Length		mi		mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2876	218	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2876 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3094	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2876 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3094	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.335

Space mean speed in ramp influence area, S_R = 57.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/26/2018
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+CASP
Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2716	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	695	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2716		695			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	754		193			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3093	792	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3093 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3093	4700	No
$v_{FO} = v_F - v_R$	2301	4700	No
v_R	792	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	
If yes, v_{12A} = 3093		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3093	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.369	
Space mean speed in ramp influence area,	S_R = 56.5	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 56.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/26/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+CASP
Description: Salinas Central Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2021	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	480	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2021	480		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	561	133		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2302	547	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2302 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2849	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2302 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2849	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.298	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1993	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	360	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1993		360			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	554		100			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2270	410	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.684 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1683 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2270	7050	No
$v_{FO} = v_F - v_R$	1860	7050	No
v_R	410	2100	No
v_3 or v_{av34}	587 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 1683 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1683	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.335	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = 71.3	mph
Space mean speed for all vehicles,	S = 60.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1633	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	294	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1633	294		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	454	82		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          1860        335                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1860   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2195          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 1860                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2195          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   17.7    pc/mi/ln
          R                   R           12              A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.304
                                              S
Space mean speed in ramp influence area,     S  = 58.0    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.0    mph
_______________________________________________________________________________
```

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1927	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1927	259		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	535	72		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2195        295                      pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2195   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2490          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2195                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area______________________
                      Actual        Max Desirable          Violation?
     v                2490          4600                   No
      R12
_________________Level of Service Determination (if not F)______________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.6    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.323
                                              S
Space mean speed in ramp influence area,     S  = 57.6    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.6    mph
________________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2141	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	737	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2141		737			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	595		205			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2438        839                   pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  2438   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                2438          4700            No
      Fi   F
     v  = v - v            1599          4700            No
      FO   F   R
     v                     839           2100            No
      R
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2438                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2438          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   23.9    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.374
                                              S
Space mean speed in ramp influence area,     S  = 56.4    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.4    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1404	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1404	42		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	390	12		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          1599        48                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =            (Equation 13-6 or 13-7)
                   EQ
                  P   =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  1599   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     1647          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 1599                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                1647          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   13.0    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.282
                                              S
Space mean speed in ramp influence area,     S  = 58.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3478	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	709	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3478		709			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	966		197			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3961        807                     pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3961   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3961          4700            No
      Fi   F
     v  = v - v              3154          4700            No
      FO   F   R
     v                       807           2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3961                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                        Actual        Max Desirable        Violation?
     v                  3961          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,                 D = 4.252 + 0.0086 v  - 0.009  L   =   37.0    pc/mi/ln
                          R                  12          D
Level of service for ramp-freeway junction areas of influence E

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.371
                                              S
Space mean speed in ramp influence area,     S  = 56.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2769	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	456	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2769	456		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	769	127		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3154	519	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3154 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3673	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3154 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3673	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.422	
Space mean speed in ramp influence area,	S_R = 55.3	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 55.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3225	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	253	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3225	253		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	896	70		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3673        288                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  3673   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum          LOS F?
     v                     3961          4700             No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3673                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3961          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   33.1    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.481
                                              S
Space mean speed in ramp influence area,     S  = 53.9    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 53.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3444	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1342	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3444		1342			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	957		373			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV            0.976       0.976
Driver population factor, fP             1.00        1.00
Flow rate, vp                            3922        1528                  pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =             (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3922   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3922          4700            No
      Fi   F
     v  = v - v              2394          4700            No
      FO   F   R
     v                       1528          2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3922                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area______________________
                      Actual        Max Desirable        Violation?
     v                3922          4400                 No
      12
_________________Level of Service Determination (if not F)______________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   36.6    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence E

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.436
                                              S
Space mean speed in ramp influence area,     S  = 55.0    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 55.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2102	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	153	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2102	153		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	584	43		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2394        174                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2394   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2568          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2394                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual       Max Desirable        Violation?
     v                2568         4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   20.1    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.312
                                              S
Space mean speed in ramp influence area,     S  = 57.8    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.8    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2052	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	890	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2052		890			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	570		247			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Grade			
Grade		%	0.00	%		%
Length		mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2337        1014                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =             (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2337   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3351          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2337                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3351          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   26.1    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.376
                                              S
Space mean speed in ramp influence area,     S  = 56.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.3    mph
_______________________________________________________________________________
```

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2942	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	82	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2942	82		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	817	23		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3351        93                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  3351   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3444          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3351                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3444          4600                  No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   27.3    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.371
                                              S
Space mean speed in ramp influence area,     S  = 56.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3024	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	567	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3024		567			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	840		158			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3444        646                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3444   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                3444          4700            No
      Fi   F
     v  = v - v            2798          4700            No
      FO   F   R
     v                     646           2100            No
      R
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3444                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3444          4400                  No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   32.1    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.356
                                              S
Space mean speed in ramp influence area,     S  = 56.8    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.8    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	515	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2457		515			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	683		143			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2798        587                   pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2798   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3385          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34        12
If yes, v    = 2798                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3385          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   25.3    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

______________________________Speed Estimation_________________________________

Intermediate speed variable,                 M  = 0.346
                                              S
Space mean speed in ramp influence area,     S  = 57.0    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1819	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	786	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1819	786		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	505	218		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2072        895                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =            (Equation 13-6 or 13-7)
                   EQ
                  P   =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2072   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2967          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34        12
If yes, v    = 2072                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2967          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   23.2    pc/mi/ln
         R                    R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.341
                                              S
Space mean speed in ramp influence area,     S  = 57.2    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.2    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2605	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	191	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2605	191		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	724	53		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2967        218                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2967   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3185          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2967                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3185          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   25.2    pc/mi/ln
         R                    R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.343
                                              S
Space mean speed in ramp influence area,     S  = 57.1    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.1    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Existing+WASP+CASP

Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2796	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	709	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2796		709			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	777		197			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3184        807                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3184   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3184          4700            No
      Fi   F
     v  = v - v              2377          4700            No
      FO   F   R
     v                       807           2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3184                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3184          4400                  No
      12
_________________Level of Service Determination (if not F)____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   29.8    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.371
                                              S
Space mean speed in ramp influence area,     S  = 56.5    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 56.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Existing+WASP+CASP
Description: Salinas West Area Specific Plan

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2087	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	480	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2087		480			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	580		133			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2377        547                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =            (Equation 13-6 or 13-7)
                   EQ
                  P   =    1.000   Using Equation  0
                   FM
                  v  = v  (P  ) =  2377   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2924          4700            No
      FO
     v  or v               0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2377                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2924          4600                 No
      R12
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.8    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.304
                                              S
Space mean speed in ramp influence area,     S  = 58.0    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 58.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:

E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2960	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	370	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2960		370			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	822		103			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3371        421                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    1.000   Using Equation  0
                   FD
                  v  = v  + (v - v ) P  =  3371   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  3371          4700            No
      Fi   F
     v  = v - v              2950          4700            No
      FO   F   R
     v                       421           2100            No
      R
     v  or v                 0    pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3371                  (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area______________________
                      Actual        Max Desirable        Violation?
     v                3371          4400                 No
      12
_________________Level of Service Determination (if not F)______________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   31.9    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation___________________________________

Intermediate speed variable,                 D  = 0.336
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  =  N/A    mph
                                              0
Space mean speed for all vehicles,           S  = 57.3    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2590	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	340	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2590	340		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	719	94		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV            0.976       0.976
Driver population factor, fP             1.00        1.00
Flow rate, vp                            2950        387                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.599   Using Equation  3
                   FM
                  v  = v  (P  ) =  1766   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3337          7050            No
      FO
     v  or v               1184 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1766                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2153          4600                  No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   17.4    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.302
                                              S
Space mean speed in ramp influence area,     S  = 58.1    mph
                                              R
Space mean speed in outer lanes,             S  = 62.5    mph
                                              0
Space mean speed for all vehicles,           S  = 59.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3190	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	260	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3190		260			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	886		72			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3633        296                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.591   Using Equation  3
                   FM
                  v  = v  (P  ) =  2149   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3929          7050            No
      FO
     v  or v               1484 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2149                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2445          4600                  No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.3    pc/mi/ln
                R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.321
                                              S
Space mean speed in ramp influence area,     S  = 57.6    mph
                                              R
Space mean speed in outer lanes,             S  = 61.5    mph
                                              0
Space mean speed for all vehicles,           S  = 59.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3190	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	660	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3190		660			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	886		183			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3633        752                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    0.635   Using Equation  9
                   FD
                  v  = v  + (v - v ) P  =  2580   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                3633          7050            No
      Fi   F
     v  = v - v            2881          7050            No
      FO   F   R
     v                     752           2100            No
      R
     v  or v               1053 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2580                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2580          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   25.1    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.366
                                              S
Space mean speed in ramp influence area,     S  = 56.6    mph
                                              R
Space mean speed in outer lanes,             S  = 71.1    mph
                                              0
Space mean speed for all vehicles,           S  = 60.1    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2530	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	50	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2530		50			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	703		14			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2881        57                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.601   Using Equation  3
                   FM
                  v  = v  (P  ) =  1732   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2938          7050            No
      FO
     v  or v               1149 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1732                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area______________________
                      Actual        Max Desirable         Violation?
     v                1789          4600                  No
      12A
_________________Level of Service Determination (if not F)______________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   14.1    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation___________________________________

Intermediate speed variable,                 M  = 0.285
                                              S
Space mean speed in ramp influence area,     S  = 58.4    mph
                                              R
Space mean speed in outer lanes,             S  = 62.7    mph
                                              0
Space mean speed for all vehicles,           S  = 60.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3990	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	930	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3990		930			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1108		258			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           4544        1059                 pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    0.598   Using Equation  9
                   FD
                  v  = v  + (v - v ) P  =  3142   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  4544          7050            No
      Fi   F
     v  = v - v              3485          7050            No
      FO   F   R
     v                       1059          2100            No
      R
     v  or v                 1402 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3142                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3142          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   29.9    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.393
                                              S
Space mean speed in ramp influence area,     S  = 56.0    mph
                                              R
Space mean speed in outer lanes,             S  = 69.7    mph
                                              0
Space mean speed for all vehicles,           S  = 59.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3060	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	540	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3060		540			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	850		150			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3485        615                  pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =             (Equation 13-6 or 13-7)
                   EQ
                  P   =    0.599   Using Equation  3
                   FM
                  v  = v  (P  ) =  2086   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4100          7050            No
      FO
     v  or v               1399 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2086                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2701          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.6    pc/mi/ln
         R                    R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.327
                                              S
Space mean speed in ramp influence area,     S  = 57.5    mph
                                              R
Space mean speed in outer lanes,             S  = 61.8    mph
                                              0
Space mean speed for all vehicles,           S  = 58.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

______________________________Merge Analysis______________________________

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

______________________________Freeway Data______________________________

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3600	vph

______________________________On Ramp Data______________________________

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	230	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

______________________Adjacent Ramp Data (if one exists)______________________

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

__________________Conversion to pc/h Under Base Conditions__________________

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3600	230		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1000	64		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          4100        262                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.591   Using Equation  3
                   FM
                  v  = v  (P  ) =  2425   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum         LOS F?
     v                     4362          7050            No
      FO
     v  or v               1675 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2425                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2687          4600                  No
      12A
_________________Level of Service Determination (if not F)____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   23.2    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation_________________________________

Intermediate speed variable,                 M  = 0.333
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  = 60.8    mph
                                              0
Space mean speed for all vehicles,           S  = 58.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3830	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1340	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3830		1340			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1064		372			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4362	1526	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.581 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3173 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4362	7050	No
$v_{FO} = v_F - v_R$	2836	7050	No
v_R	1526	2100	No
v_3 or v_{av34}	1189 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3173 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3173	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_0 = 70.6 mph

Space mean speed for all vehicles, S = 58.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2490	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2490	190		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	692	53		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           2836        216                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.601   Using Equation  3
                   FM
                  v  = v  (P  ) =  1705   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3052          7050            No
      FO
     v  or v               1131 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1705                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                1921          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   15.0    pc/mi/ln
         R                    R           12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.288
                                              S
Space mean speed in ramp influence area,     S  = 58.4    mph
                                              R
Space mean speed in outer lanes,             S  = 62.7    mph
                                              0
Space mean speed for all vehicles,           S  = 59.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2720	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	820	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2720	820		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	756	228		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3098        934                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =            (Equation 13-6 or 13-7)
                   EQ
                  P   =    0.600   Using Equation  3
                   FM
                  v   = v  (P   ) =  1858   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4032          7050            No
      FO
     v  or v               1240 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1858                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2792          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.8    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.329
                                              S
Space mean speed in ramp influence area,     S  = 57.4    mph
                                              R
Space mean speed in outer lanes,             S  = 62.3    mph
                                              0
Space mean speed for all vehicles,           S  = 58.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3540	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3540	110		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	983	31		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4032	125	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.600 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2419 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4157	7050	No
v_3 or v_{av34}	1613 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2419		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2544	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 61.0	mph
Space mean speed for all vehicles,	S = 59.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3650	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	670	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3650		670			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1014		186			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4157	763	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.621 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2871 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4157	7050	No
$v_{FO} = v_F - v_R$	3394	7050	No
v_R	763	2100	No
v_3 or v_{av34}	1286 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2871 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2871	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 27.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.367	
Space mean speed in ramp influence area,	S_R = 56.6	mph
Space mean speed in outer lanes,	S_0 = 70.2	mph
Space mean speed for all vehicles,	S = 60.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2980	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	630	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2980		630			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	828		175			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3394	718	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.605 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2055 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4112	7050	No
v_3 or v_{av34}	1339 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 Yes

If yes, v_{12A} = 2055 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2773	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.293	
Space mean speed in ramp influence area,	S_R = 58.3	mph
Space mean speed in outer lanes,	S_0 = 62.0	mph
Space mean speed for all vehicles,	S = 59.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3370	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	710	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3370	710		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	936	197		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3838        809                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  2302   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4647          7050            No
      FO
     v  or v               1536 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2302                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3111          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   24.4    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.353
                                              S
Space mean speed in ramp influence area,     S  = 56.9    mph
                                              R
Space mean speed in outer lanes,             S  = 61.3    mph
                                              0
Space mean speed for all vehicles,           S  = 58.3    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4080	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	230	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4080	230		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1133	64		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          4647        262                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  2788   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4909          7050            No
      FO
     v  or v               1859 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2788                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3050          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   24.1    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.331
                                              S
Space mean speed in ramp influence area,     S  = 57.4    mph
                                              R
Space mean speed in outer lanes,             S  = 60.1    mph
                                              0
Space mean speed for all vehicles,           S  = 58.4    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative No Project
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4310	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	850	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4310		850			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1197		236			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4909	968	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.593 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3304 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4909	7050	No
$v_{FO} = v_F - v_R$	3941	7050	No
v_R	968	2100	No
v_3 or v_{av34}	1605 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3304 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3304	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.385

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_0 = 68.9 mph

Space mean speed for all vehicles, S = 59.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative No Project

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3460	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	620	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3460	620		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	961	172		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976        0.976
Driver population factor, fP            1.00         1.00
Flow rate, vp                           3941         706                      pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =             (Equation 13-6 or 13-7)
                   EQ
                  P   =    0.605   Using Equation  3
                   FM
                  v  = v  (P  ) =  2386   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4647          7050            No
      FO
     v  or v               1555 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2386                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3092          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   23.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                   M  = 0.317
                                                S
Space mean speed in ramp influence area,       S  = 57.7    mph
                                                R
Space mean speed in outer lanes,               S  = 61.2    mph
                                                0
Space mean speed for all vehicles,             S  = 58.8    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2995	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	370	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2995		370			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	832		103			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3411	421	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.655 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2381 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3411	7050	No
$v_{FO} = v_F - v_R$	2990	7050	No
v_R	421	2100	No
v_3 or v_{av34}	1030 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2381 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2381	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.336	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_0 = 71.2	mph
Space mean speed for all vehicles,	S = 60.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	340	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2625	340		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	729	94		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2990	387	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1790 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3377	7050	No
v_3 or v_{av34}	1200 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1790 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2177	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.303

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = 62.5 mph

Space mean speed for all vehicles, S = 59.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2965	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2965	305		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	824	85		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3377	347	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.591 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1997 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3724	7050	No
v_3 or v_{av34}	1380 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 1997		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2344	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.317	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_0 = 61.8	mph
Space mean speed for all vehicles,	S = 59.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3270	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	708	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3270		708			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	908		197			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3724	806	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.630 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2644 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3724	7050	No
$v_{FO} = v_F - v_R$	2918	7050	No
v_R	806	2100	No
v_3 or v_{av34}	1080 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2644 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2644	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.371	
Space mean speed in ramp influence area,	S_R = 56.5	mph
Space mean speed in outer lanes,	S_0 = 71.0	mph
Space mean speed for all vehicles,	S = 60.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2562	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	50	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2562	50		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	712	14		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2918        57                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.601   Using Equation  3
                   FM
                  v  = v  (P  ) =  1755   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum          LOS F?
     v                     2975          7050             No
      FO
     v  or v               1163 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1755                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                1812          4600                  No
      12A
_________________Level of Service Determination (if not F)______________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   14.3    pc/mi/ln
          R                   R          12             A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation________________________________

Intermediate speed variable,                 M  = 0.285
                                              S
Space mean speed in ramp influence area,     S  = 58.4    mph
                                              R
Space mean speed in outer lanes,             S  = 62.6    mph
                                              0
Space mean speed for all vehicles,           S  = 60.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4096	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	930	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4096		930			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1138		258			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4665	1059	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.595 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3203 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4665	7050	No
$v_{FO} = v_F - v_R$	3606	7050	No
v_R	1059	2100	No
v_3 or v_{av34}	1462 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3203 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3203	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.393

Space mean speed in ramp influence area, S_R = 56.0 mph

Space mean speed in outer lanes, S_0 = 69.5 mph

Space mean speed for all vehicles, S = 59.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3166	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	540	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3166	540		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	879	150		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3606	615	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2158 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4221	7050	No
v_3 or v_{av34}	1448 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2158		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2773	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.331	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_0 = 61.6	mph
Space mean speed for all vehicles,	S = 58.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3706	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	264	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3706	264		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1029	73		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4221	301	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.591 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2497 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4522	7050	No
v_3 or v_{av34}	1724 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2497		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2798	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.340	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 60.6	mph
Space mean speed for all vehicles,	S = 58.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3970	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1406	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3970		1406			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1103		391			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4521	1601	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.573 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3275 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4521	7050	No
$v_{FO} = v_F - v_R$	2920	7050	No
v_R	1601	2100	No
v_3 or v_{av34}	1246 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3275 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3275	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.442	
Space mean speed in ramp influence area,	S_R = 54.8	mph
Space mean speed in outer lanes,	S_0 = 70.3	mph
Space mean speed for all vehicles,	S = 58.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2564	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2564	190		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	712	53		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2920	216	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.601 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1756 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3136	7050	No
v_3 or v_{av34}	1164 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 1756		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1972	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.290	
Space mean speed in ramp influence area,	S_R = 58.3	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 59.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2782	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	918	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2782		918			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	773		255			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Grade			
Grade		%	0.00	%		%
Length		mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3168	1046	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.600 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1900 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4214	7050	No
v_3 or v_{av34}	1268 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 1900		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2946	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 23.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.339	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 58.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3700	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3700	110		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1028	31		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           4214        125                  pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  2528   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4339          7050            No
      FO
     v  or v               1686 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34          12
If yes, v    = 2528                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                2653          4600                  No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.1    pc/mi/ln
          R                   R          12             A
Level of service for ramp-freeway junction areas of influence  C

______________________________Speed Estimation_________________________________

Intermediate speed variable,                 M  = 0.304
                                              S
Space mean speed in ramp influence area,     S  = 58.0    mph
                                              R
Space mean speed in outer lanes,             S  = 60.7    mph
                                              0
Space mean speed for all vehicles,           S  = 59.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3810	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	703	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3810		703			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1058		195			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4339	801	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.615 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2976 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4339	7050	No
$v_{FO} = v_F - v_R$	3538	7050	No
v_R	801	2100	No
v_3 or v_{av34}	1363 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 2976 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2976	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 28.0+ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.370	
Space mean speed in ramp influence area,	S_R = 56.5	mph
Space mean speed in outer lanes,	S_0 = 69.9	mph
Space mean speed for all vehicles,	S = 60.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3107	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	630	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3107	630		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	863	175		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3539	718	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.605 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2143 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4257	7050	No
v_3 or v_{av34}	1396 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2143 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2861	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 61.8	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3445	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	785	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3445		785			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	957		218			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3923        894                    pcph

_______________________Estimation of V12 Merge Areas_______________________

                 L  =           (Equation 13-6 or 13-7)
                  EQ
                 P  =    0.600   Using Equation  3
                  FM
                 v  = v  (P  ) =  2353   pc/h
                  12   F   FM

_____________________________Capacity Checks_____________________________

                            Actual        Maximum         LOS F?
     v                      4817          7050            No
      FO
     v  or v                1570 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?            No
      3     av34
Is   v  or v      > 1.5 v  /2             Yes
      3     av34         12
If yes, v    = 2353                    (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area____________________
                       Actual        Max Desirable         Violation?
     v                 3247          4600                  No
      12A
________________Level of Service Determination (if not F)____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   25.4    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation______________________________

Intermediate speed variable,                 M  = 0.365
                                              S
Space mean speed in ramp influence area,     S  = 56.6    mph
                                              R
Space mean speed in outer lanes,             S  = 61.1    mph
                                              0
Space mean speed for all vehicles,           S  = 58.0    mph
___________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4230	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	230	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4230	230		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1175	64		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4818	262	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.600 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2890 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5080	7050	No
v_3 or v_{av34}	1928 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2890		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3152	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.340	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 59.9	mph
Space mean speed for all vehicles,	S = 58.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 09/24/2018
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Southbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus CASP
Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4460	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	896	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4460		896			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1239		249			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	5079	1020	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.586 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3399 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5079	7050	No
$v_{FO} = v_F - v_R$	4059	7050	No
v_R	1020	2100	No
v_3 or v_{av34}	1680 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3399 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3399	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.390	
Space mean speed in ramp influence area,	S_R = 56.0	mph
Space mean speed in outer lanes,	S_0 = 68.7	mph
Space mean speed for all vehicles,	S = 59.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	09/24/2018
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus CASP

Description: Salinas Central Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3564	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	620	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3564	620		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	990	172		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4059	706	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.605 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2458 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4765	7050	No
v_3 or v_{av34}	1601 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2458		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3164	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = 61.0 mph

Space mean speed for all vehicles, S = 58.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: AM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3152	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	377	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3152		377			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	876		105			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3590        429                     pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L   =            (Equation 13-12 or 13-13)
                   EQ
                  P   =    0.651   Using Equation  9
                   FD
                  v   = v  + (v - v ) P  =  2485   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                3590          7050            No
      Fi   F
     v  = v - v            3161          7050            No
      FO   F   R
     v                     429           2100            No
      R
     v  or v               1105 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 2485                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                2485          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   24.3    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.337
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  = 70.9    mph
                                              0
Space mean speed for all vehicles,           S  = 60.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2775	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	340	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2775	340		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	771	94		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3160	387	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1891 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3547	7050	No
v_3 or v_{av34}	1269 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1891 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2278	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 18.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 59.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3115	305		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	865	85		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3548        347                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.591   Using Equation  3
                   FM
                  v  = v  (P  ) =  2099   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     3895          7050            No
      FO
     v  or v               1449 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2099                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual       Max Desirable        Violation?
     v                2446         4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   21.3    pc/mi/ln
         R                    R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.321
                                              S
Space mean speed in ramp influence area,     S  = 57.6    mph
                                              R
Space mean speed in outer lanes,             S  = 61.6    mph
                                              0
Space mean speed for all vehicles,           S  = 59.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3420	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	864	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3420		864			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	950		240			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3895	984	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.617 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2781 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3895	7050	No
$v_{FO} = v_F - v_R$	2911	7050	No
v_R	984	2100	No
v_3 or v_{av34}	1114 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2781 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2781	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.387	
Space mean speed in ramp influence area,	S_R = 56.1	mph
Space mean speed in outer lanes,	S_0 = 70.9	mph
Space mean speed for all vehicles,	S = 59.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2556	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	50	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2556	50		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	710	14		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          2911        57                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.601   Using Equation  3
                   FM
                  v  = v  (P  ) =  1750   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     2968          7050            No
      FO
     v  or v               1161 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1750                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                1807          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   14.2    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  B

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.285
                                              S
Space mean speed in ramp influence area,     S  = 58.4    mph
                                              R
Space mean speed in outer lanes,             S  = 62.6    mph
                                              0
Space mean speed for all vehicles,           S  = 60.0    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Period
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Off Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4185	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	939	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4185		939			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1163		261			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          4766        1069                  pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    0.592   Using Equation  9
                   FD
                  v  = v  + (v - v ) P  =  3256   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                             Actual        Maximum         LOS F?
     v  = v                  4766          7050            No
      Fi   F
     v  = v - v              3697          7050            No
      FO   F   R
     v                       1069          2100            No
      R
     v  or v                 1510 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?             No
      3     av34
Is   v  or v      > 1.5 v  /2              No
      3     av34         12
If yes, v    = 3256                     (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3256          4400                  No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   30.9    pc/mi/ln
                        R                   12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.394
                                              S
Space mean speed in ramp influence area,     S  = 55.9    mph
                                              R
Space mean speed in outer lanes,             S  = 69.3    mph
                                              0
Space mean speed for all vehicles,           S  = 59.6    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Northbound
Junction: Laurel Drive Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3246	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	540	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3246	540		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	902	150		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3697        615                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.599   Using Equation  3
                   FM
                  v  = v  (P  ) =  2213   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4312          7050            No
      FO
     v  or v               1484 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2213                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable          Violation?
     v                2828          4600                   No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   22.5    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.334
                                              S
Space mean speed in ramp influence area,     S  = 57.3    mph
                                              R
Space mean speed in outer lanes,             S  = 61.5    mph
                                              0
Space mean speed for all vehicles,           S  = 58.7    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3786	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	264	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3786		264			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1052		73			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4312	301	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.591 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2551 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4613	7050	No
v_3 or v_{av34}	1761 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2551		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2852	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.344	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = 60.5	mph
Space mean speed for all vehicles,	S = 58.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4050	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	1599	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4050		1599			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1125		444			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          4613        1821                     pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    0.561   Using Equation  9
                   FD
                  v  = v  + (v - v ) P  =  3387   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                          Actual        Maximum         LOS F?
     v  = v               4613          7050            No
      Fi   F
     v  = v - v           2792          7050            No
      FO   F   R
     v                    1821          2100            No
      R
     v  or v              1226 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?          No
      3     av34
Is   v  or v      > 1.5 v  /2           No
      3     av34         12
If yes, v    = 3387                  (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3387          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   32.0    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.462
                                              S
Space mean speed in ramp influence area,     S  = 54.4    mph
                                              R
Space mean speed in outer lanes,             S  = 70.4    mph
                                              0
Space mean speed for all vehicles,           S  = 57.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/18/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Northbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2451	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2451	190		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	681	53		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2791	216	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.601 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1678 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3007	7050	No
v_3 or v_{av34}	1113 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1678 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	1894	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.287	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_0 = 62.8	mph
Space mean speed for all vehicles,	S = 59.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road Loop On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2805	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1125	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2805		1125			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	779		313			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Grade			
Grade		%	0.00	%		%
Length		mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          3195        1281                  pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  1917   pc/h
                   12   F   FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     4476          7050            No
      FO
     v  or v               1278 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 1917                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

__________________________Flow Entering Merge Influence Area___________________
                      Actual        Max Desirable        Violation?
     v                3198          4600                 No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   24.8    pc/mi/ln
          R                   R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.360
                                              S
Space mean speed in ramp influence area,     S  = 56.7    mph
                                              R
Space mean speed in outer lanes,             S  = 62.2    mph
                                              0
Space mean speed for all vehicles,           S  = 58.2    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/18/2016
Analysis time period: AM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3930	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	110	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3930	110		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1092	31		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          4476        125                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =             (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  2685   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum         LOS F?
     v                     4601          7050            No
      FO
     v  or v               1791 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2685                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable          Violation?
     v                2810          4600                   No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   22.3    pc/mi/ln
         R                    R           12            A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation___________________________________

Intermediate speed variable,                 M  = 0.314
                                              S
Space mean speed in ramp influence area,     S  = 57.8    mph
                                              R
Space mean speed in outer lanes,             S  = 60.4    mph
                                              0
Space mean speed for all vehicles,           S  = 58.8    mph
________________________________________________________________________________
```

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4040	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	703	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4040		703			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1122		195			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           4601        801                    pcph

_________________________Estimation of V12 Diverge Areas_______________________

                  L  =            (Equation 13-12 or 13-13)
                   EQ
                  P  =    0.608   Using Equation  9
                   FD
                  v  = v  + (v - v ) P  =  3112   pc/h
                   12   R     F   R   FD

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v  = v                4601          7050            No
      Fi   F
     v  = v - v            3800          7050            No
      FO   F   R
     v                     801           2100            No
      R
     v  or v               1489 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            No
      3     av34         12
If yes, v    = 3112                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

______________________Flow Entering Diverge Influence Area_____________________
                      Actual        Max Desirable        Violation?
     v                3112          4400                 No
      12
_________________Level of Service Determination (if not F)_____________________

Density,               D = 4.252 + 0.0086 v  - 0.009  L   =   29.2    pc/mi/ln
                        R                  12          D
Level of service for ramp-freeway junction areas of influence D

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 D  = 0.370
                                              S
Space mean speed in ramp influence area,     S  = 56.5    mph
                                              R
Space mean speed in outer lanes,             S  = 69.4    mph
                                              0
Space mean speed for all vehicles,           S  = 60.1    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3337	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	638	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3337	638		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	927	177		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	3800	727	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.605 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2301 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4527	7050	No
v_3 or v_{av34}	1499 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	
If yes, v_{12A} = 2301		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3028	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.312	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_0 = 61.4	mph
Space mean speed for all vehicles,	S = 59.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Boronda Road Loop On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3456	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	974	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3456	974		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	960	271		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV           0.976       0.976
Driver population factor, fP            1.00        1.00
Flow rate, vp                           3936        1109                    pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L   =            (Equation 13-6 or 13-7)
                   EQ
                  P   =    0.600   Using Equation  3
                   FM
                  v   = v  (P   ) =  2361   pc/h
                   12    F    FM

_______________________________Capacity Checks_________________________________

                           Actual        Maximum         LOS F?
     v                     5045          7050            No
      FO
     v  or v               1575 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 2361                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3470          4600                  No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   27.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.390
                                              S
Space mean speed in ramp influence area,     S  = 56.0    mph
                                              R
Space mean speed in outer lanes,             S  = 61.1    mph
                                              0
Space mean speed for all vehicles,           S  = 57.5    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst: Fehr & Peers
Agency/Co.:
Date performed: 10/19/2016
Analysis time period: PM Peak Hour
Freeway/Dir of Travel: US 101 Southbound
Junction: Boronda Road On Ramp
Jurisdiction: Caltrans
Analysis Year: Cumulative Plus WASP+CASP
Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4430	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	230	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4430	230		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1231	64		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

```
Heavy vehicle adjustment, fHV          0.976       0.976
Driver population factor, fP           1.00        1.00
Flow rate, vp                          5045        262                     pcph

_________________________Estimation of V12 Merge Areas_________________________

                  L  =            (Equation 13-6 or 13-7)
                   EQ
                  P  =    0.600   Using Equation  3
                   FM
                  v  = v  (P  ) =  3026   pc/h
                   12   F   FM

_______________________________Capacity Checks_______________________________

                           Actual        Maximum         LOS F?
     v                     5307          7050            No
      FO
     v  or v               2019 pc/h     (Equation 13-14 or 13-17)
      3     av34
Is   v  or v      > 2700 pc/h?           No
      3     av34
Is   v  or v      > 1.5 v  /2            Yes
      3     av34         12
If yes, v    = 3026                   (Equation 13-15, 13-16, 13-18, or 13-19)
         12A

________________________Flow Entering Merge Influence Area_____________________
                      Actual        Max Desirable         Violation?
     v                3288          4600                  No
      12A
_________________Level of Service Determination (if not F)_____________________

Density, D = 5.475 + 0.00734 v  + 0.0078 v   - 0.00627 L   =   26.0    pc/mi/ln
          R                   R           12             A
Level of service for ramp-freeway junction areas of influence  C

_____________________________Speed Estimation__________________________________

Intermediate speed variable,                 M  = 0.353
                                              S
Space mean speed in ramp influence area,     S  = 56.9    mph
                                              R
Space mean speed in outer lanes,             S  = 59.5    mph
                                              0
Space mean speed for all vehicles,           S  = 57.9    mph
_______________________________________________________________________________
```

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive Off Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4660	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	896	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4660		896			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1294		249			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	5307	1020	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.580 Using Equation 9

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3508 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5307	7050	No
$v_{FO} = v_F - v_R$	4287	7050	No
v_R	1020	2100	No
v_3 or v_{av34}	1799 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3508 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3508	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.390	
Space mean speed in ramp influence area,	S_R = 56.0	mph
Space mean speed in outer lanes,	S_0 = 68.2	mph
Space mean speed for all vehicles,	S = 59.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.90

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	Fehr & Peers
Agency/Co.:	
Date performed:	10/19/2016
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	US 101 Southbound
Junction:	Laurel Drive On Ramp
Jurisdiction:	Caltrans
Analysis Year:	Cumulative Plus WASP+CASP

Description: Salinas West Area Specific Plan (Without Expressway)

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3764	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	627	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3764		627			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1046		174			v
Trucks and buses	5		5			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	4287	714	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.605 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2596 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5001	7050	No
v_3 or v_{av34}	1691 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2596 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3310	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.338	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 60.7	mph
Space mean speed for all vehicles,	S = 58.4	mph

APPENDIX J –2007 FINAL SUPPLEMENT FOR THE SALINAS GENERAL PLAN FINAL PROGRAM EIR MITIGATION AND MONITORING REPORTING PROGRAM (MMRP)

2007 MITIGATION MONITORING AND REPORTING PROGRAM

Final Supplement for the 2002 Salinas General Plan Final Program EIR

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Project Level Significant and Unavoidable Impacts				
Regional Highway System				
C3	The City will implement General Plan Implementation Program C-2 – Traffic Fee Ordinance. Implementation Program C-2 requires the City to update the Traffic Fee Ordinance to reflect projected circulation needs and apply the revised ordinance to applicable developments. The City will consider including alternative modes of transportation (bicycle and pedestrian) as projects eligible for use of Traffic Impact Fees. The City will also work with other local agencies, as well as the Transportation Agency for Monterey County (TAMC) and Caltrans on development of a regional traffic impact fee, to assist in the funding of regional transportation improvements throughout Monterey County.	Community Development, Development and Permit Services, Public Works,		
C5	The City will implement General Plan Implementation Program C-5. Implementation Program C-5 requires the City to reduce expenditure, improve design, and minimize traffic disruption by working with TAMC, Caltrans, MST, AMBAG, Monterey Bay Unified Air Pollution Control District, and other regional transportation agencies to coordinate local street improvements with major transportation system improvement projects such as improvements to Highway 101. In addition, the impacts of discretionary development projects and major transportation projects will be monitored by the City and mitigation may be required.	Community Development, Public Works, TAMC, Caltrans, County of Monterey		
C7	The City will to continue to monitor the planning process for regional circulation improvements to analyze how they would impact the Salinas circulation system. Regional roadway system impacts will be considered when making land use decisions for major development proposals within the City. If necessary, the	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas		

[1] All references to the Community Development, Development and Permit Services and Public Works Departments is revised- to be the Development and Engineering Services Department

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	City will revise the General Plan Circulation System to address the impact from regional circulation system improvements.	Transit		
SEIR-RT1	In addition to the roadway improvements identified in Table 5.1-11 of the Final SEIR, the City will implement the roadway improvements identified in Table 5.1-14 of the Final SEIR, where feasible, to provide LOS D or better along City roadways. For future development within the Annexation area and Settrini property, this mitigation may be satisfied by the payment of the City of Salinas Traffic Impact Fee Program, or constructing said improvements and receiving City Traffic Fee credit. This program would require the specific development within the Project area to be responsible for payment of a fee proportional to the development's impact on identified local roadway segments, or the project developers may provide the specific roadway segment improvements. The extent and timeline of the proportional mitigation will be specifically refined through the Specific Plans directing the development of the Annexation area and Settrini property. The project developers will also be responsible for payment of a Regional Development/Traffic Impact Fee, when the overall financing program is developed/approved by TAMC and this program is adopted by TAMC. The regional fee could also supplement funds for certain roadway improvements along Caltrans designated roadways within the City.	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		
SEIR-RT2	In addition to the roadway improvements identified in the Final SEIR Table 5.1-11, the City will work with the County of Monterey and TAMC to implement the roadway improvements identified in the Final SEIR Table 5.1-17, where feasible, to provide acceptable levels of service along County two-lane roadways. The City shall work with the County in developing fee programs as described in the 2006 Greater Salinas Area Memorandum of Understanding, agreed to by the City and County, and outlined in City Growth agreements 9 and 10: "The City and County agree to support fees and taxes needed to mitigate the collective impact of new and existing development on the regional transportation system to the extent that the fees and taxes reflect the overall financing program adopted by TAMC… the City and County agree that County will develop a County-wide Traffic Impact fee program for the improvement of major County roads in accordance with the County's adopted General Plan. The County will	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	not rely upon the imposition of an ad hoc traffic fee on City development. The development of a Traffic Impact fee for the Salinas Area … will be a priority and a nexus study and hearing process should be completed." This mitigation may be satisfied by the implementation of a Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. When the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program is adopted, a specific project development within the Annexation area and Settrini property would be responsible for payment of a fee proportional to the development's impact on a given road segment, or the project developers may provide the necessary improvements for an impacted roadway segment. The extent and timeline of the proportional mitigation will be established by the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. In addition to the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, the City of Salinas Traffic Impact Fee Program may supplement funds for certain County two-lane roadway segment improvements located within the municipal boundaries of the City of Salinas. In the absence of an adopted Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, development within the Project area is still obligated to mitigate its significant regional traffic impacts to the extent feasible, which is currently identified as pro rata fair share contributions toward the various impacted facilities.			
SEIR-RT3	In addition to the roadway improvements identified in the Final SEIR Table 5.1-11, the City will work with the County of Monterey, TAMC, and Caltrans to implement the roadway improvements identified in the Final SEIR Table 5.1-21, where feasible, to provide an acceptable level of service along regional freeway segments. The City shall work with the County in developing fee programs as described in the 2006 Greater Salinas Area Memorandum of Understanding, agreed to by the City and County, and outlined in City Growth agreements 9 and 10: "The City and County agree to support fees and taxes needed to mitigate the collective impact of new and existing development on the regional transportation system to the extent that the fees and taxes reflect the overall financing program adopted by TAMC… the City	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	and County agree that County will develop a County-wide Traffic Impact fee program for the improvement of major County roads in accordance with the County's adopted General Plan. The County will not rely upon the imposition of an ad hoc traffic fee on City development. The development of a Traffic Impact fee for the Salinas Area … will be a priority and a nexus study and hearing process should be completed." This mitigation may be satisfied by the implementation of a Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program described above. When the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program is adopted, a specific project development within the Annexation area and Settrini property would be responsible for payment of a fee proportional to the development's impact on a given road segment, or the project developers may provide the necessary improvements for an impacted roadway segment. The extent and timeline of the proportional mitigation will be established by the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. In addition to the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, the City of Salinas Traffic Impact Fee Program may supplement funds for certain regional freeway segment improvements located within the municipal boundaries of the City of Salinas. In the absence of an adopted Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, development within the Project area is still obligated to mitigate its significant regional traffic impacts to the extent feasible, which is currently identified as pro rata fair share contributions toward the various impacted facilities.			
SEIR-RT4	The same performance measures, methods of analysis of impacts, and mitigation will be applied to any future annexation and Specific Plan development proposal for the area within the proposed Sphere of Influence Amendment, south of Williams Road.	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		
Vehicular Traffic `				
N2	The City will apply General Plan Implementation Program N-3 – Minimize Construction Noise, during the construction phase of proposed projects within	Community Development, Development and Permit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	the community. Implementation Program N-3 requires all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Salinas Zoning Code, and Chapter 21A of the Municipal Code).	Services, Police		
N5	The City will implement General Plan Implementation Program N-5 – Reduce Vehicular Noise, which requires the City to reduce the impact of vehicular noise affecting existing residential development through the addition of noise reduction methods such as sound walls, berms, or others.	Community Development, Public Works		
Short-Term Air Quality				
AQ1	The City will apply General Plan Implementation Program COS-22 – Control Fugitive Dust and Particulate Matter. Implementation Program COS-22 requires the City to reduce dust and particulate matter levels by implementing fugitive dust control measures such as: • Restrict outdoor storage of fine particulate matter; • Provide tree buffers between new residential and adjacent agricultural uses; • Monitor construction and agricultural activities and emissions; and • Pave areas used for vehicular maneuvering.	Community Development		
AQ2	The City will apply General Plan Implementation Program COS-23 – Monterey Bay Unified Air Pollution Control District Air Quality Management Plan. Implementation Program COS-23 requires the City to continue to cooperate with the MBUAPCD to implement the most recent Air Quality Management Plan to address regional motor vehicle emissions. In particular, coordinate with the MBUAPCD and AMBAG, providing technical assistance and demographic data when available, during the development of future population projections by AMBAG.	Community Development, MBUAPCD, AMBAG		
AQ3	The City will apply General Plan Implementation Program COS-26 – CEQA Review of Discretionary Projects. Implementation Program COS-26 requires the City to review discretionary development proposals for potential regional and local air quality impacts per the California Environmental Quality Act (CEQA). If potential impacts are identified, mitigation will be required to	Community Development, MBUAPCD, AMBAG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	reduce the impact to a level less than significant, where feasible.			
Long-Term Air Quality				
Previous AQ1 through AQ3	(see previous AQ1 though AQ3			
AQ4	The City will apply General Plan Implementation Program COS-23 – Electric Vehicle Charging Areas. Implementation Program COS-23 requires the City to include electric vehicle charging areas in new public and private development and redevelopment projects. The City shall also inform property owners of electric vehicle charging area programs when plans for development and redevelopment projects are submitted.	Community Development, Redevelopment Agency		
AQ5	The City will apply General Plan Implementation Program COS-25 – Transportation Control Measures. Implementation Program COS-25 requires the City to coordinate with the MBUAPCD and AMBAG to support the updated Transportation Control Measures as described in detail in the most recent AQMP. Currently, these measures include: • Improved Public Transit Service; • Areawide Transportation Demand Management; • Signal Synchronization; • New and Improved Bicycle Facilities; • Alternative Fuels; • Livable Communities (communities designed to reduce automobile dependency); • Selected Intelligent Transportation Systems; and • Traffic Calming.	Community Development, MBUAPCD, AMBAG		
AQ6	The City will apply General Plan Implementation Program COS-32 – Energy Efficient Public Buildings. Implementation Program COS-32 requires the City to implement energy conservation measures in public buildings through the following actions: • Promote energy efficient buildings and site design for all new public buildings during the site development permit process; and • Install energy saving devices in new public buildings and retrofit	Community Development, Public Works, Development and Permit Services		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	existing public buildings.			
AQ7	The City will apply General Plan Implementation Program COS-33 – Promote Energy Retrofit Programs. Implementation Program COS-33 requires the City to promote retrofit programs to reduce energy usage and consequently reduce emissions from energy consumption. Encourage utility companies to provide informational literature about available retrofit programs at City offices, the Permit Center, and libraries.	Development and Permit Services, utility companies		
Groundwater				
HW4	The City will continue to implement General Plan Implementation Program COS-3 – Watershed Management Initiative, on an ongoing basis. Implementation Program COS-3 requires the City to cooperate with Monterey County, the Regional Water Quality Control Board Central Coast (Region 3) and the Monterey County Water Resources Agency (MCWRA), providing technical assistance when necessary to help identify, protect, and preserve critical aquifer recharge areas so that their function is maintained and groundwater quality is not further degraded.	Public Works, RWQCB, MCWRA, County of Monterey, other jurisdictions		
HW9	The City will continue to implement General Plan Implementation Program LU-14 – Water and Sewer for New Development, on an ongoing basis and in response to development proposals. Implementation Program LU-14 requires the City to review development proposals and require necessary studies and water conservation and mitigation measures to ensure adequate water and sewer service.	Community Development, Public Works, Water Providers, Monterey Regional Water Pollution Control Agency (MRWPCA)		
HW10	The City will continue to implement General Plan Implementation Program COS-2 – Seawater Intrusion, on an ongoing basis. Implementation Program COS-2 requires the City to continue to cooperate with the Monterey County Water Resources Agency (MCWRA), the Army Corps of Engineers (ACOE), State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Board (RWQCB) to find a solution to halt seawater intrusion toward Salinas.	Public Works, MCWRA, ACOE, SWRCB, RWQCB		
HW11	The City will continue to implement General Plan Implementation Program COS-5 – Well Monitoring, on an ongoing basis. Implementation Program COS-5 requires the City to cooperate with the County of Monterey Water Resources	Community Development, Public Works, RWQCB, MCWRA, County of		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	Agency and water service providers, providing technical assistance when necessary, to continue to monitor urban and agricultural well usage rates and quality of the groundwater.	Monterey, water service providers		
HW12	The City will continue to implement General Plan Implementation Program COS-6 – Recycled Water, on an ongoing basis. Implementation Program COS-6 requires the City, in cooperation with the state, regional, and local water agencies and suppliers, to participate in programs that seek to limit the spread of seawater intrusion into the groundwater basins through the recycling of wastewater. Specifically, the City shall support the expansion of the use of recycled water for urban and agricultural irrigation and cooperate with these agencies to establish standards and regulations for the use of recycled water in development projects.	Community Development, Development and Permit Services, Public Works, RWQCB, MCWRA, County of Monterey, other jurisdictions		
HW13	The City will implement General Plan Implementation Program COS-7 – Promote Water Conservation, on an ongoing basis. Implementation Program COS-7 requires the City to encourage water conservation throughout Salinas in the following ways: • Implementing the Salinas Urban Water Conservation Plan [see, e.g., Salinas Municipal Code, §§ 36A-6 - 36A-13], the purpose of which is to reduce pumping of water from the Salinas Valley Groundwater Basin for urban uses to the maximum extent feasible and to reduce overall pumping from the Salinas Valley Groundwater Basin by fifteen percent from the pumping that occurred in 1987; • Regulating development with the City's Zoning Code, Landscaping and Irrigation Division [Salinas Municipal Code, §§ 37-50.680 - 37-50.710], which requires developments to apply xeriscape principles including such techniques and materials as native or low water use plants and low precipitation sprinkler heads, bubblers, drip irrigation systems and timing devices; • Supporting the production of recycled water and developing new uses for recycled water; and • Applying water conservation techniques/project "water budgets" to achieve a significant reduction over historic use and over average uses for the proposed type of development by the incorporation of water conservation devices, such as low-flow toilets, flow restriction devices	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	and water conserving appliances in new public and private development and rehabilitation projects.			
SEIR WS1	The City shall implement 15 percent water conservation measures for development within the Project area as described in General Plan Final Program EIR mitigation measure HW13.	Community Development, Development and Permit Services, Public Works		
SEIR WS2	The City shall confirm the availability of adequate water supply and infrastructure to ensure that development does not outpace the available water supply/infrastructure in accordance with SB 610 and SB 221.	Community Development, Development and Permit Services, Public Works		
Historic and Archaeological Resources				
CR1	The City will implement General Plan Implementation Program COS-13 – California Environmental Quality Act, prior to the approval of a discretionary project. Implementation Program COS-13 requires the City to assess discretionary development proposals for potential impacts to sensitive historic, archaeological, and paleontological resources pursuant to Section 15064.5 of the California Environmental Quality Act Guidelines. a. For structures that potentially have historic significance, the City will require that a study be conducted by a professional archaeologist or historian to determine the actual significance of the structure and potential impacts of the proposed development in accordance with CEQA Guidelines Section 15064.5. The City may require modification of the project and/or mitigation measures to avoid any impact to a historic structure, when feasible. b. For all development proposals located within the Carr Lake/Natividad Creek corridor, the City will require a study to be conducted by a professional archaeologist. The objective of the study is to determine if significant archaeological resources are potentially present and if the project will significantly impact the resources. If significant impacts are identified, the City may require the project to be modified to avoid the impacts, or require mitigation measures to mitigate the impacts. Mitigation may involve archaeological investigation and resources recovery. c. The City will assess development proposals for potential impacts to significant paleontological resources pursuant to of the California Environmental Quality Act Guidelines. If the project involves earthworks, the City may require	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	a study conducted by a professional paleontologist to determine if paleontological assets are present, and if the project will significantly impact the resources. If significant impacts are identified, the City may require the project to be modified to avoid impacting the paleontological materials, or require mitigation measures to mitigate the impacts.			
CR2	The City will implement General Plan Implementation Program COS-14 – Historic/Architectural Preservation, on an ongoing basis. Implementation Program COS-14 requires the City to consider implementing a historic/architectural preservation program and a historic/architectural preservation ordinance that encourages public/private partnerships to preserve and enhance historically significant buildings in the community. Measures to implement may include, but are not limited to, Transfer of Development Rights (TDR), establishment of criteria for a historic/architectural resources review process, and implementation of a Mills Act program. TDR could benefit the community by protecting historic resources through an agreement that allows the development potential ("rights") on the historic property to be transferred to another property when the historic resources on the original property is preserved. The Mills Act program would involve the City entering into a contract with a property owner to change how the County Assessor calculates taxes on their property in exchange for the continued preservation of the property by the property owner. The adjusted property taxes are recalculated using a formula in the Mills Act and Revenue and Taxation Code.	Community Development, Redevelopment Agency, City Manager's Office, City Council, County Assessors Office		
CR3	The City will implement General Plan Implementation Program COS-15 – Identify Historic Sites, on an ongoing basis. Implementation Program COS-15 requires the City to promote public awareness and encourage tourism in the City by actively identifying the community's many historic resources through the location of historic landmark plaques and the Historic House Tour Guide. Promote tours of these sites on the City's and other organization's websites.	Community Development, Redevelopment Agency, Salinas Valley Chamber of Commerce, Oldtown Salinas, Monterey County Historical Society, National Steinbeck Center		
Agricultural Resources				
AG1	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requires the City to continue to	Community Development,		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	County of Monterey		
AG2	The City will implement General Plan Implementation Program LU-7 – City-Centered Growth, which requires the City to give priority to redevelopment and infill projects that reduce development pressure on agricultural lands. Establish an incentive program to promote these projects, such as priority permit processing and density bonuses for such developments.	Community Development, Redevelopment Agency		
AG5	The City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank.	Community Development		
Public Services and Utilities-Water				
Previous HW4, HW9 though HW13	(see previous HW4, HW9 through HW13)			
Public Services and Utilities – Solid Waste				
PSU6	The City shall continue to support and cooperate with the Authority and waste haulers in their efforts to increase recycling activities in order to achieve the mandated 50 percent waste diversion goal.	Community Development, Public Works, SVSWA		
PROJECT-LEVEL IMPACTS MITIGATED TO A LEVEL LESS THAN SIGNIFICANT				
Land Use and Planning				
LU1	The City will implement General Plan Implementation Program LU-3 – Zoning and Subdivision Ordinances Update, which requires the City to review and update the Zoning Code and Subdivision Ordinance to ensure consistency with the General Plan and to help implement the General Plan policies and New Urbanism principles.	Community Development, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
LU2	The City will implement General Plan Implementation Program LU-8 – Local Agency Formation Commission, which requires the City to be consistent with a portion of Draft Policy LU 3.4 of the Monterey County Draft General Plan, and to cooperate with LAFCO and the County of Monterey to direct growth outside the City limits to the Future Growth Area, on lands that are served or are planned to be served, with a full range of urban services, such as public water and sewer, an extensive road network, public transit, safety and emergency response services, parks, trails, and open space.	Community Development, LAFCO, County of Monterey		
LU3	The City will implement General Plan Implementation Program LU-22 – Salinas Municipal Airport Master Plan, which requires the City to update and implement the Airport Master Plan. Funding has been approved to update the Salinas Municipal Airport Master Plan. The update should contain the following: address minimum distance for the Eastern bypass south of airport, define how the Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
LU4	The City will implement General Plan Implementation Program LU-23 – Monterey County Airport Land Use Plan, which requires the City to continue to support the implementation of the Monterey County Airport Land Use Plan (MCALUP) and support the timely update of the MCALUP to meet new State guidelines.	Community Development, Salinas Airport, County of Monterey		
LU5	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requiring the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	Community Development, County of Monterey		
LU6	The City will implement General Plan Implementation Program LU-7, which requires the City to encourage City-Centered Growth and give priority to redevelopment and infill projects that reduce development pressure on	Community Development, Redevelopment Agency		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	agricultural lands. The City will also establish an incentive program to promote these projects, such as priority permit processing and density bonuses for such developments.			
Local Roadway System				
C1	In addition to the roadway improvements identified in Table 5.2-4 of the Final SEIR, the City will implement the roadway Public Works improvements identified in the Final SEIR Table 5.2-7 as needed to provide a level of service D or better along City roadways.	Community Development, Public Works		
C2	The City will implement General Plan Implementation Program C-1 – Proposed Development. Implementation Program C-1 requires the City to review discretionary development proposals for potential impacts to the transportation system. The Level of Service Standards established in the Circulation Element will be used to determine the significance of impacts. Intersection level of service will be determined by vehicle delay calculations in accordance with the latest version of the Highway Capacity Manual, Transportation Research Board. Mitigation in the form of physical improvements and/or impact fees will be required for significant impacts. Adequate right-of-way along new roadways will be required to permit pedestrian and bicycle facilities. Proper roadway drainage must be provided to ensure a safe system.	Community Development, Development and Permit Services, Public Works		
C3	(see previous C3)			
C4	The City will implement General Plan Implementation Program C-3 – Capital Improvement Plan. Implementation Program C-3 requires the City to continue to update on an annual basis the Capital Improvement Plan to plan for and fund future improvements to the circulation system, as well as other public facilities, including improvements to the existing pedestrian and bicycle system, within the community.	Public Works		
C5	(see previous C5)			
C6	The City will implement General Plan Implementation Program C-7 – Transportation Control Measures. Implementation Program C-7 requires the City to support the implementation of the Transportation Control Measures	Community Development, Public Works, Caltrans, County of Monterey,		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	contained in the Monterey Bay Unified Air Pollution Control District's (APCD) Air Quality Management Plan to help reduce traffic congestion and encourage the use of alternative modes of transportation.	APCD, Monterey-Salinas Transit, AMBAG		
C8	The City will implement General Plan Implementation Program LU-22 – Salinas Municipal Airport Master Plan. Implementation Program LU-22 requires the City to update and implement the Airport Master Plan. The update should contain the following: address minimum distance for the Eastern bypass south of airport, define how the Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
C9	The City will implement General Plan Implementation Program C-8 – Monterey County Land Use Commission. Implementation Program C-8 requires the City to continue to coordinate with the Monterey County Airport Land Use Commission (ALUC) on projects near the airport and encourage ALUC to update its County Airport Land Use Plan.	Community Development, Salinas Airport, Public Works, County of Monterey, Development and Permit Services		
Noise				
N1	The City will apply General Plan Implementation Program N-3 – Minimize Construction Noise, during the construction phase of proposed projects within the community. Implementation Program N-3 requires all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Salinas Zoning Code, and Chapter 21A of the Municipal Code).	Community Development, Development and Permit Services, Police		
N2	(see previous N2)			
N3	The City will apply General Plan Implementation Program N-4 – Salinas Municipal Airport Master Plan, in concert with the update of the Salinas Airport Master Plan. Implementation Program N-4 requires the City to review and revise as necessary Table N-4, Figure N-2, and the goals, policies and noise plan	Community Development, Salinas Airport Commission, County of Monterey Airport Land Use		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	within the General Plan Noise Element to correspond with any update to the Salinas Airport Master Plan.	Commission (ALUC)		
N4	The City will apply General Plan Implementation Program N-2 – Minimize Commercial/Industrial Noise, on an ongoing basis. Implementation Program N-2 requires the City to limit delivery hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas. The City can only approve exceptions if full compliance with the nighttime limits of the noise regulations is achieved.	Community Development, Development and Permit Services, Police		
N5	(see previous N5)			
Air Quality – Sensitive				
See previous AQ2 through AQ5	(see previous AQ2 through AQ5)			
Hydrology/Water Quality				
HW1	The City will implement General Plan Implementation Program COS-1 – Improve Surface Water Quality, on an ongoing basis and in response to development proposals. Implementation Program COS-1 requires new development projects and substantial rehabilitation projects to incorporate Best Management Practices (BMPs) pursuant to the National Pollutant Discharge Elimination System (NPDES) permit to ensure the City complies with applicable state and federal regulations.	Community Development, Development and Permit Services, Public Works		
HW2	The City will implement General Plan Implementation Program COS-4 – Public Education Programs, on an ongoing basis. Implementation Program COS-4 requires the City to coordinate with other jurisdictions and agencies within the County to develop and implement an education program to inform the public of the harm to the ocean and marine environment caused by pollutants and litter deposited on the surface of the land that can be carried in drainage systems, creeks, rivers, and ultimately the ocean.	Community Development, RWQCB, MCWRA, County of Monterey, Water Awareness Committee of Monterey, other jurisdictions		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
HW3	The City will implement General Plan Implementation Program S-6 – Pesticide Use, on an ongoing basis. Implementation Program S-6 requires the City to continue to monitor regulations governing the use of pesticides and work with the County Agricultural Commission to promote the responsible use of pesticides.	Community Development, Fire Department, County Agriculture Commission		
HW4	(see previous HW4)			
HW5	The City will implement General Plan Implementation Program LU-17 that requires, as a condition of project approval, new development to provide adequate storm water and flood management facilities to control direct and indirect erosion and discharges of pollutants and/or sediments so that "no net increase in runoff" occurs as a result of the proposed project. To determine the facility and Best Management Practices (BMPs) needs, the City will require, when necessary, a hydrological/drainage analysis to be performed by a certified and City-approved engineer, with the cost of said analysis the responsibility of the project applicant.	Public Works		
HW6	The City will implement General Plan Implementation Program S-20 – MCWRA Advisory Committee, on an ongoing basis. Implementation Program S-20 requires the City to continue to participate with the Monterey County Water Resources Agency (MCWRA) Advisory Committee for the Reclamation Ditch drainage system improvement projects.	Public Works		
HW7	The City will implement General Plan Implementation Program LU-16 – Monterey Regional Water Pollution Control Agency, on an ongoing basis. Implementation Program LU-16 requires the City to continue to work with the Monterey Regional Water Pollution Control Agency (MRWPCA) to plan for and ensure adequate capacity for sewage treatment facilities.	Public Works, MRWPCA		
HW8	The City will implement General Plan Implementation Program LU-15 – Sewer and Drainage Master Plan, on an ongoing basis. Implementation Program LU-15 requires the City to continue to implement and update the Sewer and Drainage Master Plan as necessary.	Public Works		
SEIR SD1	Future development within the Project area shall utilize a combined flow control system to achieve the hydrologic mitigation and water quality requirements that	Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	follows similar agency/industry hydro-modification recommendations. The proposed flow control system will include one or more of the following components, which are illustrated in the schematic [in the Final SEIR] and include (1) duration control/water quality treatment basin, (2) pretreatment wetlands, (3) retention/infiltration basin, (4) diversion outlet to either the retention basin or the downstream receiving waters, and (5) sediment forebays to trap small amounts of sediment entering the Project area. The flow control facility will provide hydraulic distribution of flows for water quality treatment, duration/volume control and peak flow attenuation. The facility will provide temporary runoff storage volume to attenuate the peak flow rate and will also incorporate "extended detention" to provide water quality treatment for storm flows as part of the hydraulic detention time for stored runoff. Extended detention is designed with outlets that hydraulically limit the release of the stored runoff volume specifically for the water quality design storm volume (e.g. 85th percentile 24-hour storm) for some minimum time (e.g., 48 hours) to allow particles to settle. The flow control facility will also incorporate a pre-settling zone to provide additional treatment and mitigate nuisance/dry-weather flows. The facility will also provide "retention" that is separate and hydraulically independent of the "detention" zone. The retention feature will store the difference in runoff volume between the pre- and post-development conditions. The flow control facility may consist of single or multiple basins; or equivalent device(s) meeting these hydraulic and water quality performance requirements. Water quality treatment for storm water runoff and urban dry-weather flows will also be provided through the detention/retention basins system within the flow control facility portion.			
SEIR SD2	Future development within the Project area will include Low Impact Development (LID) features to be implemented through site design techniques within the Project area land plan as design elements. LID features will use natural vegetation and small-scale treatment systems to treat and infiltrate storm water runoff close to its origin.	Public Works		
Hazards and Hazardous Materials				

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
H1	The City will implement General Plan Implementation Program S-8 – Household Hazardous Waste Program, which requires the City to continue to work with the Salinas Valley Solid Waste Authority to implement the Household Hazardous Waste program to protect resident from dangers resulting from the use, transport, and disposal of hazardous materials used in the home.	County of Monterey Environmental Health Division, Salinas Valley Solid Waste Authority		
H2	The City will implement General Plan implementation Program S-9 – Small Business Hazardous Waste Program, which requires the City to continue to work with the Salinas Valley Solid Waste Authority to implement the Small Business Hazardous Waste Program, which allows qualified small businesses to dispose of their hazardous wastes at the Salinas Hazardous Household Waste Collection Facility.	County of Monterey Environmental Health Division, Salinas Valley Solid Waste Authority		
H3	The City will implement General Plan Implementation Program S-7 – Hazardous Materials, which requires the City to minimize public health risks and environmental risks from the use, transport, storage, and disposal of hazardous materials by: • Cooperating with federal, state, and county agencies to effectively regulate the management of hazardous materials and hazardous waste; • Cooperating with the County of Monterey to implement the applicable portions of the County Hazardous Waste Management Plan; • Identifying roadway transportation routes for conveyance of hazardous materials (the City does not exercise jurisdictional over transportation of freight along railroad right-of- way or state highways); • Implementing the Multi-Hazard Emergency Plan for accidents involving hazardous materials; and • Cooperating with the Certified Unified program Agency (CUPA) for Salinas (the County of Monterey, Environmental Health Division) and the Salinas Fire Department to administer Risk Management Plans for businesses within the City. • Requiring development project applicants to provide a hazardous materials report documenting past uses of the property and reporting the results of soil sampling where needed to determine whether remediation is required.	County of Monterey, Environmental Health Division, Salinas Fire Department, California Department of Transportation		
H4	The City will implement General Plan Implementation Program S-6 – Pesticide Use, which requires the City to continue to monitor regulations governing the	Community Development, Fire Department, County		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	use of pesticides and work with the County Agricultural Commission to promote the responsible use of pesticides.	Agriculture Commission		
H5	The City will implement General Plan Implementation Program S-18 – Flood Control Insurance, which requires the City to continue to participate in the National Flood Insurance Program (NFIP).	Community Development, Development and Permit Services, Public Works		
H6	The City will implement General Plan Implementation Program S-19 – Flood Overlay District Regulations, which requires the City to continue to apply the Flood Overlay District regulations, pursuant to the City's Zoning Code and implement Section 9, Article VI of the Municipal Code, to minimize the potential impact to and from new development in areas subject to flooding. Update the boundaries of the District as needed to reflect current hydrologic conditions.	Community Development, Development and Permit Services, Public Works		
H7	The City will implement General Plan Implementation Program LU-17 – Project-Related Flood Control and Stormwater Management, which requires, as a condition of project approval, new development to provide adequate storm water and flood management facilities as determined by the Public Works Department. In order to determine the facility and Best Management Practices (BMP) needs, the City may require a hydrological/drainage analysis to be performed by a certified an City-approved engineer, with the cost of said analysis the responsibility of the project applicant.	Public Works		
H8	The City will implement General Plan Implementation Program S-22 – Promote Fire Prevention, which requires the City to promote fire prevention in Salinas by: • Working closely with the Salinas Fire Department to implement fire hazard education and fire prevention programs; • Coordinating with Cal Water and Alco water districts and the Salinas Fire Department to ensure that water pressure for existing developed areas and sites to be developed is adequate for fire fighting purposes; • Conform to Fire Department requirements for individual projects; • Adopting and implementing the most recent Uniform Fire Code provisions and appropriate amendments; and • Continue to require sprinklers in new buildings.	Development and Permit Services, Fire Department, water companies		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
H9	The City will implement General Plan Implementation Program CD-10 – Weed Abatement, which requires the City to continue to monitor and abate weeds throughout the community.	Weed Abatement Specialist		
H10	The City will implement General Plan Implementation Program LU-12 – Fire Protection, Emergency Services, and Law Enforcement Annual Level Of Service Review, which requires the City to review the level of services and funding levels at budget time, adjusting when necessary to ensure that adequate levels of service are provided and facilities are maintained.	Fire Department, Police Department		
H11	The City will implement General Plan Implementation Program LU-21 – Salinas Municipal Airport Master Plan, which requires the City to continue working with the Salinas Airport Commission to implement the Airport Master Plan, providing technical assistance and information to the Commission when necessary. Funding has been approved to update the Salinas Municipal Airport Master Plan. The update should contain the following: address minimum distance for Eastern bypass south of airport, define how Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
H12	The City will implement General Plan Implementation Program C-8 – Monterey County Airport Land Use Commission, which requires the City to continue to coordinate with the Monterey County Airport Land Use Commission (ALUC) on projects near the airport. Encourage ALUC to update its County Airport Land Use Plan.	Community Development, Salinas Airport, Public Works, County of Monterey, Development and Permit Services		
H13	The City will implement General Plan Implementation Program S-11 – Air Transportation Safety, which requires the City to minimize the potential for accidents related to aircraft operation by coordinating with the Monterey County Airport Land Use Commission (ALUC) to review development proposals for compatibility with the Salinas Municipal Airport Master Plan, Monterey County Airport Land Use Plan, and California Airport Land Use Planning Handbook for	Community Development, Development and Permit Services, Monterey County ALUC, Salinas Airport		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	comprehensive airport land use planning.			
H14	The City will implement General Plan Implementation Program S-12 – Salinas Municipal Airport Master Plan, which requires the City to revise the Airport Master Plan in order to update operational and safety procedures, reflect State and Federal mandates, better utilize airport property, and recommend land use compatibility standards for land surrounding the airport.	Community Development, Salinas Airport, ALUC		
H15	The City will implement General Plan Implementation Program N-4 – Salinas Municipal Airport Master Plan, which requires the City upon any update of the Salinas Municipal Airport Master Plan, the County Airport Land Use Plan, or California Airport Land Use Planning Handbook, review and revise as necessary Table N-4, Figure N-2, and the goals, policies, and noise plan within the General Plan Noise Element to correspond with the updated Airport Master Plan.	Community Development, Salinas Airport Commission, ALUC		
H16	The City will implement General Plan Implementation Program S-23 – Multi-hazard Emergency Plan, which requires the City to annually review and update the Multi-Hazard Emergency Plan under the provision of the State Emergency Management System format to maximize the efforts of emergency service providers (e.g., fire, medical, and law enforcement) and minimize human suffering and property damage during disasters. Provide annual practice sessions to the City. Support high-level multi-jurisdictional cooperation and communication for emergency planning and management. Solicit private individuals and organizations to enhance service provider communications and response with cellular telephones, ham radios, AM/FM radio, and cable television.	Community Development, Police Department, Fire Department, public and private medical facilities, Monterey County Emergency Communications, Monterey County Mobile Emergency Coordination Unit, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		
H17	The City will implement General Plan Implementation Program S-23 – Emergency Preparedness Education, which requires the City to coordinate with local agencies and organizations to educate all citizens to take appropriate action to safeguard life and property during and immediately after emergencies.	Fire Department, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Biological Resources				
BR1	The City will implement General Plan Implementation Program COS-17 – Setbacks and Open Space Easements to Protect Riparian and Wetland Corridors, on an ongoing basis. Implementation Program COS-17 requires project developers to protect and enhance riparian corridors through setbacks and open space easements within development areas along Gabilan and Natividad Creeks and other streams in the planning area. Protect and enhance wetlands by requiring setbacks and open space easements within future development areas in the planning area. A 100-foot setback area shall be established along Gabilan and Natividad Creeks and other unnamed creeks within the planning area. The setback shall be measured from the top of bank, or outside edge of riparian woodland, whichever is greater. A 100-foot setback area shall be established along wetlands not associated with creeks (i.e., seasonal wetland swales or ponds) within the planning area. The riparian setback shall be measured from the top of bank, or outside edge of riparian woodland, whichever is greater. The wetland setback shall be measured from the outside edge of the wetland. Except as set forth below, development activities would be prohibited in the setback area; however, the City shall consider exceptions for passive recreational uses (i.e., trails, playfields, and picnic areas). Except as set forth below, no building or structure shall be developed in the setback area. The existing riparian woodland or wetland shall be protected from construction disturbance. Fencing shall be temporarily placed at the outside edge of the setback area during construction. This fencing shall remain in-place until construction is complete. If recreational trails are placed within the buffer area, implement a re-vegetation program wherein a vegetative buffer is established between the trail and the outside edge of the riparian woodland. For properties located in the City's existing boundary as indicated on *Figure LU-1of the General Plan Land Use Element*, development activities may be considered within the setback area if the City Planner determines the encroachment will not have a significant adverse impact on the riparian and wetland resources either because: i) the implementation of alternative mitigation measures will achieve a comparable or a better level of mitigation than the strict application of the one hundred foot (100') setback, or ii) the property being developed is adjacent to a reclamation ditch, and no riparian or wetland resources are identified outside the areas of the improved ditch, as demonstrated and confirmed in either case by a biotic resources study (prepared for the City Planner by his or her designee). The	Community Development, Development and Permit Services, Recreation-Parks, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	applicant shall be responsible for the costs of the study, mitigation, and required monitoring.			
BR2	The City will implement General Plan Implementation Program COS-17 – Riparian/Wetland Habitat Mitigation and Management, on an ongoing basis. Implementation Program COS-17 requires the project developer to retain creeks and wetlands in their natural channels rather than placing them in culverts or underground pipes, where feasible. Where streambanks must be deepened, widened or straightened, they should be landscaped and revegetated afterward. Where wetlands are impacted, they should be re-created afterwards. If impacts are incurred to creeks and/or riparian woodlands as part of development within the planning area, the project applicant shall develop and implement a riparian/wetland habitat mitigation and management plan. The plan shall specify the replacement ratio for impacts to riparian resources and to wetland resources, pursuant to current state and federal policies. The project applicant shall receive authorization to fill wetlands and "other" waters from the US Army Corps of Engineers, pursuant to the requirements of the Clean Water Act. The project applicant shall also obtain a water quality certification (or waiver) from the Regional Water Quality Control Board, consistent with requirements of this State agency. The project applicant shall also obtain a 1601/1603 Streambed Alteration Agreement from the California Department of Fish and Game, pursuant to Fish and Game Code. These permits shall be received prior to any site grading that may occur in or immediately adjacent to creeks or wetlands. The project applicant shall also receive authorization from the National Marine Fisheries Service for "take" of steelhead and from the U. S. Fish and Wildlife Service for "take" of California red-legged frog, if work cannot avoid impacts to creek resources and/or these species. Pursuant to provisions of the Section 404 permit, 1601/1603 Streambed Alteration Agreement and State water quality certification (or waiver), the	Community Development, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	project applicant shall implement a riparian/wetland mitigation plan, and any other measures so identified by regulatory agencies. This plan shall identify measures for the applicant to compensate for unavoidable impacts to riparian or wetland resources. A minimum 1:1 replacement ratio is typically recommended for impacted wetland resources to satisfy requirements of the U.S. Army Corps of Engineers and the Regional Water Quality Control Board (RWQCB). A minimum 3:1 replacement ratio is typically recommended for impacted riparian resources to satisfy requirements of the CDFG. The applicant shall also identify and implement a 5-year maintenance and monitoring program.			
BR3	The City will implement General Plan Implementation Program COS-19 – Reduce Nitrate and Sediment Input to Creeks, on an ongoing basis. Implementation Program COS-19 requires the City to cooperate with the Regional Water Quality Control Board and the Resource Conservation District in their efforts to develop a plan to assist agricultural operations to reduce nitrate and sediment input to creeks. Such a plan will enhance water quality and benefit aquatic plants and wildlife within the planning area as well as downstream.	Community Development, Regional Water Quality Control Board, Resource Conservation District		
BR4	The City will implement General Plan Implementation Program COS-20 – Oak Tree Retention, on an ongoing basis. Implementation Program COS-20 requires the project developer to retain coast live oak and valley oak trees within the planning area, including oaks within new development areas. All coast live oak and valley oak trees should be surveyed prior to construction to determine if any raptor nests are present and active. If active nests are observed, the construction should be postponed until the end of the fledgling.	Community Development		
BR5	The City will implement General Plan Implementation Program COS-21 – Protection and Enhancement of Special Status Species, on an ongoing basis. Implementation Program COS-20 requires the project developer to protect and enhance special status species habitat through setbacks and open space easements within new development and/or redevelopment areas. Protection and enhancement of special status species habitat by State and Federal Agencies, with the cooperation of the City, to ensure persistence of the species within the setback areas. Surveys shall be conducted at the appropriate season to ascertain whether the habitats within the proposed project area support special status species. If	Community Development, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	special status species are observed, avoidance measures shall be implemented. A qualified biologist shall conduct a biological assessment of all habitat areas to assess the potential for the following special status species: Congdon's tarplant, Contra Costa goldfields, Pinnacles buckwheat, Alkali milk-vetch, Santa Cruz clover, Hutchinson's larkspur, Kellogg's horkelia, Burrowing owl, and/or California tiger salamander. If suitable habitat for any of these species is observed, then focused surveys during the appropriate season should be conducted. Such surveys would include winter and spring surveys for tiger salamander, protocol presence/absence surveys for burrowing owl, and spring/summer surveys for special status plant species. The California Department of Fish and Game shall be consulted regarding the appropriate level of effort and protocol prior to conducting focused wildlife species surveys. If any of these species are found to inhabit the survey area, the City may require the preparation and implementation of a Habitat Management Plan to provide protection for the habitat. If impacts to occurrences are deemed unavoidable, the plan shall identify mitigation measures to compensate for impacts to the species. As part of the Habitat Management Plan, a 100-foot buffer shall be established around rare plant occurrences. The plan shall include measures to manage the rare plant occurrences for their protection and persistence at the site. The Habitat Management Plan shall be reviewed and approved by California Department of Fish and Game and/or USFWS prior to issuance of any permits by the City. Prior to any proposed development within 150 feet of the stream corridors, protocol presence/absence surveys for California red-legged frog, southwestern pond turtle, and nesting birds should be conducted. If these species are observed, the CDFG and the USFWS should be consulted regarding appropriate measures to avoid and mitigate potential impacts of the project on these species. The City shall not issue any permits prior to obtaining written approval from the CDFG and/or USFWS that the proposed mitigation plan has been approved. Prior to any proposed development within or adjacent to oak woodland, a qualified biologist should conduct surveys to determine if protected wildlife species are nesting in the oak woodland, e.g., nesting raptors. If trees are to be removed, a qualified bat biologist should evaluate the trees as potential bat roost sites prior to removal, and recommend measures to avoid impacts to bats, such			

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	as exclusionary devices.			
Agricultural Resources				
AG3	The City will implement General Plan Implementation Program COS-11, which requires the City to be consistent with the County of Monterey's "Right-to-Farm" Ordinance, and the County of Monterey Draft General Plan Policy LU-7.8 and Actions LU-7.b and LU-7.c, revise the City's Zoning Ordinance to require the recordation of a Right-to-Farm Notice as a condition of discretionary permit approval for residential development within 1,000 feet of an established agricultural operation. The purpose of the Notice is to acknowledge that residents in the area may experience inconveniences and discomfort associated with the normal farming and grazing activities, such as noise and dust. The Notice shall specifically state that a variety of activities may occur that may be incompatible with the proposed development and that an established agricultural operation in full compliance with applicable laws, shall not be considered a nuisance due to changes in the surrounding area. The Notice shall also state that a person's right to recover under a nuisance claim against these activities may be restricted.	Community Development, ACOE, FWS, CDFG		
AG4	The City will implement General Plan Implementation Program COS-10 - Buffers, which requires the City to encourage the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and non-agricultural land uses. A number of factors shall be used to determine the appropriate buffer, including type of agricultural use, topography, and pesticide and machinery use, among others.	Community Development		
Geology/Soils				
GS1	The City will implement General Plan Implementation Program S-14, Natural Hazards Risk Reduction, prior to the approval of a discretionary permit. Implementation Program S-14 requires the City to assess development proposals for potential hazards pursuant to the California Environmental Quality Act, requiring measures when necessary to mitigate all identified public safety hazards.	Community Development, Fire Department, Public Works		
GS2	The City will implement General Plan Implementation Program S-15 – Open	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	Space Easements for Natural Hazards, when the threat from natural hazards cannot be mitigated through geotechnical and structural design methods. Implementation Program S-15 requires the City to use open space easements and other regulatory techniques to prohibit development and avoid unmitigable public safety hazards.			
GS3	The City will implement General Plan Implementation Program S-16 – Structural Design, on an ongoing basis. Implementation Program S-16 requires the City to implement the most recent state building and seismic requirements for the structural design of new development and redevelopment projects.	Development and Permit Services		
GS4	The City will implement General Plan Implementation Program S-17 – Soil and Geologic Surveys, on an ongoing basis. Implementation Program S-17 requires that during the review of development and redevelopment proposals, the City require surveys of soil and geologic conditions by state licensed Engineering Geologists and Civil Engineers where appropriate. When potential geologic impacts are identified, the City shall require project applicants to mitigate the impacts per the recommendations contained within the geologic survey.	Community Development, Development and Permit Services, Public Works		
GS5	The City will implement General Plan Implementation Program S-23 – Multi-hazard Emergency Plan, on an ongoing basis. Implementation Program S-23 requires the City to maintain the Multi-hazard Emergency Plan under the provision of the State Emergency Management System format to maximize the efforts of emergency service providers (e.g., fire, medical, and law enforcement) and minimize human suffering and property damage during disasters. Support high-level multi-jurisdictional cooperation and communication for emergency planning and management. Solicit private individuals and organizations to enhance service provider communications and response with cellular telephones, ham radios, AM/FM radio, and cable television.	Community Development, Police Department, Fire Department, public and private medical facilities, Monterey County Emergency Communications, Monterey County Mobile Emergency Coordination Unit, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		
GS6	The City will implement General Plan Implementation Program S-24 – Emergency Preparedness Education, on an ongoing basis. Implementation Program S-23 requires the City coordinate with local agencies and organizations	Fire Department, Federal Emergency Management Agency (FEMA), American		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	to educate all residents and businesses to take appropriate action to safeguard life and property during and immediately after emergencies.	Red Cross, Monterey County Office of Emergency Services		
Aesthetics				
A1	The City will implement General Plan Implementation Program CD-1 – City Gateway Guidelines. Implementation Program CD-1 requires the City to implement the City's Gateway Guidelines addressing identification graphics and entry signs, lighting, and landscaping for the City's major entry points identified in Figure CD-1.	Community Development		
A2	The City will implement General Plan Implementation Program CD-2 – Architectural Design. Implementation Program CD-2 requires the City to strengthen the City's Design Guidelines and require compliance to enhance the City's visual appeal and ensure compatible, aesthetically pleasing development with particular emphasis on: 1) historic areas of the community; and 2) properties visible from Highway 101.	Community Development, Redevelopment Agency		
A3	The City will implement General Plan Implementation Program CD-3 – Lighting Ordinance, on an ongoing basis. Implementation Program CD-3 requires the City to improve the City Lighting Ordinance to ensure that: 1) all future outdoor lights include cut-off lenses to minimize light dispersion above the fixture head; 2) a lighting study is required to be performed when appropriate to ensure adequate light levels, while not exceeding industry standards; and 3) sky glow is reduced.	Community Development		
A4	The City will implement General Plan Implementation Program CD-4 – Landscaping Standards, on an ongoing basis. Implementation Program CD-4 requires the City to implement landscaping requirements for public and private development and redevelopment projects to promote greater visual and functional compatibility with residential development and pedestrian/bicycle use.	Community Development, Redevelopment Agency		
A5	The City will implement General Plan Implementation Program CD-5 – Review Discretionary Development Projects, on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	for potential aesthetics impacts per the California Environmental Quality Act (CEQA). The standards established in the Zoning Code, the City's Design Guidelines, Landscaping Standards, Lighting Ordinance, Gateway Guidelines, the projects incorporation of Traditional Neighborhood Development (TND) characteristics, and the projects potential to damage or block scenic resources and views will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of project redesign (e.g., bulk, height, architectural details, lighting) will be required to reduce the impact to a level less than significant.			
A6	The City will implement General Plan Implementation Program COS-10 – Buffers, on an ongoing basis. Implementation Program COS-10 requires the City to encourage the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and non-agricultural land uses. A number of factors shall be used to determine the appropriate buffer, including type of agricultural use, topography, and pesticide and machinery use, among others.	Community Development		
A7	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, on an ongoing basis. Implementation Program COS-9 requires the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	Community Development, County of Monterey		
A8	The City will implement General Plan Implementation Program LU-7 – City-Centered Growth, on an ongoing basis. Implementation Program LU-7 requires the City to give priority to redevelopment and infill projects that reduce development pressure on agricultural lands and establish an incentive program to promote these projects, such as priority permit processing and density bonuses, for such developments.	Community Development, Redevelopment Agency		
A9	The City will implement General Plan Implementation Program CD-8 – California Main Street Program on an ongoing basis. Implementation Program CD-8 requires the City to expand community participation in the Main Street Program and continue to work with the Program to create an identity that emphasizes our cultural heritage and attracts businesses and consumers to the	Community Development, Public Works, Redevelopment Agency, Oldtown Salinas organization		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	downtown area.			
A10	The City will implement General Plan Implementation Program COS-14 – Historic/Architectural Preservation, on an ongoing basis. Implementation Program COS-13 requires the City to consider implementing a historic/architectural preservation program and a historic/architectural preservation ordinance that encourages public/private partnerships to preserve and enhance historically significant buildings in the community. Measures to implement may include, but are not limited to, Transfer of Development Rights (TDR), establishment of criteria for a historic/architectural resources review process, and implementation of a Mills Act program. TDR could benefit the community by protecting historic resources through an agreement that allows the development potential ("rights") on the historic property to be transferred to another property when the historic resources on the original property is preserved. The Mills Act program would involve the City entering into a contract with a property owner to change how the County Assessor calculates taxes on their property in exchange for the continued preservation of the property by the property owner. The adjusted property taxes are recalculated using a formula in the Mills Act and Revenue and Taxation Code.	Community Development, Redevelopment Agency, City Manager's Office, City Council, County Assessors Office		
Population and Housing				
PH1	The City will implement General Plan Implementation Program HE-2 – Provision of Future Sites, which requires the City to continue to work with the Local Agency Formation Commission to ensure that sufficient land, infrastructure, and services are available to support housing development.	Community Development		
PH2	The City will implement General Plan Implementation Program LU-12 – Fire Protection, Emergency Services, and Law Enforcement Annual Level of Service Review, which requires the City to review the level of services and funding levels at budget time, adjusting when necessary to ensure that adequate levels of service are provided and facilities are maintained.	Fire Department, Police Department		
PH3	The City will implement General Plan Implementation Program C-3 – Capital Improvement Plan, which requires the City to continue to update on an annual basis the Capital Improvement Plan to plan for and fund future improvements to	Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	the circulation system, as well as other public facilities, including improvements to the existing pedestrian and bicycle system, within the community.			
PH4	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requires the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east from the most productive farmland.	Community Development, County of Monterey		
PH5	The City will implement General Plan Implementation Program COS-33 – Promote Energy Retrofit Programs, which requires the City to promote retrofit programs by the City to reduce energy usage and consequently reduce emissions from energy consumption. Encourage utility companies to provide informational literature about available retrofit programs at City offices, the Permit Center, and libraries.	Development and Permit Services, utility companies		
PH6	The City will implement General Plan Implementation Program CD-11 – Smart Growth Principles, which requires the City to use the Smart Growth Network's Getting to Smart Growth: 100 Policies for Implementation (ICMA, 2002) or other similar policy manual, perform an "audit" of the City's Zoning and Subdivision Ordinances to identify potential impediments to the development of smart growth and traditional neighborhood development projects. Revise, adopt, and implement new standards and procedures as necessary to encourage smart growth and traditional neighborhood development in Salinas.	Community Development, Public Works		
PH7	The City will implement General Plan Implementation Program COS-23 – Monterey Bay Unified Air Pollution Control District Air Quality Management Plan, which requires the City to continue to cooperate with the Monterey Bay Unified Air Pollution Control District to implement the most recent Air Quality Management plan to address regional motor vehicle emissions. In particular, coordinate with the District and AMBAG, providing technical assistance and demographic data when available, during the development of future population projections by AMBAG.	Community Development, Monterey Bay Unified Air Pollution Control District, AMBAG		
Public Services and Utilities				
PSU1	The City shall require new development to provide parkland and/or in-lieu fees,	Recreation-parks		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	as allowed by law, to provide for three acres of parkland for every 1,000 residents.			
PSU2	The City will implement General Plan Implementation Program LU-16 – Monterey Regional Water Pollution Control Agency, which requires the City to continue to work with the Monterey Regional Water Pollution Control Agency (MRWPCA) to plan for and ensure adequate capacity for sewage treatment facilities.	Public Works, MRWPCA		
PSU3	The City will implement General Plan Implementation Program LU-14 – Water and Sewer Services for New Development, which requires the City to review development proposals and require necessary studies, as appropriate, and water conservation and mitigation measures to ensure adequate water and sewer service.	Community Development, Public Works, Water Providers, Monterey Regional Water Pollution Control Agency (MRWPCA)		
PSU4	The City will implement General Plan Implementation Program LU-15 – Sewer and Drainage master Plan, which requires the City to continue to implement and update the Sewer and Drainage Master Plan as necessary. In addition, as part of the Master Plan update, the City will analyze the need for additional pump station capacity and identify methods to reduce the wet weather flows.	Public Works		
PSU5	Requires developers and the City to install essentially leak-free sewer piping in new developments and in City collection system projects that will prevent inflow/infiltration (I/I) from entering the system. City shall also conduct smoke testing, inspection, and improvements to the existing sanitary sewer system to help prevent I/I.	Public Works		
SEIR WW1	The City shall implement 15 percent water conservation measures for development within the Project area.	Community Development, Development and Permit Services, Public Works		
SEIR WW2	The City shall confirm the availability of adequate sewage treatment capacity prior to the approval of each tentative subdivision map within the Project area.	Community Development, Development and Permit Services, Public Works		
SIGNIFICANT AND UNAVOIDABLE CUMULATIVE IMPACTS				

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Regional Circulation System				
	(see previous C3, C5 and C7)			
Vehicular Traffic Noise				
	(see previous N2 and N5)			
Regional Air Quality				
	(see previous AQ1 through AQ7)			
Groundwater				
	(see previous HW4 and HW9 through HW13)			
Cultural Resources				
	(see previous CR1)			
Conversion of Agricultural Land				
	(see previous AG1, AG2, and AG5)			
Parkland				
	(see previous PSU1)			
Solid Waste				
	(see previous PSU6)			
Global Climate Change				
SEIR GCC1	Within 36 months, the City shall establish a global climate change action plan that includes a baseline inventory of all GHG emissions associated with all residences, businesses, industries, agriculture, municipal operations, and other sources within the City limits; establishment of a GHG emissions reduction	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	target; development of enforceable, feasible GHG emissions reduction measures to meet the established target; and performance monitoring of the GHG emissions reduction measures shall occur every 3 years to ensure the emissions reductions are being achieved.			
SEIR GCC2	Prioritized parking within new commercial and retail areas shall be given to electric vehicles, hybrid vehicles, and alternative fuel vehicles.	Community Development, Development and Permit Services, Public Works		
SEIR GCC3	The City shall require that new or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) for residential projects of 6 units or more comply with at least one of the following: • Participate in the CEC's New Solar Homes Partnership (this program provides rebates to developers of 6 units or more who offer solar power in 50 percent of new units), or a similar program with solar power requirements equal to or greater than those of the CEC's New Solar Homes Partnership as demonstrated to the City by the project applicant. • Design, construct, or retrofit 50 percent of the square footage of the building(s) that are part of the project capable of being certified under one of the following Leadership in Energy and Environmental Design (LEED) or equivalent building rating systems: LEED for New Construction; LEED for Existing Buildings, LEED for Homes, LEED for Core & Shell, or any Application Guides of these rating systems. However, no formal LEED certification shall be required, and the City Manager or his/her designee shall make the determination that the potential for LEED certification has been achieved. All credits used to demonstrate capability to meet one of the above certifications must directly or indirectly result in a reduction in GHG emissions.	Community Development, Development and Permit Services, Public Works		
SEIR GCC4	The City shall require that new or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) of commercial, office, or industrial development greater than or equal to 25,000 square feet in size must incorporate renewable energy generation (on- or off-site) to provide 15 percent or more of the project's energy needs.	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
SEIR GCC5	The City shall require new development or redevelopment projects in excess of 10 acres in size be capable of meeting the certification requirements of the LEED for Neighborhood Development Rating System Pilot Version (February 2007) ("LEED ND"). However, no formal certification shall be required, and the City Manager or his/her designee shall make the determination that the potential for certification has been achieved. All credits used to demonstrate capability to meet the LEED ND certification must directly or indirectly result in a reduction in GHG emissions.	Community Development, Development and Permit Services, Public Works		
SEIR GCC6	The City shall require that the design or purchase of any new street lights and water and wastewater pumps and treatment systems achieve a 10 percent reduction beyond an estimated baseline energy use for this infrastructure. All new traffic lights installed within Salinas shall use LED technology.	Community Development, Development and Permit Services, Public Works		
SEIR GCC7	The City shall require all new development or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects to recycle and/or salvage at least 50 percent of nonhazardous construction and demolition debris. To implement this requirement, a construction waste management plan identifying materials to be diverted from disposal and whether the materials will be stored on-site or commingled shall be developed and implemented by the applicant for said development or rehabilitation. Excavated soil and land-clearing debris do not contribute to this credit. Calculation can be done by weight or volume but must be consistent throughout.	Community Development, Development and Permit Services, Public Works		
SEIR GCC8	The City shall require all new development and major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects to incorporate any combination of the following strategies to reduce heat gain for 50 percent of the nonroof impervious site landscape (including roads, sidewalks, courtyards, parking lots, and driveways): • Shaded (within 5 years of occupancy) • Paving materials with a Solar Reflectance Index (SRI) of at least 29 • Open grid pavement system • Parking spaces under cover (defined as underground, under deck, under roof, or under a building). Any roof used to shade or cover parking	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	must have an SRI of at least 29.			
SEIR GCC9	The City shall require that all new development or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects incorporate "green building" points in construction plans prior to issuing a permit to build. Such points may be achieved through checklists identified by New Home Construction Green Building Guidelines available at www.builditgreen.org, or through a similar list that distinguishes specific measures targeting efficiencies in energy, resource use, or other measures that would also directly or indirectly result in GHG emission reductions. Specific efficiencies that would reduce GHG emissions should be implemented where feasible for all project areas including site design, landscaping, foundation, structural frame and building envelope, exterior finishing, plumbing, appliance use, insulation, heating, venting and air conditioning, building performance, use of renewable energy, finishes, and flooring.	Community Development, Development and Permit Services, Public Works		

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